GCC Energy

"Safety as a Value"

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GCC Energy, LLC
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Hesperus, CO 81326

March 30, 2020

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

Attn: Janet Binns

Re: Field Well Water Analysis; King I & King II
1st Quarter 2020

Ms. Binns:

Please find enclosed a copy of quarterly water analysis reports for the 4th quarter of 2019 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-5-C, MW-5-MI
- MW-HGA-4
- MW-6-A, MW-6-MI, MW-6-LM
- MW-7-EAA & Blind Duplicate MW-99-A
- MW-8-EAA, MW-8-MI, MW-8-LM, MW-8-PL

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

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Upgradient

		2016										2017						2018				2019				2020
Year																										
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	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	5	8	11	2	5	8	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	5/14	8/9	11/8	2/28	5/23	8/16	11/13	2/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																										
Flow Rate	*cfs*	0.7	1.0	1.2	1.6	1.0	1.0	1.1	1.0	NM	1.0	NM	0.8	0.3	2.7	NM	NM	NM	0.6	0.7	0.7	0.3	3.6	1.2	NM	NM
Temperature	*deg C*	9.8	20.9	11.3	21.1	20.8	16.8	14.9	16.4	5.9	7.0	1.5	4.7	10.7	20.2	19.7	8.8	4.7	11.3	22.1	1.1	5.9	5.9	16.9	5.7	1.5
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	7.58	9.07	7.16	6.4	7.53	8.03	7.33	7.75
Specific Conductance	*µS/cm*	247	323	197	141	189	207	233	210	258	234	687	455	454	106	549	868	1041	304	307	307	752	306	275	682	902
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	111.4	-181.3	13.9	103.7	-24.0	24.4	-22.4	-4.5
Dissolved Oxygen	*mg/L*	8.1	6.4	8.0	6.0	6.5	6.9	7.2	4.7	6.7	6.1	10.6	9.0	6.9	4.8	6.7	9.3	9.4	8.5	6.4	10.2	8.0	8.9	7.8	7.9	7.0
Lab Analytical Results:																										
Hardness as CaCO3	*mg/L*	128			80.9			119		152				257	69.2	316	456	489	101	153	149	393	136	125	372	405
pH (Lab)	*SU*	8.17			8.04			8.16		8.19				8.06	8.06	8.22	8.31	8.39	7.99	9.07	7.86	7.45	7.69	7.83	7.40	7.22
Total Dissolved Solids (Lab)	*mg/L*	170			75			165		180				285	65.0	390	650	700	140	215	175	535	205	225	635	587
Total Suspended Solids	*mg/L*	30.0			117			17.0		4.8				2.50	63.5	2.00	5.75	6.01	106	6.25	14.8	22.0	113	20.0	5.38	<4
Calcium	*mg/L*	33.5			24			33.0		38.4				53.6	20.8	64.9	86.6	87.3	26.3	39.1	40.3	79.8	34.6	32.4	79.3	81.5
Magnesium	*mg/L*	10.9			5.08			9.01		13.7				29.8	4.21	37.5	58.3	65.9	8.61	13.5	11.9	47.0	12.1	10.8	42.2	49
Sodium	*mg/L*	4.46			2.19			3.90		6				10.9	1.97	13.8	27.1	34.6	3.31	5.33	5.00	19.1	7.24	5.81	25.4	30.9
Potassium	*mg/L*	<1			<1			1.35		<1.00				<1.00	1.75	2.15	3.05	3.52	1.18	1.24	<1.00	3.89	1.57	1.07	3.25	3.65
Alkalinity, Total	*mg/L*	160			65			98.0		118				185	55.0	177	305	244	67	111	120	260	390	103	233	315
Alkalinity, Bicarbonate	*mg/L*	160			65			94.0		118				185	55.0	161	285	244	67	107	120	260	390	103	233	295
Alkalinity, Carbonate	*mg/L*	<10			<10			<10		<10.0				<10.0	<10.0	16.0	20.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Alkalinity, Hydroxide	*mg/L*	<10			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Chloride	*mg/L*	5.77			2.07			4.32		7.92				22.7	1.76	30.8	48.2	46.7	3.12	6.70	5.58	48.1	7.75	6.04	22.8	31.6
Fluoride	*mg/L*	0.213			0.208			0.223		0.208				0.215	0.195	0.265	0.283	0.285	0.224	0.272	0.224	0.252	0.208	0.214	<0.500	0.239
Sulfate as SO4	*mg/L*	42.1			17.7			29.0		45.3				87.7	15.0	99.0	179	229	34	49.7	45.0	128	47.2	35.6	107	151
Total Organic Carbon (TOC)	*mg/L*	1.41			1.6			2.21		1.14				2.49	1.15	1.90	1.99	1.81	2.31	1.61	1.09	4.94	3.08	1.84	4.54	5.45
Oil & Grease	*mg/L*	<5			<5			<5		<5.00				<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5
Nitrate/Nitrite as N	*mg/L*	<0.02			0.028			<0.020		<0.020				0.053	<0.020	0.045	0.088	0.105	0.026	<0.020	<0.020	0.263	0.050	0.072	0.104	0.044
Sodium Adsorption Ratio (SAR)	*no unit*	0.17			0.1			0.16		0.21				0.30	0.10	0.34	0.55	0.68	0.14	0.18	0.16	0.42	0.26	0.22	0.55	0.65
Ammonia as N ^	*mg/L*																								<0.100	
Ortho-Phosphate as P ^	*mg/L*																								<0.0500	
Aluminum	*mg/L*	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05
Arsenic	*mg/L*	<0.0005			<0.0005			<0.0005		<0.0005				0.0005	<0.0005	0.0009	0.0007	<0.0025	<0.0005	0.0009	<0.0005	0.0007	0.0006	0.0007	0.0005	0.0006
Cadmium	*mg/L*	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper	*mg/L*	0.0006			0.0011			0.0011		0.0005				0.0008	0.0013	0.0006	0.0005	0.0007	0.0011	0.0011	0.0013	0.0026	0.0013	0.0012	0.0005	0.0005
Iron	*mg/L*	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	0.255	0.055	<0.050	0.316	0.551
Lead	*mg/L*	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	*mg/L*	0.0059			0.0035			0.0043		0.0047				0.0070	0.0024	0.0098	0.0049	0.0049	0.0093	0.0016	0.0043	0.127	0.0349	0.0096	0.113	0.368
Mercury	*mg/L*	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Molybdenum	*mg/L*	<0.0005			0.0009			0.0007		0.0008				0.0006	0.0009	0.0012	0.0008	<0.0025	0.001	0.0012	0.0009	0.0011	0.0009	0.0011	0.0007	0.0005
Selenium	*mg/L*	<0.001			<0.001			<0.001		<0.0010				0.0023	<0.0010	<0.0010	0.0010	<0.0050	<0.001	<0.001	<0.001	0.0017	<0.0010	<0.0010	<0.0010	<0.001
Silica (Si02)	*mg/L*	7.78			8.23			10.5		9.71				9.04	7.71	9.45	10.1	11.0	8.4	8.64	8.31	11.3	8.55	9.17	13.4	13
Silicon	*mg/L*	3.64			3.85			4.89		4.54				4.23	3.60	4.42	4.71	5.14	3.93	4.04	3.88	5.29	3.99	4.29	6.25	6.06
Uranium	*mg/L*	0.0002			0.0001			0.0002		0.0003				0.0003	0.0001	0.0006	0.0009	0.0013	0.0001	0.0002	0.0003	0.0009	0.0003	0.0004	0.0007	<0.0005
Zinc	*mg/L*	<0.001			<0.001			<0.001		<0.0010				0.0022	<0.0020	<0.0040	<0.0020	<0.0100	<0.002	0.0033	<0.002	0.0044	<0.0020	<0.0020	0.0033	0.0087
Radium 226	*pCi/L*	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	*pCi/L*	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^ one-time analysis
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				2019				2020
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	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	5	8	11	2	5	8	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	5/7	8/9	11/7	2/28	5/23	8/16	11/13	2/6
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																										
Flow Rate	cfs	1.1	1.2	1.1	NM	1.1	1.1	NM	0.8	NM	NM	NM	0.8	0.3	0.3	NM	dry	NM	NM	NM	0.5	0.25	0.3	1.05	NM	NM
Temperature	deg C	11.8	17.6	10.9	21.9	21.3	18.8	16.1	11.8	7.0	6.6	7.2	5.0	12.7	17.6	18.7		6.3	11.3	20.6	4.7	6.88	8.23	15.15	3.51	3.73
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	7.58	7.43	7.48	6.42	7.77	7.61	8.38	7.94
Specific Conductance	µS/cm	429	530	297	116	308	257	1183	420	421	728	678	987	17	114	164		742	304	356	309	577	202	295	554	882
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	111.4	-10	-88.9	125.6	50.6	111.6	-108.1	124.2
Dissolved Oxygen	mg/L	7.9	7.7	8.7	6.0	6.7	5.6	6.8	7.1	6.5	7.2	7.6	9.8	5.6	6.4	7.1		9.8	8.5	6.3	9.1	7.6	8.8	7.2	9.6	9.5
Lab Analytical Results:																										
Hardness as CaCO3	mg/L	226			67.8			480		267				503	59.1	91.4		329	140	182	167	281	91.9	137	295	416
pH (Lab)	SU	8.42			8.13			8.25		8.24				8.15	7.98	7.98		8.17	8.05	8.09	7.95	7.84	7.68	7.73	7.73	7.80
Total Dissolved Solids (Lab)	mg/L	270			55			630		320				615	65.0	80.0		420	220	260	185	390	185	195	355	573
Total Suspended Solids	mg/L	27.3			18			4.20		12.4				12.7	3.00	<0.500		49.5	<2	5.67	4.40	18.4	153	22.5	<4.00	4.20
Calcium	mg/L	55.5			21.9			94.7		65.5				112	19.0	29.5		75.4	37.5	49.0	44.7	61.6	26.0	34.5	67.2	85.6
Magnesium	mg/L	21.1			3.15			59.1		25.2				54.6	2.86	4.31		34.2	11.2	14.4	13.4	31	6.54	12.3	30.8	49.0
Sodium	mg/L	8.69			1.57			16.8		10.7				22.5	1.49	2.37		18.1	5.42	6.49	5.15	16.5	5.03	6.62	17.0	28.5
Potassium	mg/L	1.49			<1			4.48		1.46				2.33	<1.00	<1.00		2.84	1.14	1.58	1.34	3.13	1.31	1.27	2.60	3.81
Alkalinity, Total	mg/L	220			59			220		225				320	47.0	85.0		265	112	170	140	150	340	140	194	297
Alkalinity, Bicarbonate	mg/L	220			59			140		155				320	47.0	85.0		259	104	170	140	150	340	140	188	283
Alkalinity, Carbonate	mg/L	<10			<10			80.0		70				<10.0	<10.0	<10.0		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	14.0
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	<10.0		<10.0	<10.0	<10.0	<10.0	<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	7.54	7.47	5.69	40.2	16.9	7.65	14.8	30.7
Fluoride	mg/L	0.244			0.195			0.244		0.227				0.224	0.290	0.227		0.308	0.228	0.295	0.228	0.232	0.205	0.218	0.252	0.272
Sulfate as SO4	mg/L	68.1			13.5			144		89.5				204	11.3	17.9		86.5	40.2	46.8	45.0	91.4	18.5	42.7	83.3	143
Total Organic Carbon (TOC)	mg/L	1.53			1.4			3.48		1.65				2.31	2.16	0.932		1.56	1.28	1.33	1.76	2.90	2.37	2.10	3.26	4.53
Oil & Grease	mg/L	<5			<5			<5		<5.00				<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	<5.00	<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	<0.020	<0.020	<0.020	0.17	0.146	0.090	<0.020	0.056
Sodium Adsorption Ratio (SAR)	no unit	0.25			0.03			0.33		0.28				0.44	0.08	0.11		0.43	0.2	0.20	0.17	0.43	0.22	0.24	0.41	0.61
Ammonia as N ^	mg/L																								<0.100	
Ortho-Phosphate as P ^	mg/L																								<0.0500	
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<0.050	<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	0.0005	0.0008	<0.0005	0.0006	0.0006	0.0006	0.0005	0.0006
Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001		<0.0001	<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	0.0008	0.0008	0.0008	<0.0010	0.0021	0.0009	0.0007	0.0006
Iron	mg/L	<0.05			<0.05			<0.050		<0.050				<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<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	<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	0.0038	0.0445	0.0102	0.048	0.0125	0.0033	0.0102	0.0286
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Molybdenum	mg/L	<0.0005			0.0008			0.0013		0.0007				<0.0005	0.0009	0.0011		0.0010	0.0011	0.0012	0.0010	0.001	0.0011	0.0012	0.0007	0.0006
Selenium	mg/L	<0.001			<0.001			0.0026		<0.0010				0.0022	<0.0010	<0.0010		0.0011	<0.0010	<0.0010	<0.001	0.0012	<0.0010	<0.0010	<0.0010	<0.0010
Silica (Si02)	mg/L	8.96			7.48			11.8		10.9				12.2	6.80	8.53		10.7	8.41	8.77	8.66	8.46	5.70	8.86	11.8	12.3
Silicon	mg/L	4.19			3.5			5.51		5.11				5.70	3.18	3.99		5.01	3.93	4.10	4.05	3.95	2.67	4.14	5.50	5.75
Uranium	mg/L	0.0004			0.0001			0.0006		0.0006				0.0009	0.0001	0.0002		0.0012	0.0004	0.0005	0.0003	0.0009	0.0002	0.0004	0.0007	0.0006
Zinc	mg/L	<0.001			0.0021			0.0013		0.0012				<0.0020	<0.0020	<0.0040		<0.0020	0.0074	0.0048	0.0035	0.0022	<0.0020	<0.0020	<0.0020	<0.0020
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^ one-time analysis
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				2019				2020
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	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	5	8	11	2	5	8	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	5/14	8/9	11/7	2/25	5/23	8/16	11/14	2/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																										
Purge Flow Rate	gpm	1.5	7.9	7.1	5.8	7.1	7.4	6.8	7.5	9.3	7.5	7.7	7.5	8.2	7.0	7.1	7.5	7.2	7.2	10	7.2	10.0	8.3	11.0	6.5	8.0
Total Purged	gal	306	522	870	297	280	284	288	300	280	295	298	297	291	286	259	287	268	280	267	305	300	321	327	293	314
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	4.30	3.80	3.82	4.50	5.51	5.50	5.40	5.77	5.65	6.50	5.98	4.50	5.68	6.08	5.55
Temperature	deg C	8.8	13.1	11.9	14.2	14.1	12.7	12.5	12.6	10.6	11.3	10.9	10.4	11.2	11.9	11.8	11.6	11.5	11.7	12.0	12.5	11.7	11.47	11.81	12.88	11.55
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	7.49	7.35	7.34	7.44	7.39	7.37	7.32	7.37
Specific Conductance	µS/cm	1224	1199	1284	1246	1226	1143	1176	1223	1280	1305	1392	1415	1351	1159	1162	1241	1278	1218	1289	1204	1235	1308	1253	1232	1277
Oxygen Reduction Potential	mV	-123.1	-162.2	-142.5	-185.4	-156.6	-196.8	-140.6	-148.9	-152.9	-141.0	-143.6	-125.6	-132.2	-201	-176.9	-213.20	-185.3	-219.3	-251.6	-273.0	-232.0	-194.0	-192.0	-159.9	-193.0
Lab Analytical Results:																										
Hardness as CaCO3	mg/L	230			306			216		271				391	277	215	280	274	275	369	287	252	350	303	263	290
pH (Lab)	SU	7.73			7.57			7.58		7.59				7.46	7.74	7.66	7.56	7.75	7.95	7.48	7.50	7.77	7.56	7.23	7.35	7.12
Total Dissolved Solids (Lab)	mg/L	760			745			735		725				775	725	705	790	745	770	835	730	735	860	780	705	830
Calcium	mg/L	44.0			59.7			42.4		51.7				75.7	54.0	41.6	55.6	53.4	53.8	71.5	56.7	49.1	67.8	58.2	51.5	56.5
Magnesium	mg/L	29.1			38.2			26.7		34.5				49.1	34.6	27.1	34.4	34.2	34.1	46.4	35.4	31.4	43.8	38.3	32.7	36.1
Sodium	mg/L	199			196			210		189				167	189	203	195	183	191	154	212	196	172	167	198	183
Potassium	mg/L	3.00			3.15			3.01		3.01				3.30	3.00	3.09	2.99	3.09	3.03	3.16	3.15	3.01	3.32	3.01	3.01	<5
Alkalinity, Total	mg/L	610			660			620		615				640	585	670	625	620	595	630	640	610	615	615	590	600
Alkalinity, Bicarbonate	mg/L	570			660			620		615				640	585	670	625	620	595	630	640	610	615	615	590	600
Alkalinity, Carbonate	mg/L	40.0			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Chloride	mg/L	4.33			6.12			4.30		4.44				4.53	4.32	6.21	4.39	4.30	4.35	4.34	4.23	4.35	4.59	4.36	6.19	4.76
Fluoride	mg/L	0.347			<0.5			0.353		0.337				0.337	0.362	<0.500	0.358	0.354	0.335	0.390	0.359	0.355	0.349	0.335	<0.500	0.348
Sulfate as SO4	mg/L	90.1			108			83.8		117				156	97.4	74.0	101	106	97.2	147	89.9	91.4	131	112	92.1	104
Total Organic Carbon (TOC)	mg/L	2.54			3.3			2.80		3.18				3.84	5.82	2.84	3.33	3.37	3.5	3.94	3.35	3.31	3.70	3.53	3.14	3.29
Nitrate/Nitrite as N	mg/L	<0.02			<0.02			<0.02		<0.200				<0.020	<0.400	<0.400	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.02
Ammonia as N ^	mg/L																								0.931	
Ortho-Phosphate as P ^	mg/L																								0.0590	
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.25
Arsenic	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				0.0009	<0.0005	<0.0005	<0.0005	0.0005	0.0005	0.0005	<0.0005	0.0005	0.0005	<0.0005	<0.0010	<0.0005
Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001
Copper	mg/L	0.0035			0.003			0.0021		0.0041				0.0020	0.0020	0.0030	0.0027	0.0035	0.003	0.0022	0.0025	0.0042	0.0015	0.0019	0.0012	0.0017
Iron	mg/L	1.20			1.51			0.946		1.64				2.01	1.34	0.101	1.44	1.44	1.39	1.98	1.52	1.26	1.74	1.58	1.41	1.49
Lead	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
Manganese	mg/L	0.267			0.344			0.221		0.312				0.491	0.315	0.202	0.311	0.307	0.306	0.498	0.286	0.355	0.439	0.428	0.354	0.366
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	<0.0005			<0.0005			<0.0005		0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	0.0005	<0.0005	<0.0005	<0.0010	<0.0005
Selenium	mg/L	<0.001			<0.001			<0.001		<0.0010				0.0245	<0.0010	<0.0010	<0.0010	<0.0010	0.0171	0.0120	0.0022	0.0032	0.0024	<0.0010	<0.0020	<0.001
Silica (Si02)	mg/L	13.8			15.2			14.8		12.9				14.2	14.9	14.3	14.7	13.4	14.6	13.8	13.7	13.5	13.1	13.1	14.3	13.1
Silicon	mg/L	6.45			7.12			6.94		6.05				6.64	6.94	6.68	6.86	6.27	6.81	6.45	6.41	6.3	6.13	6.11	6.68	6.13
Uranium	mg/L	<0.0001			0.0021			<0.0001		0.0002				0.0002	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	<0.0002	<0.0005
Zinc	mg/L	<0.001			<0.001			0.0023		0.0301				<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0040	<0.002
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	one-time analysis
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					2019				2020
Quarter		Q1	Q2			Q3			Q4			Q1		Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	8	11	2	5	8	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	5/7	8/8	8/9	11/7	2/27	5/22	8/16	11/13	2/6
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	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	1	0.1	1	0.5	0.3	0.5	0.3	0.5	0.3
Total Purged	*gal*	7	6	7	7	6	6	6	6	6	6	8	8	6	8	8	6	6	11	2	6.5	7.5	13	10	9	8	12
Depth to Water	*ft bgs*	3.69	3.17	4.25	1.42	4.17	4.17	5.50	6.4	4.7	5	3.95	2.74	6.35	0.95	4.85	5.68	6.68	7.4	6.65	6.59	5.17	5.85	0.92	3.60	5.20	5.60
Temperature	*deg C*	6.30	10.10	13.50	18.40	19.80	14.00	14.10	13.30	10.40	12.4	7.0	4.40	8.40	17.10	12.10	11.70	9.80	8.90	14.0	11.10	11.90	9.14	8.14	10.54	11.48	10.41
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	7.48	7.84	7.20	7.15	7.41	7.34	7.23	7.19	7.32
Specific Conductance	*µS/cm*	899	867	804	600	369	815	877	881	904	872	908	1193	921	633	852	879	887	847	828	895	955	960	1091	1051	1083	1083
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	-34	-75.6	-127	-91.9	48.4	-57.8	-30.1	-5.48	25.27
Lab Analytical Results:																											
Hardness as CaCO3	*mg/L*	444			314			452		432				485	352	378	449	412	415	422	415	465	488	537	513	603	540
pH (Lab)	*SU*	7.63			7.66			7.48		7.55				7.72	7.6	7.51	7.51	7.62	7.6	7.61	7.45	7.50	7.5	7.4	7.04	7.12	7.20
Total Dissolved Solids (Lab)	*mg/L*	685			470			525		495				635	415	525	540	515	545	545	575	550	575	695	655	690	695
Calcium	*mg/L*	72.2			54.9			75.9		72.7				81.0	60.9	64.8	78.0	70.1	70.2	72.7	70.4	78.7	81.3	87.1	83.3	99.4	87.2
Magnesium	*mg/L*	63.9			43.1			63.8		60.8				68.7	48.5	52.6	61.8	57.4	58.2	58.4	58.2	65.2	69.2	77.6	74.0	86.3	78.2
Sodium	*mg/L*	22.2			16.5			19.8		20.7				21.8	16.1	17.0	20.1	19.4	19.2	19.6	19.1	21.3	22.1	23.4	21.4	25.5	23.3
Potassium	*mg/L*	2.04			2.1			2.16		2.05				1.94	2.22	1.64	2.19	1.76	1.68	2.00	1.82	2.08	1.97	1.94	2.06	2.40	2.04
Alkalinity, Total	*mg/L*	342			280			380		380				375	285	395	375	333	350	380	328	340	395	460	365	348	324
Alkalinity, Bicarbonate	*mg/L*	338			280			380		380				375	285	395	375	333	350	380	328	340	395	460	365	348	324
Alkalinity, Carbonate	*mg/L*	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	*mg/L*	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<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	27.2	34.5	34.1	39.3	40.1	42.9	45.2	47.2	48.9
Fluoride	*mg/L*	0.230			0.298			0.272		0.256				0.228	0.313	0.263	0.246	0.244	0.224	0.259	0.281	0.263	0.244	0.246	0.221	<0.500	<0.500
Sulfate as SO4	*mg/L*	129			70			114		117				153	75.2	98.4	94.7	104	102	112	111	137	138	196	189	182	199
Total Organic Carbon (TOC)	*mg/L*	3.34			14			2.64		3.4				3.52	3.56	2.61	2.25	2.10	2.02	2.06	1.93	2.08	1.87	2.69	2.28	1.99	1.80
Nitrate/Nitrite as N	*mg/L*	0.042			<0.02			<0.02		0.089				<0.020	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	*mg/L*																									<0.100	
Ortho-Phosphate as P ^	*mg/L*																									<0.0500	
Aluminum	*mg/L*	0.156			<0.05			<0.05		<0.050				<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<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	0.0009	0.0012	0.0012	0.0010	0.0012	0.0011	0.0012	0.0012	0.0011
Cadmium	*mg/L*	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<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	0.0002	0.0006	0.0004	0.0003	0.001	0.0016	0.0003	0.0002	<0.0005
Iron	*mg/L*	0.081			0.085			0.118		<0.050				0.213	<0.05	<0.050	0.074	0.060	0.073	0.089	0.163	0.082	0.062	0.116	0.105	0.119	0.094
Lead	*mg/L*	<0.0005			<0.0005			<0.0005		0.0078				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<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	0.306	0.349	0.375	0.320	0.423	0.504	0.404	0.427	0.454
Mercury	*mg/L*	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	*mg/L*	0.0014			0.0022			0.0024		0.0025				0.0021	0.0025	0.0021	0.0020	0.0024	0.0022	0.0024	0.0029	0.0024	0.0029	0.0026	0.0019	0.0024	0.0021
Selenium	*mg/L*	<0.001			<0.001			<0.001		0.0011				0.0045	<0.001	<0.0010	<0.0010	0.0012	<0.001	0.0012	0.0015	0.0013	0.0021	0.001	0.0011	0.0011	<0.0010
Silica (Si02)	*mg/L*	11.6			14.7			12.8		11.9				10.9	15.5	13.0	13.3	11.1	11.5	11.4	11.5	11.0	11.2	10.5	11.6	12.8	11.2
Silicon	*mg/L*	5.42			6.89			5.97		5.55				5.12	7.23	6.08	6.20	5.19	5.39	5.34	5.38	5.15	5.26	4.93	5.44	5.99	5.22
Uranium	*mg/L*	0.0013			0.0007			0.0015		0.0016				0.0014	0.0008	0.0013	0.0013	0.0013	0.0013	0.0013	0.0015	0.0014	0.0019	0.0016	0.0012	0.0015	0.0016
Zinc	*mg/L*	0.0034			<0.001			0.0010		0.0311				<0.0020	<0.002	<0.0040	<0.0020	0.0053	0.0022	0.0028	<0.0020	<0.0020	0.0025	<0.002	<0.0020	<0.0020	<0.0020
Radium 226	*pCi/L*	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	*pCi/L*	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	one-time analysis
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				2019				2020
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	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	5	8	11	2	5	8	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	5/16	8/9	11/8	2/28	5/23	8/19	11/11	2/17
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																										
Purge Flow Rate	gpm	150.0	38.5	23.4	18.6	19.9	17.3	15.8	17.0	10.6	18.1	39.5	39.6	39.6	NM	18.3	23.5	11.9	12.0	18.5	12.3	28.0	38.0	18.0	17.0	35.0
Total Purged	gal	5850	4228	4229	3686	2844	2979	2637	2724	2992	2916	3595	3580	3560	2980	2712	2423	2700	2890	2783	2747	3017	3200	3010	3058	3825
Depth to Water	ft bgs	0.35	0.00	0.85	2.15	2.99	2.60	3.32	6.85	1.90	1.95	0.30	0.00	0.00	2.05	3.40	3.40	3.35	3.93	4.13	3.78	2.40	0.05	2.47	2.68	0.43
Temperature	deg C	6.7	8.8	10.4	10.7	11.5	12.1	11.5	11.0	9.1	8.8	7.6	7.2	7.5	10.3	11.3	9.7	8.0	10.2	11.7	10.4	8.0	9.3	10.7	9.9	6.7
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	7.13	7.04	7.07	7.17	7.08	7.09	7.09	7.01
Specific Conductance	µS/cm	2043	1633	1805	1768	1478	1602	1941	1937	2014	2036	2262	2276	2085	1869	2074	2190	2232	2144	2072	2167	2170	2151	1964	1970	2171
Oxygen Reduction Potential	mV	105.6	17.9	20.1	38.5	26.9	20.0	28.6	21.6	13.7	20.9	3.2	18.3	6.0	13.3	19.5	19.2	14.3	29.9	-52.7	-18.8	22.7	-10.6	-23.7	51.9	49.33
Lab Analytical Results:																										
Hardness as CaCO3	mg/L	990			1050			1030		963				1040	1060	1140	1150	1090	1160	1130	1180	1150	1080	1080	1060	982
pH (Lab)	SU	7.22			7.34			7.29		7.36				7.22	7.46	7.30	7.33	7.70	8.35	7.22	7.42	7.38	7.35	7.11	7.09	7.12
Total Dissolved Solids (Lab)	mg/L	1580			1480			1520		1520				1480	1510	1680	1740	1740	1740	1750	1720	1710	1670	1520	1480	1600
Calcium	mg/L	197			208			206		186				205	211	219	226	211	216	221	230	226	214	214	208	191
Magnesium	mg/L	121			128			126		121				128	129	143	142	136	150	139	147	143	132	132	132	123
Sodium	mg/L	95.9			75.2			80.7		82.4				110	87.5	80.7	83.4	80.4	82.3	79.1	81.2	83.2	89.4	72.4	67.3	68.1
Potassium	mg/L	4.64			4.56			4.90		4.42				4.61	4.79	4.62	<5.00	4.73	4.98	5.01	5.00	5.01	4.77	4.92	4.85	4.33
Alkalinity, Total	mg/L	460			500			470		450				410	445	510	475	445	435	463	505	515	469	474	460	460
Alkalinity, Bicarbonate	mg/L	440			500			470		450				410	445	510	475	445	435	463	505	515	469	474	460	460
Alkalinity, Carbonate	mg/L	20.0			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<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	60	57.2	57.5	67.2	67.8	49.9	48.2	57.7
Fluoride	mg/L	0.285			<0.5			<0.5		0.3				<0.500	0.332	<0.500	<0.500	<0.500	<0.500	<0.500	0.298	0.324	0.306	<0.500	<0.500	<0.500
Sulfate as SO4	mg/L	671			595			656		676				731	702	779	772	832	714	733	741	801	709	627	627	711
Total Organic Carbon (TOC)	mg/L	3.54			4.1			3.15		3.02				3.40	3.54	3.34	3.26	3.37	3.5	3.51	3.63	3.82	4.87	4.27	3.30	4.22
Nitrate/Nitrite as N	mg/L	0.456			0.891			1.08		0.965				0.492	1.07	1.80	1.94	2.26	2.48	2.26	1.99	1.95	0.651	0.896	1.31	1.05
Ammonia as N ^	mg/L																								<0.100	
Ortho-Phosphate as P ^	mg/L																								<0.0500	
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.1	<0.050	<0.250	<0.100	<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Arsenic	mg/L	<0.0025			<0.0025			0.0005		0.0008				0.0009	0.0006	0.0005	0.0029	0.0009	0.0006	<0.0025	<0.001	<0.0010	0.0006	<0.0010	<0.0010	<0.0010
Cadmium	mg/L	<0.0005			<0.0005			<0.0005		<0.0001				<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002
Copper	mg/L	0.0018			0.0024			0.0020		0.0038				0.0023	0.0019	0.0025	0.0097	0.0020	0.0019	0.0018	0.0030	0.002	0.0021	0.0021	0.0012	0.0020
Iron	mg/L	0.100			<0.05			0.060		0.136				0.286	0.161	<0.050	<0.250	0.132	0.151	0.125	0.121	0.151	0.379	0.287	0.209	0.285
Lead	mg/L	<0.0025			<0.0025			<0.0025		<0.0005				<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.001	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010
Manganese	mg/L	0.673			0.857			0.756		0.608				0.440	0.797	0.881	4.50	0.845	0.997	1.37	1.08	0.937	0.357	0.902	0.892	0.419
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<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	0.002	0.002	0.0019	0.0017	0.0014	0.0020	0.0017	0.0013
Selenium	mg/L	<0.005			<0.005			0.0013		0.0023				0.0027	0.0019	0.0016	0.0087	0.0027	0.0025	0.0025	<0.002	0.0025	0.0016	<0.0020	<0.0020	<0.0020
Silica (Si02)	mg/L	13.9			16.1			16.4		14.3				14.7	15.5	16.1	13.4	14.1	15.9	16.2	15.9	14.1	13.2	15.4	14.9	12.2
Silicon	mg/L	6.51			7.53			7.67		6.69				6.85	7.22	7.54	6.29	6.58	7.42	7.58	7.44	6.6	6.19	7.20	6.96	5.72
Uranium	mg/L	0.0029			0.0021			0.0023		0.0026				0.0024	0.0021	0.0021	0.0110	0.0025	0.0024	0.0024	0.0032	0.0036	0.0044	0.0029	0.0023	0.0039
Zinc	mg/L	0.0156			0.0364			0.0301		0.0269				0.0194	0.026	0.0208	0.0855	0.0216	0.0225	0.0214	0.0172	0.0175	0.0128	0.0138	0.0108	0.0122
Radium 226	pCi/L	0.7 +/- 0.1			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	one-time analysis
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
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NM	not measured (field)
NA	not analyzed (lab)

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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.*

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GCC Energy Hydrologic Monitoring Data

MW-HGA-4

Year		2016	2017												2018					2019					2020
Quarter		Q4	Q1			Q2			Q3			Q4			Q1		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	5	8	11	2	5	8	11	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	5/15	8/9	11/8	2/28	5/23	8/16	11/13	2/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																								
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.4	NM	0.1	1.5	2.0	1.0	1.1	1.0	1.0	0.3	1.0
Total Purged	gal	21	21	21	21	21	21	19.5	20	20	21	21	21	24	19	21	21	19	21	24	22	21	21	22
Depth to Water	ft bgs	0.73	0.57	0.60	0.83	0.94	2.06	2.53	3.25	2.65	3.31	3.31	1.76	4.31	1.37	0.55	2.60	3.98	1.90	0.49	0.42	1.95	1.15	0.38
Temperature	deg C	7.3	4.8	6.4	8.1	7.2	9.9	8.4	8.6	8.8	9.0	9.2	9.0	9.3	8.8	7.8	8.1	8.7	8.8	7.6	7.7	8.5	8.8	7.9
pH	SU	7.29	7.36	7.40	7.41	7.33	7.36	7.40	7.36	7.35	7.33	7.31	7.27	7.27	7.33	7.30	7.18	7.27	7.05	7.15	7.18	7.16	7.09	7.12
Specific Conductance	µS/cm	1284	1257	1201	1155	1153	1113	1055	1099	1050	1124	1072	1171	1160	1141	1154	1098	1057	1167	1183	1102	1083	1127	1122
Oxygen Reduction Potential	mV	-72.1	-86.6	-105.1	-104.4	-74.5	-91.3	-134.7	-137.6	-131.0	-139.5	-77.3	-157.9	-70.1	-96.6	-157.3	-130.9	-230.8	-190.9	-128.3	-140.7	-130.9	-104.9	-107.8
Lab Analytical Results:																								
Hardness as CaCO3	mg/L	724			611			616			522		595			561	555	524	625	613	563	544	624	563
pH (Lab)	SU	7.30			7.17			7.31			7.25		7.21			7.58	8.15	7.33	7.12	7.2	8.17	6.95	6.88	6.78
Total Dissolved Solids (Lab)	mg/L	855			710			715			750		775			740	730	695	770	795	695	695	715	729
Calcium	mg/L	147			118			121			102		118			110	108	102	124	122	110	106	123	112
Magnesium	mg/L	86.7			76.7			76.6			64.9		72.8			69.3	69	65.4	76.5	74.7	70.3	67.9	76.8	68.9
Sodium	mg/L	19.5			27.4			28.6			24.9		27.2			26.5	30.4	29.9	27.6	27	28.6	28.3	31.9	27.9
Potassium	mg/L	2.02			2.13			2.11			1.75		2.21			2.17	2.22	2.33	2.13	2.16	2.00	2.10	2.38	2.05
Alkalinity, Total	mg/L	545			465			415			465		475			460	425	410	460	455	445	455	432	435
Alkalinity, Bicarbonate	mg/L	545			465			415			465		475			460	425	410	460	455	445	455	432	435
Alkalinity, Carbonate	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Alkalinity, Hydroxide	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10
Chloride	mg/L	10.9			8.75			7.95			8.96		8.74			8.43	7.57	6.47	9.40	10.5	8.06	8.44	9.46	8.39
Fluoride	mg/L	0.577			0.485			0.506			0.517		0.495			0.496	0.459	0.482	0.487	0.484	0.456	0.443	0.520	0.447
Sulfate as SO4	mg/L	240			229			192			205		204			222	190	169	201	221	186	212	190	193
Total Organic Carbon (TOC)	mg/L	NA			4.54			4.35			4.69		4.79			4.56	4.57	4.30	4.72	4.82	4.45	4.58	4.35	4.8
Nitrate/Nitrite as N	mg/L	<0.020			<0.020			<0.02			<0.020		<0.100			<0.020	<0.020	<0.020	<0.020	0.173	<0.020	<0.020	<0.020	<0.02
Ammonia as N ^	mg/L																						0.528	
Ortho-Phosphate as P ^	mg/L																						<0.0500	
Aluminum	mg/L	0.423			<0.050			<0.05			<0.050		<0.050			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
Arsenic	mg/L	0.0030			0.0029			0.0028			<0.0005		0.0035			0.0037	0.0034	0.0036	0.0032	0.0031	0.0029	0.0028	0.0033	0.0022
Cadmium	mg/L	<0.0001			<0.0001			<0.0001			<0.0001		<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<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	0.0008	0.0004	0.0008	<0.0010	0.0003	0.0004	0.0002	0.0005
Iron	mg/L	3.71			7.29			7.32			0.378		7.84			7.60	7.92	8.55	8.44	8.35	7.98	8.38	9.76	8.59
Lead	mg/L	<0.0005			<0.0005			<0.0005			<0.0005		<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<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	1.81	1.58	2.13	2.56	2.12	1.84	1.78	1.77
Mercury	mg/L	ND			<0.0002			<0.0002			<0.0002		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0013			0.0024			0.0027			0.0028		0.0027			0.0030	0.0031	0.0038	0.0029	0.0026	0.0027	0.0029	0.0031	0.0025
Selenium	mg/L	<0.001			0.0030			<0.001			<0.0010		<0.0010			<0.0010	0.002	0.0016	<0.001	0.001	<0.0010	<0.0010	<0.0010	<0.001
Silica (Si02)	mg/L	22.3			16.8			18			16.5		17.9			15.8	16.4	15.7	17.3	15.9	14.9	14.9	16.5	15.2
Silicon	mg/L	10.4			7.86			8.41			7.72		8.35			7.37	7.67	7.34	8.10	7.46	6.96	6.96	7.69	7.09
Uranium	mg/L	0.0010			0.0004			0.0004			0.0004		0.0004			0.0004	0.0004	0.0003	0.0005	0.0005	0.0004	0.0004	0.0003	<0.0005
Zinc	mg/L	0.0039			0.0046			<0.002			<0.0040		<0.0020			<0.002	<0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.002

Notes & Definitions:

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gpm	gallons per minute
deg C	degrees Celsius
SU	standard pH units
µS/cm	microsiemens per centimeter
mV	millivolts
mg/L	milligram per liter
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NM	not measured (field)
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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									2019				2020	
Quarter		Q2	Q3				Q4			Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4	Q1	
Month		6	7	8	9	9	10	11	12	1	2	3	4	5	6	7	8	11	2	5	8	11	2	
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9	3/22	4/11	5/10	--	7/23	8/7	11/1	2/20	5/30	8/14	11/5	2/12	
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																								
Purge Flow Rate	*gpm*	NM	NM*	NM*	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	***	0.1	0.1	0.1	0.12	0.1	0.1	0.3	0.25	
Total Purged	*gal*	12.8	NM*	NM*	NM	NM	2	2	1	1.5	2	1.5	1	1.3		1.5	1.5	1.6	1.0	1.5	1.12	1.5	1.0	
Depth to Water	*ft bgs*	215.42	NM*	215.92	215.54	216.33	216.31	216.47	216.58	216.21	216.47	216.47	216.54	216.54		216.63	216.63	216.65	216.55	216.43	216.33	216.13	216.05	
Temperature	*deg C*	17.7	NM*	NM*	10.7	9.7	9.1	9.1	8.7	9.5	9.0	8.7	9.6	9.2		9.9	10.0	8.9	7.5	10.3	9.6	9.7	8.1	
pH	*SU*	7.78	NM*	NM*	7.35	7.38	7.29	7.28	7.25	7.19	7.37	7.28	6.8	6.97		6.99	7.05	7.01	7.13	6.96	7.05	7.00	7.13	
Specific Conductance	*µS/cm*	1362	NM*	NM*	1555	1563	1616	1650	1693	1700	1723	1735	1647	1761		1734	1815	1781	1776	1681	1757	1737	1797	
Oxygen Reduction Potential	*mV*	-34.6	NM*	NM*	-54.7	-46.5	-50	-48.3	-49.6	-44.6	-52.8	-37.5	142.4	0.4		-26.4	-33.2	101.4	-11.8	25.4	-18.71	3.59	12.7	
Lab Analytical Results:																								
Hardness as CaCO3	*mg/L*	124				133		130			159			156			160	174	159	153	148	150	159	
pH (Lab)	*SU*	7.74				7.35		7.33			7.22			7.45			7.17	7.27	7.13	7.03	7.14	6.92	7.19	
Total Dissolved Solids (Lab)	*mg/L*	975				1080		1120			1100			1150			1040	1130	1160	1150	1150	1140	1168	
Calcium	*mg/L*	24.7				25.8		24.9			30.5			29.7			30.9	34.0	31.2	29.8	27.9	29.0	30.9	
Magnesium	*mg/L*	15.1				16.7		16.6			20.1			19.9			20.1	21.5	19.7	19.1	18.9	18.8	19.9	
Sodium	*mg/L*	324				329		325			348			327			333	358	357	319	348	333	337	
Potassium	*mg/L*	1.98				2.02		<5.00			<5.00			2.12			2.23	2.47	2.34	2.18	2.29	2.12	2.13	
Alkalinity, Total	*mg/L*	375				450		380			415			353			385	395	375	355	368	420	360	
Alkalinity, Bicarbonate	*mg/L*	375				450		380			415			353			385	395	375	355	368	420	360	
Alkalinity, Carbonate	*mg/L*	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10	<10.0	<10	<10.0	<10.0	<10.0	
Alkalinity, Hydroxide	*mg/L*	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10	<10.0	<10	<10.0	<10.0	<10.0	
Chloride	*mg/L*	2.75				2.16		<5.00			2.19			<5			2.12	2.20	2.74	2.33	2.72	2.66	2.74	
Fluoride	*mg/L*	0.268				0.245		<0.500			0.240			<0.5			0.260	0.240	0.266	0.242	0.252	0.246	0.234	
Sulfate as SO4	*mg/L*	427				432		511			518			522			515	511	508	494	537	495	506	
Total Organic Carbon (TOC)	*mg/L*	5.03				1.36		1.58			1.51			1.54			1.60	1.75	1.61	1.67	1.59	1.50	1.55	
Nitrate/Nitrite as N	*mg/L*	<0.200				<0.400		<0.100			<0.020			<0.02			<0.02	0.028	<0.020	<0.02	<0.020	0.020	<0.020	
Ammonia as N ^	*mg/L*																					0.387		
Ortho-Phosphate as P ^	*mg/L*																					<0.0500		
Aluminum	*mg/L*	<0.050				<0.050		<0.250			<0.250			<0.05			<0.05	<0.1	<0.100	<0.05	<0.050	<0.050	<0.100	
Arsenic	*mg/L*	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	
Cadmium	*mg/L*	<0.0001				<0.0001		<0.0005			<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	
Copper	*mg/L*	0.0043				0.0057		0.0045			0.0066			0.0041			0.0048	0.0048	0.0075	0.0064	0.0040	0.0147	0.0034	
Iron	*mg/L*	0.128				0.367		<0.250			0.590			0.614			0.644	0.647	0.581	0.589	0.613	0.510	0.614	
Lead	*mg/L*	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	
Manganese	*mg/L*	0.0260				0.0218		0.0259			0.0279			0.026			0.0242	0.0282	0.0281	0.0235	0.0270	0.0248	0.0303	
Mercury	*mg/L*	<0.0002				<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
Molybdenum	*mg/L*	0.0007				0.0010		<0.0025			<0.0025			0.0009			0.0008	0.0007	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	
Selenium	*mg/L*	<0.0010				<0.0010		<0.0050			<0.0050			<0.001			<0.001	<0.001	<0.0020	<0.001	<0.0010	<0.0010	<0.0020	
Silica (Si02)	*mg/L*	12.3				11.9		8.27			11.2			11.2			11.4	12.0	11.1	11.2	11.6	11.0	11.1	
Silicon	*mg/L*	5.74				5.56		3.87			5.24			5.25			5.31	5.62	5.2	5.23	5.43	5.13	5.19	
Uranium	*mg/L*	0.0004				0.0002		<0.0005			<0.0005			0.0003			0.0002	0.0003	0.0002	0.0001	0.0001	0.0001	<0.0010	
Zinc	*mg/L*	0.0270				0.0088		<0.0100			<0.0100			0.0051			<0.0100	<0.002	<0.0040	0.0022	<0.0040	0.0020	<0.0040	

Notes & Definitions:

*** *La Plata County stage 3 fire restrictions prevented sampling activity*

^ **one-time analysis**

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								2019				2020
Quarter		Q2	Q3			Q4			Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4	Q1
Month		6	7	8	9	10	11	12	**1**	2	3	4	5	6	7	8	11	2	5	8	11	2
Sample Date		6/7	7/18	8/23	9/26	10/26	11/16	12/5	**1/2**	2/9	3/22	4/11	5/10	--	7/23	8/7	11/1	2/20	5/30	8/14	11/5	2/12
Lab Analysis (Y/N)		Y	N	N	N	N	N	N	**N**	N	N	N	N	N	N	Y	N	N	N	N	N	N
Field Parameters:																						
Purge Flow Rate	***gpm***	NM	NM*	NM	NM	dry	dry	dry	dry	dry	dry	dry	dry	***	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	***gal***	19.5	NM*	<0.5	NM																	
Depth to Water	***ft bgs***	259.99	NM*	258.29	258.34																	
Temperature	***deg C***	15.8	NM*	11.8	21.7																	
pH	***SU***	8	NM*	7.94	7.86																	
Specific Conductance	***µS/cm***	2032	NM*	2137	2119																	
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:

*** ***La Plata County stage 3 fire restrictions prevented sampling activity***

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									2019				2020
Quarter		Q2	Q3				Q4			Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4	Q1
Month		6	7	8	9	9	10	11	12	1	2	3	4	5	6	7	8	11	2	5	8	11	2
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9	3/22	4/11	5/10	--	7/23	8/7	11/18	2/20	5/30	8/14	11/5	2/12
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																							
Purge Flow Rate	gpm	NM	NM*	NM*	NM	NM	NM	NM	NM	MM	0.1	NM	0.1	0.1	***	0.05	0.1	0.1	0.06	0.02	0.03	0.01	0.01
Total Purged	gal	5	NM*	NM*	NM	NM	1.00	1.00	1.00	1	1	1	1	1.25		1	1	1.10	1.00	1.10	1.00	1.00	1.00
Depth to Water	ft bgs	216.5	NM*	216.91	216.95	216.59	216.52	216.48	216.52	216.38	216.38	216.37	216.35	216.41		216.41	216.05	216.04	216.41	216.20	216.02	216.04	216.12
Temperature	deg C	16.0	NM*	NM*	NM	12.9	11.7	10.6	7.0	9.7	9.6	6.7	9.2	10.5		20.0	14.1	9.7	5.4	9.8	10.4	11.1	6.4
pH	SU	7.52	NM*	NM*	NM	7.17	7.16	7.15	7.17	7.11	7.19	7.32	7.03	7.05		6.91	6.97	6.93	7.09	6.80	6.65	6.70	6.79
Specific Conductance	µS/cm	2446	NM*	NM*	NM	2725	2738	2739	2778	2778	2738	2751	2700	2749		2693	2675	2751	2621	3139	3172	3080	3005
Oxygen Reduction Potential	mV	74.3	NM*	NM*	NM	77.4	31.7	23.9	13.0	6.2	-4.3	-29.6	-15.3	-42.3		-41.8	-32.5	-110.0	-23.4	27.6	10.5	51.0	50.7
Lab Analytical Results:																							
Hardness as CaCO3	mg/L	498				1290		1180			1190			1130			1120	1180	1010	1820	1840	1700	1600
pH (Lab)	SU	8.35				7.36		7.34			7.22			7.2			7.20	7.02	7.24	6.93	6.67	6.63	6.80
Total Dissolved Solids (Lab)	mg/L	2020				2440		2360			2360			2340			2170	2200	1960	2880	2890	2750	1954
Calcium	mg/L	96.0				234		216			219			203			203	219	188	340	342	318	301
Magnesium	mg/L	62.8				172		155			156			150			148	154	131	237	240	219	207
Sodium	mg/L	506				242		253			260			239			239	255	265	146	119	119	143
Potassium	mg/L	11.4				3.81		<5.00			<5.00			3.07			3.04	2.65	3.13	<5	<5.00	<5.00	3.05
Alkalinity, Total	mg/L	530				700		540			570			580			560	410	525	530	518	505	515
Alkalinity, Bicarbonate	mg/L	530				700		540			570			580			560	410	525	530	518	505	515
Alkalinity, Carbonate	mg/L	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10.0	<10.0	<10	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10.0	<10.0	<10	<10.0	<10.0	<10.0
Chloride	mg/L	24.2				6.97		8.03			7.78			7.75			5.97	6.22	6.36	10.2	9.31	8.78	8.54
Fluoride	mg/L	1.59				0.864		0.955			1.03			0.96			0.888	0.924	0.975	0.67	0.525	0.565	0.615
Sulfate as SO4	mg/L	1090				1350		1230			1160			1210			1090	1080	1070	1630	1730	1520	1400
Total Organic Carbon (TOC)	mg/L	4.56				2.84		2.12			2.21			2.2			2.35	2.37	2.32	2.62	2.52	2.30	2.30
Nitrate/Nitrite as N	mg/L	<2.00				<0.400		<0.100			<0.020			<0.02			0.036	<0.02	<0.020	<0.02	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																					0.140	
Ortho-Phosphate as P ^	mg/L																					<0.100	
Aluminum	mg/L	<0.050				<0.050		<0.250			<0.250			<0.05			<0.05	<0.10	<0.100	<0.25	<0.250	<0.250	<0.150
Arsenic	mg/L	0.0029				0.0016		<0.0025			<0.0025			0.0051			0.0052	0.0035	0.0038	0.0048	0.0034	<0.0025	<0.0025
Cadmium	mg/L	<0.0001				<0.0001		<0.0005			<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0002	<0.0005	<0.0005
Copper	mg/L	0.0088				0.0085		0.0036			0.0052			0.003			0.0049	0.0033	0.0054	0.0057	0.0014	0.0096	<0.0025
Iron	mg/L	<0.050				<0.050		<0.250			<0.250			0.643			1.01	1.12	0.988	2.3	0.819	0.543	0.570
Lead	mg/L	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025	<0.0025
Manganese	mg/L	0.0744				0.0853		0.0959			0.0989			0.153			0.140	0.106	0.0807	0.075	0.0562	0.0512	0.0537
Mercury	mg/L	<0.0002				<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.0164				0.0049		<0.0025			<0.0025			0.0006			<0.0025	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025	<0.0025
Selenium	mg/L	0.0136				0.0012		<0.0050			<0.0050			<0.001			<0.0050	0.0011	<0.0020	0.0016	0.0023	<0.0050	<0.0050
Silica (Si02)	mg/L	10.6				16.6		13.2			14.8			15.2			14.7	14.5	14	16.6	17.3	16.4	15.7
Silicon	mg/L	4.94				7.77		6.16			6.94			7.09			6.87	6.78	6.55	7.75	8.07	7.65	7.35
Uranium	mg/L	0.0500				0.0044		0.0028			0.0024			0.0025			0.0022	0.0021	0.0016	0.002	0.0025	0.0023	<0.0025
Zinc	mg/L	0.0293				0.0294		<0.0100			<0.0100			0.0062			<0.0100	0.0055	<0.0040	0.0085	0.0077	<0.0100	<0.0100

Notes & Definitions:

*** La Plata County stage 3 fire restrictions prevented sampling activity

^ one-time analysis

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							2019				2020
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	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	dry	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							2019				2020
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	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	dry	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**
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NM	**not measured (field)**
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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-C																				
Year		2017							2018							2019				2020
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	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	dry	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**
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NM	**not measured (field)**
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GCC Energy Hydrologic Monitoring Data

MW-3-A																					
Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/27	6/30	7/18	8/24	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/14	11/12	2/4
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.1
Total Purged	gal	30	2.0	NM	NM	NM	1.0	1.0	1.0	1.3	1.5	1.5	1	1.25	1	1.1	1.5	1.3	1.3	1.5	1.1
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	297.86	297.76	298.17	298.55	298.27	297.85	296.79	297.27	297.33	296.47
Temperature	deg C	11.7	13.2	19.5	12.6	12.3	12.5	11.7	12.0	11.8	11.7	12.2	11.9	13.5	13.5	11.9	11.8	12.1	NM	13.1	11.5
pH	SU	8.82	8.75	8.56	8.67	8.72	8.64	8.61	8.57	8.54	8.52	8.61	8.21	8.38	8.30	8.31	8.28	8.31	8.13	8.51	8.11
Specific Conductance	µS/cm	2535	2446	2115	2524	2470	2430	2483	2494	2528	2506	2458	2415	2253	2336	2391	2355	2309	NM	2204	2211
Oxygen Reduction Potential	mV	-269.0	-101.5	-55.3	-87.4	-142.3	-124.5	-125.6	-146.8	-120.3	-125.2	-181.6	-135.8	-138.2	-155.8	-164.6	-145.9	-132.3	-138.6	-120.1	-65.7
Lab Analytical Results:																					
Hardness as CaCO3	mg/L	7.53	12.6			12.6		10.4			11.5			11.2	12.6	14.1	11.9	10.7	10.4	11.1	10.8
pH (Lab)	SU	8.63	8.69			8.53		8.29			8.45			8.36	8.37	8.24	8.28	8.29	8.27	8.39	8.09
Total Dissolved Solids (Lab)	mg/L	1630	1670			1630		1690			1680			1670	1600	1540	1500	1530	1520	1510	1500
Calcium	mg/L	2.00	3.67			3.63		3.27			3.33			3.2	3.71	4.15	3.55	3.16	3.08	3.34	3.14
Magnesium	mg/L	0.616	0.823			0.859		0.550			0.776			0.774	0.811	0.913	0.739	0.692	0.655	0.680	0.723
Sodium	mg/L	566	585			589		551			562			542	562	605	543	525	553	528	520
Potassium	mg/L	1.72	2.02			2.04		<5.00			<2.00			1.8	<2.00	2.17	<2.00	1.92	<2.00	<5.00	<3.00
Alkalinity, Total	mg/L	530	470			500		490			430			480	480	475	540	450	459	420	460
Alkalinity, Bicarbonate	mg/L	380	470			440		460			360			480	420	385	330	430	423	420	460
Alkalinity, Carbonate	mg/L	150	<10.0			60.0		30.0			70.0			<10.0	60.0	90.0	210	20	36.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10	<10.0	<10.0	<10.0
Chloride	mg/L	16.1	17.4			18.5		16.9			16.4			16.1	15.1	16.0	15.2	15	15.0	14.7	13.9
Fluoride	mg/L	0.464	0.488			0.535		<0.500			<0.500			<0.5	NA	0.383	0.406	0.404	0.396	<0.500	0.370
Sulfate as SO4	mg/L	729	802			840		730			812			756	706	682	716	699	724	633	637
Total Organic Carbon (TOC)	mg/L	3.52	10.0			7.26		6.07			5.32			4.7	4.62	4.52	4.15	4.10	3.84	3.81	3.42
Nitrate/Nitrite as N	mg/L	<0.100	<0.100			<0.020		<0.020			<0.020			<0.02	<0.02	<0.02	0.266	<0.02	<0.020	<0.020	0.024
Ammonia as N ^	mg/L																			0.354	
Ortho-Phosphate as P ^	mg/L																			0.0730	
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.10	<0.100	<0.05	<0.100	<0.250	<0.150
Arsenic	mg/L	0.0025	<0.0025			<0.0025		<0.0025			<0.0025			0.0006	<0.0025	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0005			<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Copper	mg/L	0.0061	0.0081			0.0080		0.0079			0.0236			0.0063	0.0117	0.0086	0.0137	0.0078	0.0067	0.0039	0.0037
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.05	<0.100	<0.250	<0.150
Lead	mg/L	<0.0005	<0.0025			<0.0025		<0.0025			<0.0025			<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010
Manganese	mg/L	0.0042	0.0251			0.0194		0.0269			0.0232			0.018	0.0222	0.0187	0.0172	0.0185	0.0166	0.0140	0.0162
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0005	0.0274			0.0091		0.0078			0.0065			0.0046	0.0043	0.0033	0.003	0.003	0.0018	0.0027	0.0022
Selenium	mg/L	0.0577	<0.0050			<0.0050		<0.0050			<0.0050			0.0109	<0.0050	0.0028	0.0039	<0.005	0.0020	<0.0020	<0.0020
Silica (Si02)	mg/L	10.1	10.9			11.6		7.66			11.1			11	12.0	12.8	11.7	11	12.7	11.8	11.6
Silicon	mg/L	4.70	5.10			5.41		3.58			5.18			5.17	5.62	5.97	5.46	5.16	5.95	5.53	5.43
Uranium	mg/L	0.0002	0.0040			0.0051		0.0036			0.0030			0.0026	0.0026	0.0027	0.0018	0.0014	0.0012	0.0011	0.0010
Zinc	mg/L	0.0031	<0.0100			<0.0100		<0.0100			<0.0100			<0.002	<0.002	<0.0040	<0.0040	<0.01	<0.0080	<0.0040	<0.0040

Notes & Definitions:

^	one-time analysis
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)

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GCC Energy Hydrologic Monitoring Data

MW-3-MI																					
Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/27	6/30	7/18	8/16	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/21	11/12	2/4
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.12	0.12	0.06	0.25	0.5
Total Purged	gal	19.0	2.0	NM	NM	NM	1.0	1.0	1.0	1.3	1.5	1.5	1.0	1.3	1.0	1.1	1.5	1.3	2.0	1.0	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	240.65	240.84	241.04	241.97	242.13	242.15	242.32	246.55	243.07	242.85
Temperature	deg C	10.0	12.6	22.0	12.9	11.0	12.1	11.7	11.7	11.9	11.3	11.9	11.8	12.6	13.0	12.4	11.6	11.3	13.2	12.3	11.6
pH	SU	9.34	8.94	8.46	8.90	8.74	8.90	8.86	8.86	8.84	8.83	8.84	8.51	8.48	8.49	8.46	8.51	8.55	8.71	8.75	8.71
Specific Conductance	µS/cm	1907	1699	1402	1598	1737	1729	1745	1786	1790	1810	1771	1772	1727	1709	1746	1753	1739	1691	1739	1758
Oxygen Reduction Potential	mV	-87.0	-54.5	-26.4	-108.2	-107.3	-113.8	-124.2	-163.1	-136.0	-131.4	-160.7	-99.9	-103.9	-127.8	-176.5	-113.0	-84.5	43.9	-130.8	-104.3
Lab Analytical Results:																					
Hardness as CaCO3	mg/L	4.85	8.73			9.02		7.75			9.92			8.65	8.63	8.88	7.63	6.84	7.98	6.64	6.50
pH (Lab)	SU	8.95	8.75			8.72		8.72			8.66			8.56	8.58	8.34	8.5	8.45	8.58	8.62	8.61
Total Dissolved Solids (Lab)	mg/L	1550	1120			1140		1080			1170			1210	1110	1120	1120	1170	1010	1130	1143
Calcium	mg/L	1.32	2.32			2.34		2.06			2.22			1.91	1.95	2.03	1.87	1.7	2.04	1.73	1.63
Magnesium	mg/L	0.374	0.714			0.775		0.632			1.07			0.945	0.911	0.926	0.715	0.629	0.703	0.561	0.591
Sodium	mg/L	420	430			440		411			459			417	446	476	434	419	454	437	437
Potassium	mg/L	2.15	2.21			1.93		<5.00			<2.00			1.63	<2.00	<2.00	1.39	1.65	<2.00	<5.00	<2.00
Alkalinity, Total	mg/L	740	675			700		660			700			680	730	720	685	755	720	690	705
Alkalinity, Bicarbonate	mg/L	510	555			600		570			600			500	630	610	485	605	590	610	645
Alkalinity, Carbonate	mg/L	230	120			100		90.0			100			180	100	110	200	150	130	80.0	60.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	8.66	10.1			10.7		10.6			10.7			10.7	8.54	8.83	9.21	9.25	10.2	9.13	9.21
Fluoride	mg/L	0.952	1.34			1.26		1.26			1.30			1.2	1.16	1.19	1.21	1.22	1.19	1.19	1.13
Sulfate as SO4	mg/L	165	241			247		254			245			250	226	230	232	229	236	224	227
Total Organic Carbon (TOC)	mg/L	8.34	14.8			10.9		10.3			9.24			8.67	7.83	7.28	6.73	6.56	6.17	5.78	5.58
Nitrate/Nitrite as N	mg/L	<0.020	<0.020			<0.020		<0.020			<0.020			<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020	0.034
Ammonia as N ^	mg/L																			0.317	
Ortho-Phosphate as P ^	mg/L																			0.348	
Aluminum	mg/L	<0.050	0.102			<0.050		<0.250			<0.100			<0.05	<0.05	<0.10	<0.050	<0.050	0.167	<0.250	<0.100
Arsenic	mg/L	0.0134	0.0167			0.0131		0.0135			0.0160			0.0152	0.0127	0.0104	0.0149	0.0107	0.0142	0.0099	0.0093
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0005	<0.0001	<0.0002	<0.0002
Copper	mg/L	0.0055	0.0058			0.0065		0.0059			0.0122			0.0048	0.0071	0.0073	0.0068	0.0063	0.0049	0.0037	0.0024
Iron	mg/L	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.05	<0.1	<0.050	<0.050	<0.100	<0.250	<0.100
Lead	mg/L	0.0024	<0.0025			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.001	<0.0005	<0.0025	<0.0005	<0.0010	<0.0010
Manganese	mg/L	0.0022	0.0058			0.0033		0.0045			0.0049			0.006	0.0054	0.0072	0.0078	0.0082	0.0079	0.0099	0.0095
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0061	0.0211			0.0148		0.0152			0.0170			0.016	0.0149	0.0158	0.0157	0.0167	0.0277	0.0372	0.0204
Selenium	mg/L	0.0013	<0.0050			<0.0050		<0.0050			0.0010			0.0019	<0.0050	<0.002	0.0034	<0.005	<0.0010	<0.0020	<0.0020
Silica (Si02)	mg/L	7.97	8.18			9.05		5.35			9.33			8.83	9.49	10.2	8.95	8.85	9.73	9.46	8.80
Silicon	mg/L	3.73	3.82			4.23		2.50			4.36			4.13	4.44	4.76	4.18	4.14	4.55	4.42	4.11
Uranium	mg/L	0.0049	0.0084			0.0140		0.0124			0.0125			0.0126	0.0111	0.0110	0.011	0.0085	0.0080	0.0070	0.0063
Zinc	mg/L	0.0405	<0.0100			<0.0100		<0.0100			<0.0020			0.0023	0.0023	<0.0040	0.0028	<0.01	0.0070	<0.0040	<0.0040

Notes & Definitions:

^	one-time analysis
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-3-C																					
Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	9	11	3
Sample Date		3/27	6/30	7/27	8/24	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	9/17	11/12	3/13
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.10	0.06	0.06	0.13	0.13	0.10
Total Purged	gal	20	2	NM	NM	NM	1	1	1	1.5	1.5	1.5	1	1.3	1.3	1.1	1.25	1.5	10	1.5	11
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	296.57	296.62	296.78	297.12	296.8	296.39	295.56	295.7	295.5	299.35
Temperature	deg C	10.5	12.9	13.1	12.5	11.8	12.7	11.5	11.7	11.7	11.4	11.6	12.2	13.0	13.3	11.5	11.0	11.4	13.5	12.5	11.3
pH	SU	8.61	8.57	8.51	8.46	8.44	8.48	8.41	8.48	8.43	8.43	8.45	8.25	8.28	8.26	8.17	8.28	8.29	8.31	8.20	7.98
Specific Conductance	µS/cm	3549	3588	3815	4112	4351	4412	4659	4596	4923	4864	5063	5019	4916	4953	5127	5155	5184	5144	5144	4921
Oxygen Reduction Potential	mV	-129.0	-87.2	-137.5	-128.8	-149.9	-198.3	-200.7	-222.2	-187.9	-183.5	-155.4	-154.7	-161.4	-180.5	-217.6	-185.4	-188.5	-151.8	-184.4	-155.0
Lab Analytical Results:																					
Hardness as CaCO3	mg/L	14.4	11.8			15.1		14.9			16.1			40.3	17.9	21.7	17.3	16.8	18.6	18.6	18.3
pH (Lab)	SU	8.5	8.48			8.35		8.28			8.35			8.34	8.31	8.24	8.2	8.23	8.31	8.12	7.98
Total Dissolved Solids (Lab)	mg/L	2130	2360			3070		3310			3540			3610	3520	3360	3300	3440	3500	3390	3220
Calcium	mg/L	3.60	2.87			3.50		3.58			3.81			7.28	4.01	4.70	4.05	3.74	4.30	4.23	4.26
Magnesium	mg/L	1.31	1.12			1.55		1.44			1.59			5.38	1.92	2.41	1.75	1.8	1.91	1.94	1.86
Sodium	mg/L	796	890			1100		1130			1200			1350	1220	1460	1270	1100	1360	1300	1280
Potassium	mg/L	3.47	3.24			4.01		<5.00			<10.0			<5.00	<5.00	<5.00	<5.00	5.24	<5.00	<10.0	<10.0
Alkalinity, Total	mg/L	1490	1570			1690		1880			1910			1760	1730	2050	2000	2110	2190	2130	2160
Alkalinity, Bicarbonate	mg/L	1360	1480			1650		1830			1810			1600	1670	1900	1830	2000	2020	2070	2000
Alkalinity, Carbonate	mg/L	130	90.0			40.0		50.0			100			160	60.0	150	170	110	170	60.0	160
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	182	330			477		506			549			544	524	561	577	575	620	542	549
Fluoride	mg/L	4.89	4.94			4.52		4.34			4.15			3.52	3.84	4.04	4.04	3.91	3.78	3.66	3.61
Sulfate as SO4	mg/L	73.4	73.5			46.4		24.5			<10.0			<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Total Organic Carbon (TOC)	mg/L	10.6	58.5			219		251			337			343	306	141	122	129	132	107	81.9
Nitrate/Nitrite as N	mg/L	<0.020	<0.400			<0.400		<0.020			<0.020			<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.500	
Ortho-Phosphate as P ^	mg/L																			0.212	
Aluminum	mg/L	<0.050	<0.100			<0.050		<0.250			<0.500			1.47	<0.500	<0.250	<0.250	<0.500	<0.250	<0.500	<0.500
Arsenic	mg/L	0.0115	0.0088			0.0098		0.0091			0.0194			0.0168	0.0148	0.0155	0.0218	0.0171	0.0192	0.0188	0.0087
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0005			<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.0109	0.0147			0.0174		0.0160			0.0409			0.0183	0.0257	0.0227	0.0223	0.0168	0.0102	0.0109	0.0069
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.500			0.252	<0.500	<0.250	<0.250	0.344	0.328	<0.500	<0.500
Lead	mg/L	0.0085	<0.0050			<0.0050		<0.0025			<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025	<0.0025
Manganese	mg/L	0.0091	0.0188			0.0178		0.0202			0.0307			0.0275	0.0243	0.0252	0.0483	0.063	0.0378	0.0266	0.0245
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0143	0.0291			0.0241		0.0241			0.0221			0.0189	0.0155	0.0140	0.0134	0.0121	0.0081	0.0075	0.0082
Selenium	mg/L	0.0233	0.0121			0.0149		0.0240			0.0383			0.0268	0.0232	0.0261	0.0464	0.0203	0.0203	0.0173	0.0125
Silica (Si02)	mg/L	7.82	8.86			9.16		6.01			<10.7			9.69	8.68	10.7	8.24	8.35	9.06	<10.7	<10.7
Silicon	mg/L	3.66	4.14			4.28		2.81			<5.00			4.53	4.06	5.01	3.85	3.9	4.24	<5.00	<5.00
Uranium	mg/L	0.0091	0.0102			0.0137		0.0100			0.0091			0.0087	0.0089	0.0113	0.0077	0.0046	0.0053	0.0034	0.0045
Zinc	mg/L	0.375	<0.0200			<0.0200		<0.0100			<0.0100			<0.0100	0.0664	0.0814	0.123	0.128	0.0567	0.0886	<0.0100

Notes & Definitions:

^	one-time analysis
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
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NM	not measured (field)
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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-4-A																					
Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/29	6/30	7/19	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/6
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.06	0.06	0.06	0.125	0.03
Total Purged	gal	19	2.0	1.5	0.5	1.0	1.0	1.0	1.0	1.3	1.5	1.5	1	1.5	1.5	1.1	1.5	1.3	1.1	1.0	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	334.81	335.07	335.58	336.06	336.73	335.6	335.07	335.21	335.16	336.35
Temperature	deg C	15.6	16.8	25.5	17.6	11.9	11.6	10.8	10.1	10.9	9.8	11.4	10.9	17.8	12.9	11.6	11.1	10.4	13.6	11.6	10.3
pH	SU	8.61	8.29	8.55	7.98	8.41	8.32	8.38	8.32	8.33	8.37	8.41	8.19	8.20	8.10	8.12	8.15	8.08	8.02	8.11	8.07
Specific Conductance	µS/cm	2163	2053	1876	2096	2180	2165	2186	2261	2259	2267	2207	2214	2183	2192	2246	2205	2237	2201	2211	2271
Oxygen Reduction Potential	mV	28.6	54.0	60.2	61.7	-8.6	-27.0	-12.3	-51.8	-35.2	-75.9	-117.3	-77.9	-81.8	-137.5	-157.6	-92.3	-89.3	-54.3	-19.8	15.3
Lab Analytical Results:																					
Hardness as CaCO3	mg/L	9.16	9.85			7.77		7.11			7.73			7.84	7.69	8.81	7.76	7.31	8.62	8.00	8.19
pH (Lab)	SU	8.2	8.40			8.36		8.40			8.28			8.31	8.21	8.24	8.05	8.08	8.15	8.02	8.11
Total Dissolved Solids (Lab)	mg/L	1470	1470			1450		1500			1490			1470	1430	1350	1450	1410	1540	1490	1476
Calcium	mg/L	2.23	2.43			1.76		1.87			1.81			1.75	1.71	1.92	1.77	1.68	1.94	1.82	1.88
Magnesium	mg/L	0.871	0.916			0.823		0.591			0.778			0.846	0.832	0.973	0.809	0.756	0.914	0.837	0.850
Sodium	mg/L	515	537			513		511			507			528	531	568	535	515	548	529	551
Potassium	mg/L	1.57	1.75			1.63		<5.00			<2.00			1.5	<2.00	<2.00	<2.00	<2.00	4.75	<5.00	<3.00
Alkalinity, Total	mg/L	635	560			630		590			530			560	575	575	545	565	575	544	560
Alkalinity, Bicarbonate	mg/L	635	560			590		560			490			560	555	575	505	544	535	528	560
Alkalinity, Carbonate	mg/L	<10.0	<10.0			40.0		30.0			40.0			<10.0	20.0	<10.0	40	32	40.0	16.0	<10.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10	<10.0	<10.0	<10.0
Chloride	mg/L	9.56	9.66			10.3		10.3			10.0			9.94	9.55	8.60	8.93	8.99	8.91	8.76	8.83
Fluoride	mg/L	<0.400	<0.400			<0.500		<0.500			<0.500			<0.5	<0.5	0.143	<0.200	<0.2	<0.200	<0.200	<0.200
Sulfate as SO4	mg/L	594	588			783		594			579			561	522	450	567	584	615	559	557
Total Organic Carbon (TOC)	mg/L	6.63	11.7			3.52		3.27			3.46			3.59	3.60	3.59	3.47	3.40	3.33	3.25	3.10
Nitrate/Nitrite as N	mg/L	0.035	<0.020			<0.020		<0.020			<0.020			<0.02	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.312	
Ortho-Phosphate as P ^	mg/L																			<0.0500	
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.250	<0.150
Arsenic	mg/L	0.0016	<0.0025			<0.0025		<0.0025			0.0019			0.0005	<0.0025	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002
Copper	mg/L	0.0053	0.0093			0.0076		0.0073			0.0124			0.0077	0.0105	0.0084	0.0081	0.0061	0.0120	0.0037	0.0034
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.250	<0.150
Lead	mg/L	0.0014	<0.0025			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010
Manganese	mg/L	0.0044	0.0063			0.0044		0.0040			0.0035			0.0033	<0.0075	0.0034	0.0032	0.0031	0.0026	0.0016	0.0033
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0009	0.0275			<0.0025		<0.0025			0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010
Selenium	mg/L	0.0016	<0.0050			<0.0050		<0.0050			0.0014			0.0025	<0.0050	<0.0020	0.0036	<0.001	<0.0010	<0.0020	<0.0020
Silica (Si02)	mg/L	10.2	10.6			9.99		6.85			9.47			10	10.2	11.2	9.65	9.81	11.0	10.5	10.3
Silicon	mg/L	4.75	4.97			4.67		3.20			4.43			4.7	4.77	5.22	4.51	4.59	5.14	4.89	4.79
Uranium	mg/L	0.0016	<0.0005			<0.0005		0.0005			0.0003			<0.0001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0010
Zinc	mg/L	0.269	0.0319			<0.0100		<0.0100			0.0022			0.0024	<0.0100	<0.0040	<0.0040	0.0033	<0.0020	<0.0040	<0.0040

Notes & Definitions:

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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
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NM	not measured (field)
NA	not analyzed (lab)

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GCC Energy Hydrologic Monitoring Data

MW-4-MI																					
Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/6
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	*gpm*	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.06	0.06	0.125	0.25	0.125
Total Purged	*gal*	0.5	6.5	NM	NM	1	1	1	1	1.3	1.5	1.5	1	1.3	1.8	1.6	2	1.25	1.125	1	1.25
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	330.53	330.5	329.62	331.1	336.57	331.10	331.06	331.92	332.10	332.50
Temperature	*deg C*	15.0	14.6	12.9	12.5	11.4	10.7	11.3	11.4	11.2	11.0	10.5	10.9	10.1	11.8	11.3	11.1	10.8	13.3	11.6	11.8
pH	*SU*	9.08	8.91	8.78	8.79	8.76	8.76	8.73	8.67	8.62	8.48	8.53	8.01	8.50	8.14	8.25	8.38	8.23	8.14	8.26	8.18
Specific Conductance	*µS/cm*	1581	1668	1731	1708	1784	1794	1804	1833	1848	1856	1841	1816	1739	1756	1808	1716	1800	1830	1776	1795
Oxygen Reduction Potential	*mV*	155.2	64.7	9.8	35.2	-29.6	-37.3	-111.5	-89.2	-112.5	-151.3	-145.7	-117.7	-130.0	-178.2	-202.3	-140.4	-154.7	-127.3	-76.8	-50.6
Lab Analytical Results:																					
Hardness as CaCO3	*mg/L*	5.43	8.71			7.07		4.20			6.01			5.88	6.06	6.39	5.35	4.93	5.65	3.31	4.70
pH (Lab)	*SU*	8.83	8.59			8.63		8.51			8.47			8.48	8.31	8.47	8.35	8.3	8.44	8.08	8.33
Total Dissolved Solids (Lab)	*mg/L*	1160	1170			1180		1180			1220			1140	1120	1100	1130	1130	1140	1120	1110
Calcium	*mg/L*	1.53	2.32			1.88		1.68			1.64			1.55	1.56	1.60	1.44	1.3	1.51	1.32	1.21
Magnesium	*mg/L*	0.392	0.707			0.579		<0.500			0.465			0.49	0.524	0.580	0.428	0.408	0.458	<0.500	0.406
Sodium	*mg/L*	408	458			449		452			447			471	470	500	462	458	496	477	441
Potassium	*mg/L*	1.46	<2.00			1.73		<5.00			<2.00			1.39	<2.00	<2.00	1.43	1.77	2.03	<5.00	<2.00
Alkalinity, Total	*mg/L*	965	915			1100		985			965			955	968	995	510	890	970	978	985
Alkalinity, Bicarbonate	*mg/L*	775	825			880		885			875			865	896	885	420	650	880	886	895
Alkalinity, Carbonate	*mg/L*	190	90.0			220		100			90.0			90	72.0	110	90	240	90.0	92.0	90.0
Alkalinity, Hydroxide	*mg/L*	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	*mg/L*	2.18	7.50			8.78		9.11			8.74			7.99	5.68	5.38	5.98	5.98	5.83	5.47	5.37
Fluoride	*mg/L*	4.72	5.02			5.09		5.10			5.02			4.82	4.84	4.94	5.49	5.44	5.38	5.31	5.11
Sulfate as SO4	*mg/L*	17.4	64.7			76.6		77.5			68.6			54.4	48.3	47.6	38.7	34.4	31.9	28.2	24.6
Total Organic Carbon (TOC)	*mg/L*	2.64	6.49			8.58		9.53			9.54			9.25	8.94	8.48	8.37	8.25	7.81	6.42	6.63
Nitrate/Nitrite as N	*mg/L*	<0.020	<0.020			<0.020		<0.020			<0.020			<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.040
Ammonia as N ^	*mg/L*																			0.240	
Ortho-Phosphate as P ^	*mg/L*																			0.280	
Aluminum	*mg/L*	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250	<0.100
Arsenic	*mg/L*	0.0099	0.0220			0.0131		0.0122			0.0139			0.0153	0.014	0.0119	0.0164	0.0111	0.0116	0.0107	0.0127
Cadmium	*mg/L*	<0.0001	<0.0001			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002
Copper	*mg/L*	0.0059	0.0058			0.0071		0.0070			0.0079			0.0063	0.0071	0.0078	0.0087	0.0153	0.0051	0.0027	0.0028
Iron	*mg/L*	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250	<0.100
Lead	*mg/L*	0.0010	<0.0005			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010
Manganese	*mg/L*	0.0020	0.0066			0.0081		0.0124			0.0080			0.007	0.0068	0.0084	0.0091	0.0084	0.0084	0.0073	0.0085
Mercury	*mg/L*	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	*mg/L*	0.0020	0.0160			0.0127		0.0134			0.0151			0.0119	0.0115	0.0129	0.0121	0.0119	0.0108	0.0101	0.0096
Selenium	*mg/L*	<0.0010	0.0012			<0.0050		<0.0050			<0.0010			0.0022	0.0113	<0.0020	0.002	<0.001	<0.0010	<0.0020	<0.0020
Silica (Si02)	*mg/L*	7.27	8.01			8.80		<5.35			8.30			8.9	9.29	10.3	8.86	9.06	10.2	9.51	8.21
Silicon	*mg/L*	3.40	3.75			4.11		2.50			3.88			4.16	4.34	4.81	4.14	4.24	4.76	4.45	3.84
Uranium	*mg/L*	0.0043	0.0126			0.0184		0.0169			0.0183			0.0173	0.0151	0.0191	0.0269	0.0176	0.0168	0.0145	0.0163
Zinc	*mg/L*	0.113	0.0697			<0.0100		<0.0100			<0.0020			<0.002	<0.002	<0.0040	<0.0020	<0.002	<0.0100	<0.0040	<0.0040

Notes & Definitions:

^	one-time analysis
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-4-C

Year		2017								2018							2019				2020
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11	2
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/4
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																					
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.2	0.12	0.06	0.125	0.125	0.13
Total Purged	gal	7	1.5	NM	NM	1	1	1	1	1.5	1.5	1.5	1	1.5	1	1.3	1.50	1.25	1.125	1	1.50
Depth to Water	ft bgs	328.33	314.05	309.87	306.86	303.96	303.80	302.47	304.80	282.35	281.30	303.30	304.05	NM	302.55	302.17	302.45	303.93	304.93	305.73	306.44
Temperature	deg C	13.3	17.4	12.7	12.0	13.9	11.8	11.2	11.0	11.7	10.8	12.5	11.4	12.4	12.9	11.5	11.3	11.2	12.5	11.7	11.2
pH	SU	8.33	7.62	7.68	7.70	7.69	7.75	7.72	7.79	7.80	7.88	7.94	7.75	7.79	7.76	7.79	7.87	7.86	7.81	7.85	7.87
Specific Conductance	µS/cm	3792	5944	5997	5885	5813	5721	5782	5604	5834	5903	5628	5792	5592	5583	5775	5710	5712	5930	5636	5729
Oxygen Reduction Potential	mV	57.3	20.3	-101.5	-111.2	-103.7	-117.4	-109.0	-120.1	-123.8	-154.3	-131.3	-134.9	-129.3	-157.6	-209.0	-160.1	-180.1	-156.8	-148.7	-135.9
Lab Analytical Results:																					
Hardness as CaCO3	mg/L	46.3	55.9			38.9		30.0			26.5			26.2	25.9	28.6	23.6	22.5	25.2	24.4	24.0
pH (Lab)	SU	7.61	7.77			7.79		7.98			7.84			7.97	7.96	8.27	7.9	7.92	7.95	7.85	7.95
Total Dissolved Solids (Lab)	mg/L	3230	4050			3750		3780			3730			3660	3650	3590	3580	3590	3610	3610	3580
Calcium	mg/L	13.6	13.7			9.15		7.45			6.32			6.15	5.90	6.60	5.5	5.21	5.83	5.61	5.57
Magnesium	mg/L	2.99	5.26			3.90		2.76			2.61			2.62	2.72	2.94	2.39	2.3	2.57	2.53	2.44
Sodium	mg/L	908	1510			1490		1400			1410			1400	1410	1590	1410	1370	1440	1430	1440
Potassium	mg/L	4.38	5.71			6.07		<10.0			<10.0			<5	<5	5.36	<5.00	<5.00	5.42	<10.0	<5.00
Alkalinity, Total	mg/L	1250	2360			2780		2680			2600			2410	2480	2450	2470	2550	2500	2470	2480
Alkalinity, Bicarbonate	mg/L	1250	2360			2780		2640			2600			2330	2480	2450	2470	2350	2390	2410	2420
Alkalinity, Carbonate	mg/L	<10.0	<10.0			<10.0		40.0			<10.0			80	<10.0	<10.0	<10.0	200	110	60.0	60.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	181	550			587		608			592			573	533	590	575	554	580	525	528
Fluoride	mg/L	1.29	2.04			2.17		2.43			2.53			2.52	2.48	2.54	2.64	2.62	2.59	2.51	2.41
Sulfate as SO4	mg/L	534	487			70.2		26.0			34.5			27	18.7	11.2	5.07	<5.00	<5.00	<5.00	<5.00
Total Organic Carbon (TOC)	mg/L	30	6.42			5.08		3.64			3.23			3.23	2.80	3.46	3.24	2.62	2.63	4.18	2.23
Nitrate/Nitrite as N	mg/L	<2.00	<0.500			<0.400		<0.100			<0.020			<0.02	<0.02	<0.020	0.061	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.424	
Ortho-Phosphate as P ^	mg/L																			0.182	
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.500			<0.500			<0.25	<0.25	<0.250	<0.250	<0.250	<0.250	<0.500	<0.250
Arsenic	mg/L	0.0059	0.0119			0.0128		0.0152			0.0246			0.0195	0.0202	0.0164	0.0211	0.0171	0.0178	0.0179	0.0203
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0010			<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.0125	0.0243			0.0221		0.0208			0.0482			0.0389	0.0280	0.0230	0.0249	0.0382	0.0198	0.0107	0.0111
Iron	mg/L	<0.050	<0.050			<0.050		<0.500			<0.500			0.373	0.397	0.474	0.279	0.391	0.522	0.619	0.591
Lead	mg/L	<0.0005	<0.0050			<0.0050		<0.0050			<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.0005	<0.0025	<0.0025	<0.0025
Manganese	mg/L	0.0269	0.0772			0.0554		0.0571			0.0647			0.0529	0.0381	0.0283	0.0268	0.0174	0.0162	0.0096	0.0209
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002
Molybdenum	mg/L	0.0526	0.115			0.0138		0.0106			0.0086			0.0072	0.0071	0.0057	0.0074	0.007	0.0056	0.0047	0.0045
Selenium	mg/L	0.0248	0.0231			0.0214		0.0269			0.0378			0.0317	0.0260	0.0211	0.0339	0.0195	0.0195	0.0156	0.0140
Silica (Si02)	mg/L	9.85	12.6			12.9		<10.7			<10.7			11	11.2	12.8	10.1	10.5	11.3	11.0	9.88
Silicon	mg/L	4.61	5.88			6.02		<5.00			<5.00			5.16	5.24	6.00	4.7	4.89	5.29	5.14	4.62
Uranium	mg/L	0.0297	0.121			0.0984		0.0545			0.0311			0.0311	0.0277	0.0246	0.0215	0.0154	0.0086	0.0073	0.0063
Zinc	mg/L	0.0156	0.0265			<0.0200		<0.0200			<0.0100			<0.01	<0.01	<0.0100	<0.0100	0.0038	<0.0100	<0.0100	<0.0100

Notes & Definitions:

^	one-time analysis
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-6-A													
Year		**2018**	**2019**										**2020**
Quarter		Q4	Q1			Q2			Q3			Q4	Q1
Month		12	1	2	3	4	5	6	7	8	9	11	2
Sample Date		12/28	1/31	2/21	3/21	4/23	5/20	6/19	7/23	8/15	9/24	11/7	2/5
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	Y	Y
Field Parameters:													
Purge Flow Rate	*gpm*	NM	NM	0.10	2.00	0.03	0.03	0.03	0.06	0.03	0.02	0.01	0.05
Total Purged	*gal*	36.3	0.5	0.5	2.0	2.0	1.3	1.0	1.3	1.1	1.3	1.5	1.1
Depth to Water	*ft bgs*	304.33	306.41	307.40	309.60	311.05	312.50	314.20	315.75	316.43	NM	318.70	315.46
Temperature	*deg C*	7.4	10.7	8.1	7.5	9.6	7.3	12.5	12.3	11.9	10.4	10.4	7.8
pH	*SU*	7.32	6.64	6.66	6.74	6.65	6.73	6.76	6.75	6.76	6.80	6.79	6.89
Specific Conductance	*µS/cm*	6573	6053	6072	6107	6012	6057	5725	5598	5562	5451	5108	5043
Oxygen Reduction Potential	*mV*	-22.8	19.4	24.6	12.6	11.8	34.8	86.6	25.8	6.5	29.2	20.5	36.7
Lab Analytical Results:													
Hardness as CaCO3	*mg/L*	4360		4190			3920			3540		3070	3200
pH (Lab)	*SU*	7.10		6.85			6.77			6.85		6.87	6.9
Total Dissolved Solids (Lab)	*mg/L*	6520		6520			120*			6080		5210	3278
Calcium	*mg/L*	615		559			553			492		431	467
Magnesium	*mg/L*	687		678			617			560		484	495
Sodium	*mg/L*	294		283			296			304		276	296
Potassium	*mg/L*	15.0		14.4			12.4			12.8		11.1	<20
Alkalinity, Total	*mg/L*	160		160			143			183		220	215
Alkalinity, Bicarbonate	*mg/L*	160		160			143			183		220	215
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0		<10.0	<10
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0		<10.0	<10
Chloride	*mg/L*	97.4		28.6			27.3			29.9		29.6	28.4
Fluoride	*mg/L*	2.83		<0.500			<0.500			<0.500		<0.500	<0.5
Sulfate as SO4	*mg/L*	205		4300			4280			4260		3460	3080
Total Organic Carbon (TOC)	*mg/L*	3.45		3.08			2.91			3.57		3.10	3.16
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020		<0.020	0.049
Ammonia as N ^	*mg/L*											2.72	
Ortho-Phosphate as P ^	*mg/L*											<0.0500	
Aluminum	*mg/L*	<0.500		<0.250			<0.250			<0.250		<0.250	<1.00
Arsenic	*mg/L*	<0.0025		<0.0025			0.0009			<0.0025		<0.0025	<0.0025
Cadmium	*mg/L*	<0.0005		<0.0005			0.0001			<0.0005		<0.0005	<0.0005
Copper	*mg/L*	0.0116		0.0081			0.0035			0.0039		0.0017	0.0028
Iron	*mg/L*	1.37		3.75			3.93			3.22		2.72	1.95
Lead	*mg/L*	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025	<0.0025
Manganese	*mg/L*	0.788		0.802			0.724			0.690		0.585	0.551
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002		<0.0002	<0.0002
Molybdenum	*mg/L*	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025	<0.0025
Selenium	*mg/L*	<0.0050		<0.0050			0.0028			<0.0050		<0.0050	<0.005
Silica (Si02)	*mg/L*	12.3		11.9			14.3			13.4		12.5	<21.4
Silicon	*mg/L*	5.77		5.57			6.69			6.28		5.83	<10
Uranium	*mg/L*	<0.0005		<0.0005			<0.0001			<0.0005		<0.0005	<0.0025
Zinc	*mg/L*	0.0689		<0.0100			0.0082			0.0108		0.0117	0.0107

Notes & Definitions:

*	**Anomalous value under review**
^	**one-time analysis**
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.*

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GCC Energy Hydrologic Monitoring Data

MW-6-C													
Year		**2018**	**2019**										**2020**
Quarter		Q4	Q1			Q2			Q3			Q4	Q1
Month		12	1	2	3	4	5	6	7	8	9	11	2
Sample Date		12/24	1/30	2/21	3/21	4/23	5/20	6/19	7/23	8/15	9/24	11/7	2/5
Lab Analysis (Y/N)		N	N	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	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-6-MI														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2				Q3			Q4	Q1
Month		12	1	2	3	4	5	5	6	7	8	9	11	2
Sample Date		12/29	1/31	2/25	3/21	4/19	5/20	5/30	6/19	7/23	8/15	9/24	11/7	2/5
Lab Analysis (Y/N)		Y	N	Y	N	N	N#	N	N	N	N	N	N	N
Field Parameters:														
Purge Flow Rate	gpm	NM	NM	NM	0.5	0.1	0.015	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal	11.3	0.5	1.5	0.5	1.0	0.9							
Depth to Water	ft bgs	374.49	368.09	367.92	370.49	369.50	371.00							
Temperature	deg C	14.3	13.6	10.8	9.7	16.7	3.9							
pH	SU	8.26	7.43	7.21	7.55	7.97	7.84							
Specific Conductance	µS/cm	3390	3620	3132	2619	2202	2527							
Oxygen Reduction Potential	mV	103.0	-80.2	77.6	59.8	38.3	64.9							
Lab Analytical Results:														
Hardness as CaCO3	mg/L	679		147										
pH (Lab)	SU	8.18		8.35										
Total Dissolved Solids (Lab)	mg/L	2480		1880										
Calcium	mg/L	104		23.4										
Magnesium	mg/L	102		21.6										
Sodium	mg/L	646		565										
Potassium	mg/L	12.0		5.30										
Alkalinity, Total	mg/L	395		615										
Alkalinity, Bicarbonate	mg/L	345		615										
Alkalinity, Carbonate	mg/L	50.0		<10.0										
Alkalinity, Hydroxide	mg/L	<10.0		<10.0										
Chloride	mg/L	175		178										
Fluoride	mg/L	2.06		2.46										
Sulfate as SO4	mg/L	1210		585										
Total Organic Carbon (TOC)	mg/L	3.63		4.55										
Nitrate/Nitrite as N	mg/L	0.023		<0.020										
Aluminum	mg/L	<0.100		<0.100										
Arsenic	mg/L	0.0084		0.0144										
Cadmium	mg/L	<0.0001		<0.0002										
Copper	mg/L	0.0113		0.0112										
Iron	mg/L	<0.100		<0.100										
Lead	mg/L	<0.0005		<0.0010										
Manganese	mg/L	0.0500		0.0224										
Mercury	mg/L	<0.0002		<0.0002										
Molybdenum	mg/L	0.0558		0.0690										
Selenium	mg/L	0.0098		0.0127										
Silica (Si02)	mg/L	9.93		9.05										
Silicon	mg/L	4.64		4.23										
Uranium	mg/L	0.0200		0.0118										
Zinc	mg/L	0.0092		0.0143										

Notes & Definitions:

**No sample collected, due to low yield, insufficient volume for lab sample after field parameters we measured**

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-6-LM														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/30	1/31	2/25	3/21	4/23	5/20	6/19	7/23	8/15	9/24	10/28	11/7	2/5
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	gpm	NM	NM	0.06	2.00	0.03	0.03	0.10	0.06	0.03	0.02	0.012	0.03	0.01
Total Purged	gal	0.5	0.5	1.5	2.0	2.0	2.3	1.3	1.3	1.8	2.0	1.5	2.0	2.0
Depth to Water	ft bgs	535.72	538.73	539.34	540.64	539.98	537.58	540.00	540.35	540.24	540.17	539.8	540.18	539.70
Temperature	deg C	7.9	14.3	7.8	8.1	9.1	9.3	11.7	14.0	13.4	11.6	10.12	12.4	10.5
pH	SU	7.64	7.38	7.51	7.54	7.49	7.54	7.67	7.80	7.65	7.43	7.45	7.37	7.39
Specific Conductance	µS/cm	6011	3784	3503	1461	1164	1296	1400	1272	1532	2104	2267	2113	2283
Oxygen Reduction Potential	mV	185.3	10.7	40.9	-32.8	-35.8	-111.0	-194.5	-163.6	-67.2	6.4	-47.98	19.9	-128.9
Lab Analytical Results:														
Hardness as CaCO3	mg/L	2260		1270			431			621			843	1060
pH (Lab)	SU	7.60		7.52			7.47			7.59			7.32	7.43
Total Dissolved Solids (Lab)	mg/L	5100		2840			875			1150			1630	1484
Calcium	mg/L	367		216			75.9			103			136	173
Magnesium	mg/L	325		177			58.7			88.3			122	153
Sodium	mg/L	459		248			129			153			172	203
Potassium	mg/L	173		64.5			14.0			13.7			11.3	11
Alkalinity, Total	mg/L	205		315			371			381			355	320
Alkalinity, Bicarbonate	mg/L	205		315			371			381			355	320
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	mg/L	256		43.7			5.73			8.70			11.4	11
Fluoride	mg/L	0.530		<0.500			0.324			<0.500			<0.500	0.352
Sulfate as SO4	mg/L	3050		1790			338			492			830	951
Total Organic Carbon (TOC)	mg/L	3.46		2.61			1.57			1.78			1.85	1.76
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	mg/L												1.99	
Ortho-Phosphate as P ^	mg/L												<0.0500	
Aluminum	mg/L	<0.250		<0.250			<0.050			<0.050			<0.100	<0.25
Arsenic	mg/L	0.0039		0.0049			0.0036			0.0038			0.0035	0.0044
Cadmium	mg/L	<0.0005		<0.0005			<0.0001			<0.0001			<0.0002	<0.0002
Copper	mg/L	0.0135		0.0064			0.0017			0.0018			0.0069	0.0014
Iron	mg/L	<0.250		<0.250			<0.050			<0.050			<0.100	<0.25
Lead	mg/L	<0.0025		<0.0025			<0.0005			<0.0005			<0.0010	<0.001
Manganese	mg/L	0.383		0.223			0.0692			0.148			0.166	0.184
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	mg/L	0.0490		0.0169			0.0037			0.0025			0.0022	0.002
Selenium	mg/L	0.0080		<0.0050			<0.0010			<0.0010			<0.0020	<0.002
Silica (Si02)	mg/L	10.5		13.5			17.0			17.4			15.9	17.1
Silicon	mg/L	4.91		6.29			7.96			8.12			7.43	7.97
Uranium	mg/L	0.0230		0.0075			0.0039			0.0054			0.0047	0.0055
Zinc	mg/L	0.0323		<0.0100			<0.0020			<0.0040			<0.0040	<0.004

Notes & Definitions:

^ one-time analysis
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-7-EAA														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6	2/11
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	gpm	1.10	1.10	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Purged	gal	15.0	18.0	15.0	3.0	15.0	16.0	15.3	15.3	17.0	15.0	15.0	15.0	36.5
Depth to Water	ft bgs	36.13	36.27	36.45	36.52	36.70	36.25	36.22	36.48	36.49	36.88	36.85	36.85	36.72
Temperature	deg C	10.0	10.0	10.0	9.9	10.1	10.4	10.4	10.6	10.5	10.3	10.4	10.6	10.4
pH	SU	6.99	7.01	7.04	6.93	7.00	7.06	7.07	6.28	6.95	7.06	7.03	7.06	6.91
Specific Conductance	µS/cm	2001	1910	1910	1926	1912	1767	1836	1885	1890	1913	1936	1922	1993
Oxygen Reduction Potential	mV	-68.0	-36.7	-41.4	-38.1	-48.8	14.1	-13.8	-33.9	-37.8	-29.5	-25.6	-21.3	0.9
Lab Analytical Results:														
Hardness as CaCO3	mg/L	936		1030			982			997			1020	963
pH (Lab)	SU	7.2		7.37			7.17			7.09			6.99	6.92
Total Dissolved Solids (Lab)	mg/L	1460		1480			1490			1480			1530	1250
Calcium	mg/L	170		179			171			173			162	165
Magnesium	mg/L	124		142			135			137			144	134
Sodium	mg/L	75.3		81.3			75.0			75.2			74.9	73.7
Potassium	mg/L	3.87		3.9			<5.00			3.74			3.74	3.82
Alkalinity, Total	mg/L	380		367			405			392			350	357
Alkalinity, Bicarbonate	mg/L	380		367			405			392			425	357
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	mg/L	11.9		10.7			10.8			10.9			11.6	10.3
Fluoride	mg/L	<0.500		0.332			0.322			0.322			<0.500	0.354
Sulfate as SO4	mg/L	732		736			733			844			746	774
Total Organic Carbon (TOC)	mg/L	3.72		3.57			3.73			3.70			3.45	3.42
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	mg/L												0.178	
Ortho-Phosphate as P ^	mg/L												<0.0500	
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.100			<0.050	<0.1
Arsenic	mg/L	0.0014		0.0015			0.0013			0.0016			0.0013	0.0013
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0002	<0.0002
Copper	mg/L	0.0003		0.0018			0.0011			0.0008			0.0006	<0.001
Iron	mg/L	1.82		1.95			1.81			2.12			2.00	1.84
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010	<0.001
Manganese	mg/L	3.72		4.49			4.01			4.22			4.76	4.86
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	mg/L	0.0008		0.0011			0.0007			0.0009			<0.0010	0.001
Selenium	mg/L	<0.0020		<0.0020			<0.0010			0.0011			<0.0020	<0.002
Silica (Si02)	mg/L	16.6		16.1			16.1			16.9			16.8	16.4
Silicon	mg/L	7.75		7.52			7.55			7.90			7.83	7.67
Uranium	mg/L	0.0021		0.0018			0.0017			0.0018			0.0020	0.0019
Zinc	mg/L	<0.0050		<0.0040			0.0021			0.0020			<0.0040	<0.004

Notes & Definitions:

^	one-time analysis
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-8-EAA														
Year		**2018**	**2019**											**2020**
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6	2/11
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	*gpm*	0.85	1.10	0.50	3.00	0.50	0.75	1.00	1.00	0.75	0.50	1.00	0.25	1.00
Total Purged	*gal*	18.0	14.0	15.0	3.0	15.0	17.0	15.3	15.3	18.0	15.3	15.5	15.0	15.2
Depth to Water	*ft bgs*	40.00	39.95	40.10	43.45	40.44	40.05	39.94	40.10	40.08	40.25	40.31	40.22	40.40
Temperature	*deg C*	10.3	10.2	10.0	9.9	10.3	10.5	10.6	10.5	10.6	10.3	10.2	11.2	10.5
pH	*SU*	7.12	7.09	7.13	7.17	7.09	7.02	7.17	7.09	7.05	7.03	6.99	6.99	6.99
Specific Conductance	*µS/cm*	1781	1696	1720	1725	1729	1628	1676	1699	172	1739	1774	1739	1758
Oxygen Reduction Potential	*mV*	-65	-52.8	-51.8	-53.0	-59.7	11.0	-29.5	-46.6	-44.8	-33.5	-38.8	-39.2	-18.2
Lab Analytical Results:														
Hardness as CaCO3	*mg/L*	870		861			864			883			867	861
pH (Lab)	*SU*	7.28		7.36			7.13			7.05			7.01	7.11
Total Dissolved Solids (Lab)	*mg/L*	1220		1290			1240			1280			1380	1290
Calcium	*mg/L*	152		151			148			154			143	149
Magnesium	*mg/L*	119		118			120			121			124	119
Sodium	*mg/L*	81.7		82.6			77.2			78.6			77.1	77.2
Potassium	*mg/L*	3.80		3.27			3.55			3.18			3.52	3.8
Alkalinity, Total	*mg/L*	400		435			450			431			445	404
Alkalinity, Bicarbonate	*mg/L*	400		435			450			431			445	404
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	*mg/L*	9.83		10.5			10.3			11.1			11.0	10.2
Fluoride	*mg/L*	0.380		0.370			0.338			0.342			<0.500	0.33
Sulfate as SO4	*mg/L*	533		559			606			643			577	602
Total Organic Carbon (TOC)	*mg/L*	3.77		3.59			3.77			3.68			3.52	3.49
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	*mg/L*												0.216	
Ortho-Phosphate as P ^	*mg/L*												<0.0500	
Aluminum	*mg/L*	<0.100		<0.100			<0.050			<0.100			<0.050	<0.1
Arsenic	*mg/L*	0.0020		0.0018			0.0018			0.0021			0.0018	0.0017
Cadmium	*mg/L*	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002
Copper	*mg/L*	0.0004		0.0024			0.0023			0.0008			0.0010	0.001
Iron	*mg/L*	2.12		2.13			2.42			2.46			2.30	2.28
Lead	*mg/L*	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.001
Manganese	*mg/L*	3.17		3.52			3.06			3.37			3.39	3.7
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	*mg/L*	0.0009		0.0011			0.0008			0.0011			0.0008	<0.001
Selenium	*mg/L*	<0.0020		<0.0020			0.0010			0.0013			<0.0010	<0.002
Silica (Si02)	*mg/L*	16.3		15.3			15.7			16.1			15.9	15.7
Silicon	*mg/L*	7.63		7.15			7.32			7.52			7.42	7.32
Uranium	*mg/L*	0.0021		0.0017			0.0016			0.0018			0.0019	0.0019
Zinc	*mg/L*	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020	<0.004

Notes & Definitions:

^	**one-time analysis**
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-8-MI														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6	2/11
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	*gpm*	1.10	1.00	0.50	3.00	0.50	0.50	0.25	0.50	0.75	0.50	1.00	0.25	0.25
Total Purged	*gal*	27.5	18.0	1.0	3.0	1.5	2.5	2.5	2.3	3.0	2.0	2.5	1.0	1.0
Depth to Water	*ft bgs*	45.75	43.48	43.50	44.30	44.47	44.10	44.24	44.45	44.59	44.90	45.12	45.10	45.20
Temperature	*deg C*	10.8	10.8	10.6	11.2	10.4	11.1	11.4	11.0	11.4	10.9	10.3	11.4	10.2
pH	*SU*	7.57	7.50	7.48	7.47	7.34	7.31	7.48	7.42	7.38	7.30	7.23	7.15	7.08
Specific Conductance	*µS/cm*	1786	1667	1651	1658	1643	1595	1639	1645	1658	1637	1689	1642	1651
Oxygen Reduction Potential	*mV*	-84.4	-177.1	-122.1	-113.3	-87.2	-54.4	-97.1	-116.4	-119.4	-88.4	-82.0	-59.3	-136.6
Lab Analytical Results:														
Hardness as CaCO3	*mg/L*	167		249			273			253			267	254
pH (Lab)	*SU*	7.73		7.54			7.24			7.46			7.44	7.53
Total Dissolved Solids (Lab)	*mg/L*	1050		1030			1100			1110			1050	1060
Calcium	*mg/L*	34.0		48.5			52.4			49.7			51.3	48.7
Magnesium	*mg/L*	19.9		31.0			34.5			31.4			33.8	32.1
Sodium	*mg/L*	344		312			289			289			275	269
Potassium	*mg/L*	4.47		5.25			<5.00			4.55			5.07	4.71
Alkalinity, Total	*mg/L*	500		565			560			573			585	543
Alkalinity, Bicarbonate	*mg/L*	500		565			560			573			585	543
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	*mg/L*	12.7		10.0			9.33			9.06			9.66	8.19
Fluoride	*mg/L*	<0.500		<0.200			<0.200			<0.200			<0.500	<0.2
Sulfate as SO4	*mg/L*	347		353			343			366			317	314
Total Organic Carbon (TOC)	*mg/L*	2.73		2.83			2.81			2.74			2.65	2.6
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	*mg/L*												1.31	
Ortho-Phosphate as P ^	*mg/L*												<0.0500	
Aluminum	*mg/L*	<0.050		<0.100			<0.250			<0.100			<0.050	<0.1
Arsenic	*mg/L*	0.0008		<0.0010			0.0006			0.0005			0.0005	<0.001
Cadmium	*mg/L*	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002
Copper	*mg/L*	0.0031		0.0066			0.0036			0.0035			0.0037	0.0027
Iron	*mg/L*	0.137		0.162			<0.250			0.129			0.130	0.108
Lead	*mg/L*	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.001
Manganese	*mg/L*	0.0495		0.0383			0.0327			0.0351			0.0377	0.0391
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	*mg/L*	0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.001
Selenium	*mg/L*	<0.0020		<0.0020			0.0010			0.0010			<0.0010	<0.002
Silica (Si02)	*mg/L*	12.1		12.4			12.8			12.5			12.6	12.2
Silicon	*mg/L*	5.65		5.78			5.99			5.83			5.88	5.71
Uranium	*mg/L*	0.0002		0.0002			0.0002			0.0001			0.0001	<0.001
Zinc	*mg/L*	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020	<0.004

Notes & Definitions:

^	one-time analysis
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.*

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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-8-LM														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/28	1/29	2/19	3/21	4/16	5/29	6/18	7/24	8/13	9/27	10/24	11/6	2/11
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	gpm	NM	1.00	0.25	1.00	0.50	0.10	0.25	0.25	0.50	0.25	0.12	0.25	0.25
Total Purged	gal	30	4.0	1.5	1.0	2.0	1.3	6.8	2.0	2.0	1.0	1.0	1.5	1.0
Depth to Water	ft bgs	136.39	130.52	134.30	144.03	140.03	137.48	142.23	144.15	138.06	137.50	137.60	137.34	139.15
Temperature	deg C	4.1	13.9	13.2	8.7	13.6	13.9	12.8	13.7	13.4	13.0	11.7	13.3	11.4
pH	SU	8.37	8.70	8.71	8.41	8.70	8.50	8.66	8.64	8.58	8.44	8.44	8.47	7.98
Specific Conductance	µS/cm	2306	1274	1265	1310	1262	1234	1264	1226	1269	1252	1299	1255	1294
Oxygen Reduction Potential	mV	37.5	-114.3	112.8	77.0	-36.2	33.2	-63.9	-93.5	-103.0	-115.9	-94.4	-47.4	-106.6
Lab Analytical Results:														
Hardness as CaCO3	mg/L	45.0		7.29			16.9			6.67			6.38	6.79
pH (Lab)	SU	8.57		8.63			8.02			8.56			8.52	8.55
Total Dissolved Solids (Lab)	mg/L	1420		770			780			785			780	840
Calcium	mg/L	10.8		1.93			3.84			1.78			1.68	1.77
Magnesium	mg/L	4.39		0.600			1.77			0.541			0.528	0.574
Sodium	mg/L	382		341			317			306			305	309
Potassium	mg/L	45.7		3.49			<5.00			2.27			2.18	2.06
Alkalinity, Total	mg/L	615		720			745			731			745	685
Alkalinity, Bicarbonate	mg/L	535		610			645			645			685	595
Alkalinity, Carbonate	mg/L	80.0		110			100			86.0			60.0	90
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	mg/L	175		5.11			6.80			2.63			2.48	3.04
Fluoride	mg/L	2.06		3.91			3.95			3.97			3.88	3.61
Sulfate as SO4	mg/L	190		3.79			9.58			1.02			<1.00	<2
Total Organic Carbon (TOC)	mg/L	2.80		1.80			3.33			1.94			1.69	1.69
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	mg/L												0.282	
Ortho-Phosphate as P ^	mg/L												<0.0500	
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.1
Arsenic	mg/L	0.0106		<0.0010			0.0006			0.0007			0.0006	<0.0005
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0001
Copper	mg/L	0.0337		0.0077			0.0047			0.0041			0.0051	0.0033
Iron	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.1
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010	<0.0005
Manganese	mg/L	0.0258		0.0038			0.0150			0.0020			0.0026	0.0025
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	mg/L	0.0142		<0.0010			0.0009			<0.0005			<0.0005	<0.0005
Selenium	mg/L	0.0020		<0.0020			<0.0010			<0.0010			<0.0010	<0.001
Silica (Si02)	mg/L	9.09		8.45			8.68			8.28			7.77	7.62
Silicon	mg/L	4.25		3.95			4.06			3.87			3.63	3.56
Uranium	mg/L	0.0044		<0.0002			0.0001			0.0001			<0.0002	<0.0005
Zinc	mg/L	0.0080		<0.0040			0.0023			<0.0020			<0.0020	<0.002

Notes & Definitions:

^	one-time analysis
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
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GCC Energy Hydrologic Monitoring Data

MW-8-PL														
Year		2018	2019											2020
Quarter		Q4	Q1			Q2			Q3			Q4		Q1
Month		12	1	2	3	4	5	6	7	8	9	10	11	2
Sample Date		12/27	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6	2/11
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y
Field Parameters:														
Purge Flow Rate	gpm	0.25	1.00	0.50	3.00	0.50	0.25	0.50	1.00	0.50	0.50	0.75	0.25	0.25
Total Purged	gal	20.0	5.0	2.0	3.0	2.0	3.0	2.5	2.3	2.5	2.0	2.5	1.3	2.0
Depth to Water	ft bgs	125.97	126.29	126.40	127.10	126.98	126.70	126.82	127.25	127.38	127.42	127.48	127.59	127.32
Temperature	deg C	10.3	14.2	13.4	12.9	13.2	14.2	14.8	14.7	14.9	14.0	13.2	14.9	13.8
pH	SU	7.50	7.30	7.49	7.30	7.29	7.31	7.57	7.56	7.52	7.45	7.47	7.52	7.55
Specific Conductance	µS/cm	1690	1531	1571	1558	1554	1411	1326	1165	1083	947	940	900	862
Oxygen Reduction Potential	mV	30.2	-116.5	97.9	-108.7	-110.6	34.2	-57.6	-74.0	-79.5	-51.3	-52.5	-30.8	-59.9
Lab Analytical Results:														
Hardness as CaCO3	mg/L	617		644			596			411			294	278
pH (Lab)	SU	7.28		7.40			7.26			7.22			7.39	7.47
Total Dissolved Solids (Lab)	mg/L	1150		1090			995			705			620	500
Calcium	mg/L	112		120			105			73.1			52.1	49.3
Magnesium	mg/L	82.1		83.8			81.4			55.4			39.7	37.6
Sodium	mg/L	106		124			102			91.7			83.3	78.5
Potassium	mg/L	5.14		5.62			<5.00			2.80			2.35	2.32
Alkalinity, Total	mg/L	370		415			435			393			390	339
Alkalinity, Bicarbonate	mg/L	370		415			435			393			390	339
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10
Chloride	mg/L	18.8		18.5			9.03			5.61			5.66	3.51
Fluoride	mg/L	0.505		0.474			0.290			0.291			<0.500	0.258
Sulfate as SO4	mg/L	478		471			390			232			127	109
Total Organic Carbon (TOC)	mg/L	4.17		4.02			2.92			2.21			1.75	1.63
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.02
Ammonia as N ^	mg/L												0.199	
Ortho-Phosphate as P ^	mg/L												<0.0500	
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.05
Arsenic	mg/L	0.0074		0.0124			0.0190			0.0156			0.0104	0.0073
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002
Copper	mg/L	0.0016		0.0025			0.0017			0.0011			0.0004	0.001
Iron	mg/L	<0.050		0.352			<0.250			0.129			0.075	0.054
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.0005
Manganese	mg/L	1.31		1.22			0.697			0.505			0.313	0.303
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002
Molybdenum	mg/L	0.0090		0.0068			0.0020			0.0021			0.0017	0.0008
Selenium	mg/L	0.0012		<0.0020			<0.0010			<0.0010			<0.0010	<0.001
Silica (Si02)	mg/L	14.1		16.3			17.7			18.5			18.0	18.9
Silicon	mg/L	6.58		7.64			8.28			8.67			8.42	8.82
Uranium	mg/L	0.0052		0.0040			0.0010			0.0009			0.0004	<0.0005
Zinc	mg/L	0.0344		<0.0040			<0.0020			<0.0080			<0.0020	<0.002

Notes & Definitions:

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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
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04 March 2020

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 02/13/20 15:50. This data replaces the previous report (See case narrative). If you need any further assistance, please feel free to contact me.

Sincerely,

Jeremy D Allen For 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.

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Well #1 Upgradient	2002115-01	Water	02/13/20 08:17	02/13/20 15:50	
MW-HGA-4	2002115-02	Water	02/13/20 10:05	02/13/20 15:50	
Hay Gulch Ditch Upgradient	2002115-03	Water	02/13/20 11:11	02/13/20 15:50	
MW-99-SW	2002115-04	Water	02/13/20 11:35	02/13/20 15:50	

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

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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	03/04/20 15:37

Sample number 2002115-03, was requested to be analyzed as a Duplicate for HEM 1664 A and two sample bottles were submitted. However, our SOP for this method calls for a matrix spike for every 10 samples in a batch. Because of this, our Analyst performed a matrix spike on the second sample bottle instead of a duplicate. The recovery of the matrix spike is passing at 86%. This is an effective confirmation of the original result because HEM 1664A samples can be difficult to recover all of the spike used for a matrix spike. The spiking solution we use is made up of both polar and non-polar materials. Often the samples have been treated to remove one or both of these materials, which will cause low recovery for the matrix spike. Since this sample was chosen as a matrix spike and the recovery was within the acceptable limits, it is reasonable to assume that the original result for 2002115-03 is valid.

This is a re-issued report with a case narrative included. No changes have been made to the results. This report replaces "2002115 GAL FINAL 02 26 20 1629 A 02/26/20 16:29:53" that was sent on 2/26/20.

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

Green Analytical Laboratories
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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Well #1 Upgradient

2002115-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**600**	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Total as CaCO3*	**600**	10.0	7.16	mg/L	5	02/20/20 14:05	2320 B		VJW
Chloride*	**4.76**	2.00	0.177	mg/L	2	02/24/20 17:29	EPA300.0		AES
Fluoride*	**0.348**	0.200	0.0194	mg/L	2	02/24/20 17:29	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 14:04	EPA353.2		LLG
pH*	**7.12**			pH Units	1	02/13/20 16:20	EPA150.1		FGH
Total Dissolved Solids*	**700**	10.0		mg/L	1	02/13/20 16:20	EPA160.1		VJL
Sulfate*	**104**	4.00	0.610	mg/L	4	02/25/20 08:54	EPA300.0		AES
Total Organic Carbon*	**3.29**	0.500	0.135	mg/L	1	02/20/20 18:03	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.133	mg/L	5	02/17/20 13:01	EPA200.7		AES
Calcium*	**56.5**	0.500	0.083	mg/L	5	02/17/20 13:01	EPA200.7		AES
Hardness as CaCO3	**290**	3.31	0.690	mg/L	5	02/17/20 13:01	2340 B		AES
Iron*	**1.49**	0.250	0.092	mg/L	5	02/17/20 13:01	EPA200.7		AES
Magnesium*	**36.1**	0.500	0.117	mg/L	5	02/17/20 13:01	EPA200.7		AES
Potassium*	<5.00	5.00	0.651	mg/L	5	02/17/20 13:01	EPA200.7		AES
Silica (Si02)	**13.1**	5.35	0.177	mg/L	5	02/17/20 13:01	Calculation		AES
Silicon	**6.13**	2.50	0.083	mg/L	5	02/17/20 13:01	EPA200.7		AES
Sodium*	**183**	5.00	0.503	mg/L	5	02/17/20 13:01	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:44	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 10:44	EPA200.8		AES
Copper*	**0.0017**	0.0005	0.0002	mg/L	1	02/21/20 10:44	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:44	EPA200.8		AES
Manganese*	**0.366**	0.0005	0.0001	mg/L	1	02/21/20 10:44	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:44	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 10:44	EPA200.8	M5	AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 10:44	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/21/20 10:44	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

MW-HGA-4

2002115-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**435**	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Total as CaCO3*	**435**	10.0	7.16	mg/L	5	02/20/20 14:05	2320 B		VJW
Chloride*	**8.39**	1.00	0.0886	mg/L	1	02/24/20 17:49	EPA300.0		AES
Fluoride*	**0.447**	0.100	0.00971	mg/L	1	02/24/20 17:49	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 14:07	EPA353.2		LLG
pH*	**6.78**			pH Units	1	02/13/20 16:20	EPA150.1		FGH
Total Dissolved Solids*	**705**	10.0		mg/L	1	02/13/20 16:20	EPA160.1		VJL
Sulfate*	**193**	5.00	0.762	mg/L	5	02/24/20 18:08	EPA300.0		AES
Total Organic Carbon*	**4.80**	0.500	0.135	mg/L	1	02/20/20 18:20	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/17/20 13:04	EPA200.7		AES
Calcium*	**112**	0.200	0.033	mg/L	2	02/17/20 13:04	EPA200.7		AES
Hardness as CaCO3	**563**	1.32	0.276	mg/L	2	02/17/20 13:04	2340 B		AES
Iron*	**8.59**	0.100	0.037	mg/L	2	02/17/20 13:04	EPA200.7		AES
Magnesium*	**68.9**	0.200	0.047	mg/L	2	02/17/20 13:04	EPA200.7		AES
Potassium*	**2.05**	2.00	0.260	mg/L	2	02/17/20 13:04	EPA200.7		AES
Silica (Si02)	**15.2**	2.14	0.0708	mg/L	2	02/17/20 13:04	Calculation		AES
Silicon	**7.09**	1.00	0.033	mg/L	2	02/17/20 13:04	EPA200.7		AES
Sodium*	**27.9**	2.00	0.201	mg/L	2	02/17/20 13:04	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0022**	0.0005	0.0001	mg/L	1	02/21/20 11:01	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 11:01	EPA200.8		AES
Copper*	**0.0005**	0.0005	0.0002	mg/L	1	02/21/20 11:01	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 11:01	EPA200.8		AES
Manganese*	**1.77**	0.0005	0.0001	mg/L	1	02/21/20 11:01	EPA200.8		AES
Molybdenum*	**0.0025**	0.0005	0.0001	mg/L	1	02/21/20 11:01	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 11:01	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 11:01	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/21/20 11:01	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Hay Gulch Ditch Upgradient

2002115-03 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**295**	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Total as CaCO3*	**295**	10.0	7.16	mg/L	5	02/20/20 14:05	2320 B		VJW
Chloride*	**31.6**	1.00	0.0886	mg/L	1	02/24/20 18:28	EPA300.0		AES
Fluoride*	**0.239**	0.100	0.00971	mg/L	1	02/24/20 18:28	EPA300.0		AES
Nitrate/Nitrite as N*	**0.044**	0.020	0.006	mg/L as N	1	02/18/20 14:08	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	1.16	mg/L	1	02/18/20 08:30	EPA1664 A		VJL
pH*	**7.22**			pH Units	1	02/13/20 16:20	EPA150.1		FGH
SAR	**0.65**			No Unit	1	02/24/20 16:36	Calculation		AES
Total Dissolved Solids*	**555**	10.0		mg/L	1	02/19/20 14:00	EPA160.1		VJW
Total Suspended Solids*	<4.00	4.00		mg/L	1	02/14/20 13:20	EPA160.2		VJL
Sulfate*	**151**	5.00	0.762	mg/L	5	02/24/20 18:47	EPA300.0		AES
Total Organic Carbon*	**5.45**	0.500	0.135	mg/L	1	02/20/20 18:36	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/17/20 13:06	EPA200.7		AES
Calcium*	**81.5**	0.100	0.017	mg/L	1	02/17/20 13:06	EPA200.7		AES
Hardness as CaCO3	**405**	0.662	0.138	mg/L	1	02/17/20 13:06	2340 B		AES
Iron*	**0.551**	0.050	0.018	mg/L	1	02/17/20 13:06	EPA200.7		AES
Magnesium*	**49.0**	0.100	0.023	mg/L	1	02/17/20 13:06	EPA200.7		AES
Potassium*	**3.65**	1.00	0.130	mg/L	1	02/17/20 13:06	EPA200.7		AES
Silica (Si02)	**13.0**	1.07	0.0354	mg/L	1	02/17/20 13:06	Calculation		AES
Silicon	**6.06**	0.500	0.017	mg/L	1	02/17/20 13:06	EPA200.7		AES
Sodium*	**30.8**	1.00	0.101	mg/L	1	02/17/20 13:06	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0006**	0.0005	0.0001	mg/L	1	02/21/20 11:05	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 11:05	EPA200.8		AES
Copper*	**0.0006**	0.0005	0.0002	mg/L	1	02/21/20 11:05	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 11:05	EPA200.8		AES
Manganese*	**0.368**	0.0005	0.0001	mg/L	1	02/21/20 11:05	EPA200.8		AES
Molybdenum*	**0.0005**	0.0005	0.0001	mg/L	1	02/21/20 11:05	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 11:05	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 11:05	EPA200.8		AES
Zinc*	**0.0087**	0.0020	0.0003	mg/L	1	02/21/20 11:05	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Hay Gulch Ditch Upgradient

2002115-03 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 11:14	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

MW-99-SW

2002115-04 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**315**	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Total as CaCO3*	**315**	10.0	7.16	mg/L	5	02/20/20 14:05	2320 B		VJW
Chloride*	**31.2**	1.00	0.0886	mg/L	1	02/24/20 19:07	EPA300.0		AES
Fluoride*	**0.236**	0.100	0.00971	mg/L	1	02/24/20 19:07	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 14:10	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	1.16	mg/L	1	02/18/20 08:30	EPA1664 A		VJL
pH*	**7.18**			pH Units	1	02/13/20 16:20	EPA150.1		FGH
SAR	**0.65**			No Unit	1	02/24/20 16:41	Calculation		AES
Total Dissolved Solids*	**550**	10.0		mg/L	1	02/19/20 14:00	EPA160.1		VJW
Total Suspended Solids*	<4.00	4.00		mg/L	1	02/14/20 13:20	EPA160.2		VJL
Sulfate*	**150**	5.00	0.762	mg/L	5	02/24/20 19:26	EPA300.0		AES
Total Organic Carbon*	**5.57**	0.500	0.135	mg/L	1	02/20/20 18:53	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/17/20 13:17	EPA200.7		AES
Calcium*	**81.2**	0.100	0.017	mg/L	1	02/17/20 13:16	EPA200.7		AES
Hardness as CaCO3	**405**	0.662	0.138	mg/L	1	02/17/20 13:16	2340 B		AES
Iron*	**0.529**	0.050	0.018	mg/L	1	02/17/20 13:17	EPA200.7		AES
Magnesium*	**49.0**	0.100	0.023	mg/L	1	02/17/20 13:16	EPA200.7		AES
Potassium*	**3.63**	1.00	0.130	mg/L	1	02/17/20 13:16	EPA200.7		AES
Silica (Si02)	**12.9**	1.07	0.0354	mg/L	1	02/17/20 13:16	Calculation		AES
Silicon	**6.03**	0.500	0.017	mg/L	1	02/17/20 13:16	EPA200.7		AES
Sodium*	**30.9**	1.00	0.101	mg/L	1	02/17/20 13:16	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0006**	0.0005	0.0001	mg/L	1	02/21/20 11:08	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 11:08	EPA200.8		AES
Copper*	**0.0005**	0.0005	0.0002	mg/L	1	02/21/20 11:08	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 11:08	EPA200.8		AES
Manganese*	**0.392**	0.0005	0.0001	mg/L	1	02/21/20 11:08	EPA200.8		AES
Molybdenum*	**0.0005**	0.0005	0.0001	mg/L	1	02/21/20 11:08	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 11:08	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 11:08	EPA200.8		AES
Zinc*	**0.0084**	0.0020	0.0003	mg/L	1	02/21/20 11:08	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

MW-99-SW

2002115-04 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 11:14	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200151 - General Prep - Wet Chem										
Blank (B200151-BLK1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B200151-SRM1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	590	10.0	mg/L	600		98.3	85-115			
Batch B200173 - General Prep - Wet Chem										
Blank (B200173-BLK1)			Prepared & Analyzed: 02/14/20							
Total Suspended Solids	ND	4.00	mg/L							
Reference (B200173-SRM1)			Prepared & Analyzed: 02/14/20							
Total Suspended Solids	90.0	4.00	mg/L	100		90.0	85-115			
Batch B200174 - General Prep - Wet Chem										
Reference (B200174-SRM1)			Prepared & Analyzed: 02/13/20							
pH	7.02		pH Units	7.00		100	98.5-101.4			
Batch B200187 - General Prep - Wet Chem										
Blank (B200187-BLK1)			Prepared: 02/17/20 Analyzed: 02/18/20							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200187-BS1)			Prepared: 02/17/20 Analyzed: 02/18/20							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B200187-BSD1)			Prepared: 02/17/20 Analyzed: 02/18/20							
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.163	20	
Batch B200192 - General Prep - Wet Chem										
Blank (B200192-BLK1)			Prepared & Analyzed: 02/18/20							
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B200192-BS1)			Prepared & Analyzed: 02/18/20							
Oil & Grease (HEM)	35.4	5.00	mg/L	40.0		88.5	85-115			
LCS Dup (B200192-BSD1)			Prepared & Analyzed: 02/18/20							
Oil & Grease (HEM)	36.2	5.00	mg/L	40.0		90.5	85-115	2.23	20	
Matrix Spike (B200192-MS1)			**Source: 2002115-03** Prepared & Analyzed: 02/18/20							
Oil & Grease (HEM)	34.4	5.00	mg/L	40.0	ND	86.0	80-120			
Batch B200203 - General Prep - Wet Chem										
Blank (B200203-BLK1)			Prepared: 02/19/20 Analyzed: 02/24/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200203 - General Prep - Wet Chem (Continued)										
LCS (B200203-BS1)				Prepared: 02/19/20 Analyzed: 02/24/20						
Chloride	23.5	1.00	mg/L	25.0		93.9	90-110			
Fluoride	2.59	0.100	mg/L	2.50		103	90-110			
Sulfate	24.8	1.00	mg/L	25.0		99.1	90-110			
LCS Dup (B200203-BSD1)				Prepared: 02/19/20 Analyzed: 02/24/20						
Chloride	23.9	1.00	mg/L	25.0		95.6	90-110	1.79	20	
Fluoride	2.63	0.100	mg/L	2.50		105	90-110	1.46	20	
Sulfate	25.1	1.00	mg/L	25.0		100	90-110	1.13	20	
Batch B200204 - General Prep - Wet Chem										
Blank (B200204-BLK1)				Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200204-DUP1)			**Source: 2002115-03**	Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	575	10.0	mg/L		555			3.54	20	
Reference (B200204-SRM1)				Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	565	10.0	mg/L	600		94.2	85-115			
Batch B200209 - General Prep - Wet Chem										
Blank (B200209-BLK1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200209-BS1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.2	0.500	mg/L	10.0		102	85-115			
LCS Dup (B200209-BSD1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	1.09	20	
Batch B200214 - General Prep - Wet Chem										
Blank (B200214-BLK1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200214-BS1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	94.0	10.0	mg/L	100		94.0	85-115			
LCS Dup (B200214-BSD1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115	3.14	20	
Batch B200238 - Total Rec. 200.7/200.8/200.2										
Blank (B200238-BLK1)				Prepared & Analyzed: 02/24/20						
SAR	0.00		No Unit							

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200189 - Diss. 200.7/200.8										
Blank (B200189-BLK1)				Prepared & Analyzed: 02/17/20						
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 (B200189-BS1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.97	0.050	mg/L	5.00		99.4	85-115			
Calcium	4.97	0.100	mg/L	5.00		99.3	85-115			
Iron	4.85	0.050	mg/L	5.00		96.9	85-115			
Magnesium	24.4	0.100	mg/L	25.0		97.7	85-115			
Potassium	9.90	1.00	mg/L	10.0		99.0	85-115			
Silicon	5.07	0.500	mg/L	5.00		101	85-115			
Sodium	4.17	1.00	mg/L	4.05		103	85-115			
LCS Dup (B200189-BSD1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.90	0.050	mg/L	5.00		97.9	85-115	1.53	20	
Calcium	4.77	0.100	mg/L	5.00		95.4	85-115	4.07	20	
Iron	4.72	0.050	mg/L	5.00		94.5	85-115	2.59	20	
Magnesium	23.8	0.100	mg/L	25.0		95.2	85-115	2.58	20	
Potassium	9.66	1.00	mg/L	10.0		96.6	85-115	2.51	20	
Silicon	4.98	0.500	mg/L	5.00		99.5	85-115	1.83	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	0.985	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200172 - Diss. 200.7/200.8										
Blank (B200172-BLK1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200172-BS1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0533	0.0005	mg/L	0.0500		107	85-115			
Cadmium	0.0533	0.0001	mg/L	0.0500		107	85-115			
Copper	0.0517	0.0005	mg/L	0.0500		103	85-115			
Lead	0.0552	0.0005	mg/L	0.0500		110	85-115			
Manganese	0.0529	0.0005	mg/L	0.0500		106	85-115			
Molybdenum	0.0545	0.0005	mg/L	0.0500		109	85-115			
Selenium	0.270	0.0010	mg/L	0.250		108	85-115			
Uranium	0.0556	0.0005	mg/L	0.0500		111	85-115			
Zinc	0.0510	0.0020	mg/L	0.0500		102	85-115			
LCS Dup (B200172-BSD1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0448	0.0005	mg/L	0.0500		89.5	85-115	17.5	20	
Cadmium	0.0459	0.0001	mg/L	0.0500		91.8	85-115	15.0	20	
Copper	0.0455	0.0005	mg/L	0.0500		91.1	85-115	12.6	20	
Lead	0.0457	0.0005	mg/L	0.0500		91.5	85-115	18.8	20	
Manganese	0.0454	0.0005	mg/L	0.0500		90.7	85-115	15.3	20	
Molybdenum	0.0451	0.0005	mg/L	0.0500		90.1	85-115	19.0	20	
Selenium	0.226	0.0010	mg/L	0.250		90.5	85-115	17.8	20	
Uranium	0.0456	0.0005	mg/L	0.0500		91.2	85-115	19.8	20	
Zinc	0.0466	0.0020	mg/L	0.0500		93.3	85-115	8.93	20	

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Jeremy D. Allen

Jeremy D Allen For Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Total Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200164 - EPA 245.1/7470										
Blank (B200164-BLK1)				Prepared: 02/14/20 Analyzed: 02/17/20						
Mercury	ND	0.0002	mg/L							
LCS (B200164-BS1)				Prepared: 02/14/20 Analyzed: 02/17/20						
Mercury	0.0053	0.0002	mg/L	0.00500		107	85-115			
LCS Dup (B200164-BSD1)				Prepared: 02/14/20 Analyzed: 02/17/20						
Mercury	0.0050	0.0002	mg/L	0.00500		99.4	85-115	7.31	20	

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200163 - EPA 245.1/7470										
Blank (B200163-BLK1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	ND	0.0002	mg/L							
LCS (B200163-BS1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0056	0.0002	mg/L	0.00500		112	85-115			
LCS Dup (B200163-BSD1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0048	0.0002	mg/L	0.00500		96.0	85-115	15.3	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 15:37

Notes and Definitions

M5	Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
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

Jeremy D Allen For Debbie Zufelt, Reports Manager

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC
Address: 6473 COUNTY ROAD 120
City: HESPERUS State: CO Zip: 81326
Phone #: 970 385 4528
Contact Person: TOM BIRD / TBIRD@GCC.COM
Email Report to: LANDON BECK
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIC.COM
Sampler Name (Print): MARCUS BENALLY & MICHAEL G. MCFARLAND

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

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE	GCCE SW BASELINE
2002-115-01	WELL #1 UPGRADIENT	2-13-2020	08:17	V							1	1		4			V	
-02	MW-HGA-4	2-13-20	10:05	V							1	1		4			V	
-03	HAY GULCH DITCH UPGRADIENT	2-13-20	11:11		V						2	1	2	4				V
-04	MW-99-SW	2-13-20	11:35		V						2	1	1	4				V

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:
Michael G McFarland	2-13-2020	13:53	
Relinquished By: Marcus Benally	2/13/20	3:50 pm	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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

-115-03 Dup for Oil & Grease

#1 only

2.8/2.9°C Temperature at receipt: CHECKED BY

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

Project Information

Printed: 02/13/2020 3:57 pm

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

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

Project Name: GCC SW Baseline
Project Number: GCC SW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Total by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
Oil & Grease	
pH	
Potassium Dissolved by ICP	
SAR	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Solids, Total Suspended (TSS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

Printed: 02/13/2020 3:57 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

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21 February 2020

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 02/12/20 15:45.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-A	2002108-01	Water	02/12/20 09:32	02/12/20 15:45	
MW-1-C	2002108-02	Water	02/12/20 08:54	02/12/20 15:45	
MW-98	2002108-03	Water	02/12/20 09:55	02/12/20 15:45	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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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	02/21/20 15:41

MW-1-A

2002108-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**360**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**360**	10.0	7.16	mg/L	5	02/13/20 13:00	2320 B		VJL
Chloride*	**2.74**	2.00	0.177	mg/L	2	02/14/20 01:22	EPA300.0		AES
Fluoride*	**0.234**	0.200	0.0194	mg/L	2	02/14/20 01:22	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:35	EPA353.2		LLG
pH*	**7.19**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**1190**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**506**	20.0	3.05	mg/L	20	02/14/20 01:42	EPA300.0		AES
Total Organic Carbon*	**1.55**	0.500	0.135	mg/L	1	02/20/20 15:43	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/17/20 12:34	EPA200.7		AES
Calcium*	**30.9**	0.200	0.033	mg/L	2	02/17/20 12:33	EPA200.7		AES
Hardness as CaCO3	**159**	1.32	0.276	mg/L	2	02/17/20 12:34	2340 B		AES
Iron*	**0.614**	0.100	0.037	mg/L	2	02/17/20 12:34	EPA200.7		AES
Magnesium*	**19.9**	0.200	0.047	mg/L	2	02/17/20 12:34	EPA200.7		AES
Potassium*	**2.13**	2.00	0.260	mg/L	2	02/17/20 12:33	EPA200.7		AES
Silica (Si02)	**11.1**	2.14	0.0708	mg/L	2	02/17/20 12:34	Calculation		AES
Silicon	**5.19**	1.00	0.033	mg/L	2	02/17/20 12:34	EPA200.7		AES
Sodium*	**337**	2.00	0.201	mg/L	2	02/17/20 12:33	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 10:23	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 10:23	EPA200.8		AES
Copper*	**0.0034**	0.0010	0.0004	mg/L	2	02/21/20 10:23	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 10:23	EPA200.8		AES
Manganese*	**0.0303**	0.0010	0.0002	mg/L	2	02/21/20 10:23	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 10:23	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/21/20 10:23	EPA200.8		AES
Uranium	<0.0010	0.0010	0.0004	mg/L	2	02/21/20 10:23	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/21/20 10:23	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**.26**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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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	02/21/20 15:41

MW-1-C

2002108-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**515**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**515**	10.0	7.16	mg/L	5	02/13/20 13:00	2320 B		VJL
Chloride*	**8.54**	5.00	0.443	mg/L	5	02/14/20 02:01	EPA300.0		AES
Fluoride*	**0.615**	0.500	0.0486	mg/L	5	02/14/20 02:01	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:37	EPA353.2		LLG
pH*	**6.80**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**2610**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**1400**	50.0	7.62	mg/L	50	02/14/20 02:21	EPA300.0		AES
Total Organic Carbon*	**2.30**	0.500	0.135	mg/L	1	02/20/20 16:04	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.150	0.150	0.080	mg/L	3	02/17/20 12:38	EPA200.7		AES
Calcium*	**301**	0.300	0.050	mg/L	3	02/17/20 12:38	EPA200.7		AES
Hardness as CaCO3	**1600**	1.98	0.414	mg/L	3	02/17/20 12:38	2340 B		AES
Iron*	**0.570**	0.150	0.055	mg/L	3	02/17/20 12:38	EPA200.7		AES
Magnesium*	**207**	0.300	0.070	mg/L	3	02/17/20 12:38	EPA200.7		AES
Potassium*	**3.05**	3.00	0.390	mg/L	3	02/17/20 12:38	EPA200.7		AES
Silica (Si02)	**15.7**	3.21	0.106	mg/L	3	02/17/20 12:38	Calculation		AES
Silicon	**7.35**	1.50	0.050	mg/L	3	02/17/20 12:38	EPA200.7		AES
Sodium*	**143**	3.00	0.302	mg/L	3	02/17/20 12:38	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0005	mg/L	5	02/21/20 10:26	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0004	mg/L	5	02/21/20 10:26	EPA200.8		AES
Copper*	<0.0025	0.0025	0.0011	mg/L	5	02/21/20 10:26	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0006	mg/L	5	02/21/20 10:26	EPA200.8		AES
Manganese*	**0.0537**	0.0025	0.0006	mg/L	5	02/21/20 10:26	EPA200.8		AES
Molybdenum*	<0.0025	0.0025	0.0006	mg/L	5	02/21/20 10:26	EPA200.8		AES
Selenium*	<0.0050	0.0050	0.0027	mg/L	5	02/21/20 10:26	EPA200.8		AES
Uranium	<0.0025	0.0025	0.0010	mg/L	5	02/21/20 10:26	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0016	mg/L	5	02/21/20 10:26	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-1.73**								

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Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

MW-98

2002108-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	<10.0	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	<1.00	1.00	0.0886	mg/L	1	02/14/20 02:40	EPA300.0		AES
Fluoride*	<0.100	0.100	0.00971	mg/L	1	02/14/20 02:40	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:48	EPA353.2		LLG
pH*	**4.81**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**60.1**	20.0		mg/L	2	02/13/20 11:15	EPA160.1		VJL
Sulfate*	<1.00	1.00	0.152	mg/L	1	02/14/20 02:40	EPA300.0		AES
Total Organic Carbon*	<0.500	0.500	0.135	mg/L	1	02/20/20 16:58	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/17/20 12:49	EPA200.7		AES
Calcium*	<0.100	0.100	0.017	mg/L	1	02/17/20 12:49	EPA200.7		AES
Hardness as CaCO3	<0.662	0.662	0.138	mg/L	1	02/17/20 12:49	2340 B		AES
Iron*	<0.050	0.050	0.018	mg/L	1	02/17/20 12:49	EPA200.7		AES
Magnesium*	<0.100	0.100	0.023	mg/L	1	02/17/20 12:49	EPA200.7		AES
Potassium*	<1.00	1.00	0.130	mg/L	1	02/17/20 12:49	EPA200.7		AES
Silica (Si02)	<1.07	1.07	0.0354	mg/L	1	02/17/20 12:49	Calculation		AES
Silicon	<0.500	0.500	0.017	mg/L	1	02/17/20 12:49	EPA200.7		AES
Sodium*	<1.00	1.00	0.101	mg/L	1	02/17/20 12:49	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:30	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 10:30	EPA200.8		AES
Copper*	**0.0022**	0.0005	0.0002	mg/L	1	02/21/20 10:30	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:30	EPA200.8		AES
Manganese*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:30	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:30	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 10:30	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 10:30	EPA200.8		AES
Zinc*	**0.0027**	0.0020	0.0003	mg/L	1	02/21/20 10:30	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG

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GCC Energy, LLC	Project:	GCC GW Baseline	
6473 CR 120	Project Name / Number:	GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager:	Tom Bird	02/21/20 15:41

Cation/Anion Balance	**-68.58**

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200151 - General Prep - Wet Chem										
Blank (B200151-BLK1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200151-DUP1)		**Source: 2002065-01**	Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	33400	80.0	mg/L		33100			0.961	20	
Reference (B200151-SRM1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	590	10.0	mg/L	600		98.3	85-115			
Batch B200166 - General Prep - Wet Chem										
Blank (B200166-BLK1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200166-BS1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	95.0	10.0	mg/L	100		95.0	85-115			
LCS Dup (B200166-BSD1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.11	20	
Batch B200167 - General Prep - Wet Chem										
Blank (B200167-BLK1)			Prepared & Analyzed: 02/13/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200167-BS1)			Prepared & Analyzed: 02/13/20							
Chloride	23.8	1.00	mg/L	25.0		95.3	90-110			
Fluoride	2.48	0.100	mg/L	2.50		99.2	90-110			
Sulfate	24.2	1.00	mg/L	25.0		96.6	90-110			
LCS Dup (B200167-BSD1)			Prepared & Analyzed: 02/13/20							
Chloride	23.7	1.00	mg/L	25.0		94.8	90-110	0.450	20	
Fluoride	2.47	0.100	mg/L	2.50		98.8	90-110	0.404	20	
Sulfate	24.1	1.00	mg/L	25.0		96.4	90-110	0.294	20	
Batch B200174 - General Prep - Wet Chem										
Duplicate (B200174-DUP2)		**Source: 2002109-07**	Prepared & Analyzed: 02/13/20							
pH	6.88		pH Units		6.89			0.145	20	
Reference (B200174-SRM1)			Prepared & Analyzed: 02/13/20							
pH	7.02		pH Units	7.00		100	98.5-101.4			
Batch B200186 - General Prep - Wet Chem										
Blank (B200186-BLK1)			Prepared: 02/17/20 Analyzed: 02/18/20							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200186 - General Prep - Wet Chem (Continued)										
LCS (B200186-BS1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.02	0.020	mg/L as N	1.00		102	90-110			
LCS Dup (B200186-BSD1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.03	0.020	mg/L as N	1.00		103	90-110	0.723	20	
Batch B200187 - General Prep - Wet Chem										
Blank (B200187-BLK1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200187-BS1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B200187-BSD1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.163	20	
Batch B200209 - General Prep - Wet Chem										
Blank (B200209-BLK1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200209-BS1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.2	0.500	mg/L	10.0		102	85-115			
LCS Dup (B200209-BSD1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	1.09	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200189 - Diss. 200.7/200.8										
Blank (B200189-BLK1)				Prepared & Analyzed: 02/17/20						
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 (B200189-BS1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.97	0.050	mg/L	5.00		99.4	85-115			
Calcium	4.97	0.100	mg/L	5.00		99.3	85-115			
Iron	4.85	0.050	mg/L	5.00		96.9	85-115			
Magnesium	24.4	0.100	mg/L	25.0		97.7	85-115			
Potassium	9.90	1.00	mg/L	10.0		99.0	85-115			
Silicon	5.07	0.500	mg/L	5.00		101	85-115			
Sodium	4.17	1.00	mg/L	4.05		103	85-115			
LCS Dup (B200189-BSD1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.90	0.050	mg/L	5.00		97.9	85-115	1.53	20	
Calcium	4.77	0.100	mg/L	5.00		95.4	85-115	4.07	20	
Iron	4.72	0.050	mg/L	5.00		94.5	85-115	2.59	20	
Magnesium	23.8	0.100	mg/L	25.0		95.2	85-115	2.58	20	
Potassium	9.66	1.00	mg/L	10.0		96.6	85-115	2.51	20	
Silicon	4.98	0.500	mg/L	5.00		99.5	85-115	1.83	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	0.985	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200172 - Diss. 200.7/200.8										
Blank (B200172-BLK1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200172-BS1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0533	0.0005	mg/L	0.0500		107	85-115			
Cadmium	0.0533	0.0001	mg/L	0.0500		107	85-115			
Copper	0.0517	0.0005	mg/L	0.0500		103	85-115			
Lead	0.0552	0.0005	mg/L	0.0500		110	85-115			
Manganese	0.0529	0.0005	mg/L	0.0500		106	85-115			
Molybdenum	0.0545	0.0005	mg/L	0.0500		109	85-115			
Selenium	0.270	0.0010	mg/L	0.250		108	85-115			
Uranium	0.0556	0.0005	mg/L	0.0500		111	85-115			
Zinc	0.0510	0.0020	mg/L	0.0500		102	85-115			
LCS Dup (B200172-BSD1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0448	0.0005	mg/L	0.0500		89.5	85-115	17.5	20	
Cadmium	0.0459	0.0001	mg/L	0.0500		91.8	85-115	15.0	20	
Copper	0.0455	0.0005	mg/L	0.0500		91.1	85-115	12.6	20	
Lead	0.0457	0.0005	mg/L	0.0500		91.5	85-115	18.8	20	
Manganese	0.0454	0.0005	mg/L	0.0500		90.7	85-115	15.3	20	
Molybdenum	0.0451	0.0005	mg/L	0.0500		90.1	85-115	19.0	20	
Selenium	0.226	0.0010	mg/L	0.250		90.5	85-115	17.8	20	
Uranium	0.0456	0.0005	mg/L	0.0500		91.2	85-115	19.8	20	
Zinc	0.0466	0.0020	mg/L	0.0500		93.3	85-115	8.93	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200163 - EPA 245.1/7470										
Blank (B200163-BLK1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	ND	0.0002	mg/L							
LCS (B200163-BS1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0056	0.0002	mg/L	0.00500		112	85-115			
LCS Dup (B200163-BSD1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0048	0.0002	mg/L	0.00500		96.0	85-115	15.3	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:41

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

GREEN GAL Analytical Laboratories
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75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC
Address: 6473 COUNTY ROAD 120
City: HESPERUS State: CO Zip: 81326
Phone #: 970 385 4528
Contact Person: TOM BIRD / TBIRD@GCC.COM
Email Report to: LANDON BECK
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIC.COM
Sampler Name (Print): MARCUS BENALLY & MICHAEL C. MCFARLAND

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

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE
2002-108-01	MW-1-A	2-12-20	0932	✓							1	1		4			X
-02	MW-1-C	2-12-20	0854	✓							1	1		4			X
-03	MW-98	2-12-20	0955	✓							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:
Michael McFarland	2-12-2020	1332	
	2-12-2020	1545	

ADDITIONAL REMARKS:

Report to State? (Circle) Yes No

#1 cnlr

Temperature at receipt: 2.6 | 2.7 C

CHECKED BY

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

Project Information

Printed: 02/12/2020 3:55 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

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27 February 2020

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

RE: Methane Gas

Enclosed are the results of analyses for samples received by the laboratory on 02/24/20 15:12. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

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.

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GCC Energy, LLC	Project: Methane Gas	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/27/20 17:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-3-C	2002190-01	Air	02/24/20 14:20	02/24/20 15:12	

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GCC Energy, LLC	Project: Methane Gas	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/27/20 17:10

MW-3-C

2002190-01 (Air)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Subcontracted -- **SunStar Laboratories, Inc.**									
Methane by GC									
Methane	**520000000**	330000	28000	ug/m³ Air	100	02/26/20 11:10	SUN-GC-008		TI

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GCC Energy, LLC	Project: Methane Gas	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/27/20 17:10

Methane by GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022634 - EPA 5030 GC										
Blank (0022634-BLK1)				Prepared & Analyzed: 02/26/20						
Methane	ND	3300	ug/m³ Air							
LCS (0022634-BS1)				Prepared & Analyzed: 02/26/20						
Methane	695000	3300	ug/m³ Air	656000		106	75-125			
Duplicate (0022634-DUP1)			**Source: 2002190-01**	Prepared & Analyzed: 02/26/20						
Methane	529000000	330000	ug/m³ Air		519000000			1.83	20	

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

FORM-006
COC - Revision 6.0

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Company or Client: GCC Energy LLC
Address: 6473 CR 120
City: Hesperus **State:** CO **Zip:** 81326
Phone #: 970 385 4528
Contact Person: Tom Bird
Email Report to: TBIRD@GCC.com; LBECK@resourcehydrogeologic.com
Project Name(optional):
Sampler Name (Print): Landon Beck

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

ANALYSIS REQUEST

SUN-GC-008 (methane in air)

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one)	# of containers
2002-190-01	MW-3-C	2/24/20	1420	OTHER: Gas	2 Other: Tedlar bag

Matrix: GROUNDWATER; SURFACEWATER; WASTEWATER; PRODUCEDWATER; SOIL; DRINKING WATER; OTHER: Gas

# of containers: No preservation (general); HNO_3; HCl; H_2SO_4; Other:; 2 Other: Tedlar bag

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:
	Date: 2/24/20 Time: 1512	Dublin Zufelt
Relinquished By:	Date: / Time:	Received By:
Relinquished By:	Date: / Time:	Received By:
Relinquished By:	Date: / Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle) Yes (No)

#1

21.8/21.9°C Temperature at receipt:

DZ CHECKED BY

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

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26 March 2020

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 03/13/20 16:48.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-3-C	2003112-01	Water	03/13/20 14:50	03/13/20 16:48	

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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	03/26/20 12:57

MW-3-C

2003112-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**2000**	10.0		mg/L	10	03/26/20 09:00	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	**160**	10.0		mg/L	10	03/26/20 09:00	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	03/26/20 09:00	2320 B		VJW
Alkalinity, Total as CaCO3*	**2160**	10.0	7.16	mg/L	10	03/26/20 09:00	2320 B		VJW
Ammonia as N	**0.567**	0.100	0.0251	mg NH3-N/L	1	03/23/20 15:18	EPA350.1		LLG
Chloride*	**549**	25.0	2.21	mg/L	25	03/20/20 13:09	EPA300.0		AES
Fluoride*	**3.61**	0.500	0.0486	mg/L	5	03/20/20 12:48	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	03/19/20 15:37	EPA353.2		LLG
pH*	**7.98**			pH Units	1	03/13/20 16:55	EPA150.1		FGH
Total Dissolved Solids*	**3220**	10.0		mg/L	1	03/18/20 10:45	EPA160.1		VJW
Sulfate*	<5.00	5.00	0.762	mg/L	5	03/20/20 12:48	EPA300.0		AES
Total Organic Carbon*	**81.9**	5.00	1.35	mg/L	10	03/16/20 22:13	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.500	0.500	0.266	mg/L	10	03/20/20 15:20	EPA200.7		AES
Calcium*	**4.26**	1.00	0.166	mg/L	10	03/20/20 15:20	EPA200.7		AES
Hardness as CaCO3	**18.3**	6.62	1.38	mg/L	10	03/20/20 15:20	2340 B		AES
Iron*	<0.500	0.500	0.184	mg/L	10	03/20/20 15:20	EPA200.7		AES
Magnesium*	**1.86**	1.00	0.235	mg/L	10	03/20/20 15:20	EPA200.7		AES
Potassium*	<10.0	10.0	1.30	mg/L	10	03/20/20 15:20	EPA200.7		AES
Silica (Si02)	<10.7	10.7	0.354	mg/L	10	03/20/20 15:20	Calculation		AES
Silicon	<5.00	5.00	0.166	mg/L	10	03/20/20 15:20	EPA200.7		AES
Sodium*	**1280**	10.0	1.01	mg/L	10	03/20/20 15:20	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0087**	0.0025	0.0005	mg/L	5	03/24/20 11:26	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0004	mg/L	5	03/24/20 11:26	EPA200.8		AES
Copper*	**0.0069**	0.0025	0.0011	mg/L	5	03/24/20 11:26	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0006	mg/L	5	03/24/20 11:26	EPA200.8		AES
Manganese*	**0.0245**	0.0100	0.0006	mg/L	5	03/24/20 11:26	EPA200.8		AES
Molybdenum*	**0.0082**	0.0025	0.0006	mg/L	5	03/24/20 11:26	EPA200.8		AES
Selenium*	**0.0125**	0.0050	0.0027	mg/L	5	03/24/20 11:26	EPA200.8		AES
Uranium	**0.0045**	0.0025	0.0010	mg/L	5	03/24/20 11:26	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0016	mg/L	5	03/24/20 11:26	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

MW-3-C

2003112-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	03/25/20 08:55	EPA245.1		LLG
Cation/Anion Balance	**-2.37**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200405 - General Prep - Wet Chem										
Blank (B200405-BLK1)			Prepared & Analyzed: 03/16/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200405-BS1)			Prepared & Analyzed: 03/16/20							
Total Organic Carbon	9.89	0.500	mg/L	10.0		98.9	85-115			
LCS Dup (B200405-BSD1)			Prepared & Analyzed: 03/16/20							
Total Organic Carbon	9.90	0.500	mg/L	10.0		99.0	85-115	0.0909	20	
Batch B200408 - General Prep - Wet Chem										
Blank (B200408-BLK1)			Prepared: 03/16/20 Analyzed: 03/17/20							
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 (B200408-BS1)			Prepared: 03/16/20 Analyzed: 03/17/20							
Alkalinity, Bicarbonate as CaCO3	92.0	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	92.0	10.0	mg/L	100		92.0	85-115			
LCS Dup (B200408-BSD1)			Prepared: 03/16/20 Analyzed: 03/17/20							
Alkalinity, Bicarbonate as CaCO3	98.0	10.0	mg/L				85-115	6.32	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	98.0	10.0	mg/L	100		98.0	85-115	6.32	20	
Batch B200419 - General Prep - Wet Chem										
Blank (B200419-BLK1)			Prepared & Analyzed: 03/18/20							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200419-DUP1)			**Source: 2003083-01** Prepared & Analyzed: 03/18/20							
Total Dissolved Solids	430	10.0	mg/L		425			1.18	20	
Reference (B200419-SRM1)			Prepared & Analyzed: 03/18/20							
Total Dissolved Solids	575	10.0	mg/L	600		95.8	85-115			
Batch B200425 - General Prep - Wet Chem										
Blank (B200425-BLK1)			Prepared: 03/18/20 Analyzed: 03/19/20							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200425-BS1)			Prepared: 03/18/20 Analyzed: 03/19/20							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200425 - General Prep - Wet Chem (Continued)										
LCS Dup (B200425-BSD1)			Prepared: 03/18/20 Analyzed: 03/19/20							
Nitrate/Nitrite as N	1.07	0.020	mg/L as N	1.00		107	90-110	2.26	20	
Batch B200433 - General Prep - Wet Chem										
Blank (B200433-BLK1)			Prepared: 03/19/20 Analyzed: 03/23/20							
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B200433-BS1)			Prepared: 03/19/20 Analyzed: 03/23/20							
Ammonia as N	2.63	0.100	mg NH3-N/L	2.50		105	90-110			
LCS Dup (B200433-BSD1)			Prepared: 03/19/20 Analyzed: 03/23/20							
Ammonia as N	2.68	0.100	mg NH3-N/L	2.50		107	90-110	1.73	20	
Batch B200438 - General Prep - Wet Chem										
Blank (B200438-BLK1)			Prepared & Analyzed: 03/20/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200438-BS1)			Prepared & Analyzed: 03/20/20							
Chloride	23.7	1.00	mg/L	25.0		94.9	90-110			
Fluoride	2.53	0.100	mg/L	2.50		101	90-110			
Sulfate	23.8	1.00	mg/L	25.0		95.3	90-110			
LCS Dup (B200438-BSD1)			Prepared & Analyzed: 03/20/20							
Chloride	24.0	1.00	mg/L	25.0		96.0	90-110	1.17	20	
Fluoride	2.57	0.100	mg/L	2.50		103	90-110	1.49	20	
Sulfate	24.1	1.00	mg/L	25.0		96.6	90-110	1.30	20	
Batch B200444 - General Prep - Wet Chem										
Duplicate (B200444-DUP1)			**Source: 2003112-01** Prepared & Analyzed: 03/13/20							
pH	8.02		pH Units		7.98			0.500	20	
Reference (B200444-SRM1)			Prepared & Analyzed: 03/13/20							
pH	6.98		pH Units	7.00		99.7	98.5-101.4			

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200413 - Diss. 200.7/200.8										
Blank (B200413-BLK1)				Prepared: 03/17/20 Analyzed: 03/20/20						
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 (B200413-BS1)				Prepared: 03/17/20 Analyzed: 03/20/20						
Aluminum	4.93	0.050	mg/L	5.00		98.6	85-115			
Calcium	5.00	0.100	mg/L	5.00		99.9	85-115			
Iron	4.75	0.050	mg/L	5.00		95.1	85-115			
Magnesium	25.1	0.100	mg/L	25.0		100	85-115			
Potassium	10.2	1.00	mg/L	10.0		102	85-115			
Silicon	4.99	0.500	mg/L	5.00		99.9	85-115			
Sodium	4.18	1.00	mg/L	4.05		103	85-115			
LCS Dup (B200413-BSD1)				Prepared: 03/17/20 Analyzed: 03/20/20						
Aluminum	4.95	0.050	mg/L	5.00		99.0	85-115	0.455	20	
Calcium	5.01	0.100	mg/L	5.00		100	85-115	0.261	20	
Iron	4.74	0.050	mg/L	5.00		94.7	85-115	0.357	20	
Magnesium	25.1	0.100	mg/L	25.0		100	85-115	0.0380	20	
Potassium	10.3	1.00	mg/L	10.0		103	85-115	1.08	20	
Silicon	4.98	0.500	mg/L	5.00		99.5	85-115	0.387	20	
Sodium	4.18	1.00	mg/L	4.05		103	85-115	0.107	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200422 - Diss. 200.7/200.8										
Blank (B200422-BLK1)				Prepared: 03/18/20 Analyzed: 03/24/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	0.0011	0.0005	mg/L							B3
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200422-BS1)				Prepared: 03/18/20 Analyzed: 03/24/20						
Arsenic	0.0466	0.0005	mg/L	0.0500		93.2	85-115			
Cadmium	0.0501	0.0001	mg/L	0.0500		100	85-115			
Copper	0.0492	0.0005	mg/L	0.0500		98.3	85-115			
Lead	0.0480	0.0005	mg/L	0.0500		96.0	85-115			
Manganese	0.0486	0.0005	mg/L	0.0500		97.3	85-115			
Molybdenum	0.0476	0.0005	mg/L	0.0500		95.1	85-115			
Selenium	0.235	0.0010	mg/L	0.250		94.0	85-115			
Uranium	0.0487	0.0005	mg/L	0.0500		97.4	85-115			
Zinc	0.0515	0.0020	mg/L	0.0500		103	85-115			
LCS Dup (B200422-BSD1)				Prepared: 03/18/20 Analyzed: 03/24/20						
Arsenic	0.0452	0.0005	mg/L	0.0500		90.5	85-115	3.02	20	
Cadmium	0.0482	0.0001	mg/L	0.0500		96.4	85-115	3.85	20	
Copper	0.0473	0.0005	mg/L	0.0500		94.5	85-115	3.94	20	
Lead	0.0474	0.0005	mg/L	0.0500		94.8	85-115	1.31	20	
Manganese	0.0477	0.0005	mg/L	0.0500		95.4	85-115	1.96	20	
Molybdenum	0.0476	0.0005	mg/L	0.0500		95.2	85-115	0.0938	20	
Selenium	0.235	0.0010	mg/L	0.250		93.9	85-115	0.139	20	
Uranium	0.0484	0.0005	mg/L	0.0500		96.7	85-115	0.713	20	
Zinc	0.0467	0.0020	mg/L	0.0500		93.4	85-115	9.88	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200453 - EPA 245.1/7470										
Blank (B200453-BLK1)				Prepared: 03/23/20 Analyzed: 03/25/20						
Mercury	ND	0.0002	mg/L							
LCS (B200453-BS1)				Prepared: 03/23/20 Analyzed: 03/25/20						
Mercury	0.0054	0.0002	mg/L	0.00500		107	85-115			
LCS Dup (B200453-BSD1)				Prepared: 03/23/20 Analyzed: 03/25/20						
Mercury	0.0054	0.0002	mg/L	0.00500		108	85-115	0.279	20	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/26/20 12:57

Notes and Definitions

B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
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

GREEN Analytical Laboratories

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jenna.emerick@greenanalytical.com or
dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client:	GCC Energy LLC
Address:	6473 CR 120
City:	Hesperus **State:** CO **Zip:** 81326
Phone #:	970 385 4528
Contact Person:	Tom Bird
Email Report to:	TBIRD@gcc.com; LBECK@resourcehydrogeologic.com
Project Name(optional):	
Sampler Name (Print):	London Beck

Bill to (if different):

P.O. #:	
Company:	SME
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Email:	

ANALYSIS REQUEST

GCC Gw Baseline

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one) GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	GCC Gw Baseline
2003-112-01	MW-3-C	3/13/20	1450	X							1	1		3			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:~~ 3/13/20 **Time:** 1648	Received By: Dublin Zufelt
Relinquished By:	Date: Time:	Received By:
Relinquished By:	Date: Time:	Received By:
Relinquished By:	Date: Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle) Yes No

#1 On Ice

3.7/3.8 °C Temperature at receipt:

CHECKED BY DZ

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

Project Information

Printed: 03/13/2020 4:53 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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	

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04 March 2020

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

RE: TOC, BTEX, TPH ext.

Enclosed are the results of analyses for samples received by the laboratory on 02/20/20 16:43. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

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.

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GCC Energy, LLC	Project: TOC, BTEX, TPH ext.	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 08:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-3-C-EB	2002179-01	Water	02/20/20 09:30	02/20/20 16:43	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: TOC, BTEX, TPH ext.	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 08:36

MW-3-C-EB

2002179-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**0.746**	0.500	0.135	mg/L	1	03/03/20 00:22	5310C		LLG
Subcontracted -- **Cardinal Laboratories**									
Petroleum Hydrocarbons by GC FID									
GRO C6-C10*	<1.00	1.00	0.123	mg/L	0.1	02/27/20 18:50	8015B		CK
DRO >C10-C28*	<1.00	1.00	0.228	mg/L	0.1	02/27/20 18:50	8015B		CK
EXT DRO >C28-C36	<1.00	1.00	0.228	mg/L	0.1	02/27/20 18:50	8015B		CK
Surrogate: 1-Chlorooctane			*85.6 %*	*34.5-148*		*02/27/20 18:50*	*8015B*		CK
Surrogate: 1-Chlorooctadecane			*89.4 %*	*46.4-149*		*02/27/20 18:50*	*8015B*		CK
Volatile Organic Compounds by EPA Method 8260B									
Benzene*	<0.0005	0.0005	0.0001	mg/L	1	02/29/20 15:34	8260B		CK
Toluene*	<0.0005	0.0005	0.0001	mg/L	1	02/29/20 15:34	8260B		CK
Ethylbenzene*	<0.0005	0.0005	0.00007	mg/L	1	02/29/20 15:34	8260B		CK
Total Xylenes*	<0.002	0.002	0.0003	mg/L	1	02/29/20 15:34	8260B		CK
Total BTEX	<0.003	0.003	0.0004	mg/L	1	02/29/20 15:34	8260B		CK
Surrogate: Dibromofluoromethane			*103 %*	*89.2-112*		*02/29/20 15:34*	*8260B*		CK
Surrogate: Toluene-d8			*101 %*	*92-106*		*02/29/20 15:34*	*8260B*		CK
Surrogate: 4-Bromofluorobenzene			*93.7 %*	*80.4-124*		*02/29/20 15:34*	*8260B*		CK

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: TOC, BTEX, TPH ext.	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 08:36

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200283 - General Prep - Wet Chem										
Blank (B200283-BLK1)			Prepared & Analyzed: 03/02/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200283-BS1)			Prepared & Analyzed: 03/02/20							
Total Organic Carbon	10.0	0.500	mg/L	10.0		100	85-115			
LCS Dup (B200283-BSD1)			Prepared & Analyzed: 03/03/20							
Total Organic Carbon	10.0	0.500	mg/L	10.0		100	85-115	0.0997	20	

Petroleum Hydrocarbons by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022408 - General Prep - Organics										
Blank (0022408-BLK1)			Prepared: 02/24/20 Analyzed: 02/27/20							
Surrogate: 1-Chlorooctadecane	*4.30*		mg/L	*5.00*		*85.9*	*46.4-149*			
Surrogate: 1-Chlorooctane	*3.99*		mg/L	*5.00*		*79.9*	*34.5-148*			
DRO >C10-C28	ND	1.00	mg/L							
EXT DRO >C28-C36	ND	1.00	mg/L							
GRO C6-C10	ND	1.00	mg/L							
LCS (0022408-BS1)			Prepared: 02/24/20 Analyzed: 02/27/20							
Surrogate: 1-Chlorooctadecane	*4.85*		mg/L	*5.00*		*97.0*	*46.4-149*			
Surrogate: 1-Chlorooctane	*4.64*		mg/L	*5.00*		*92.8*	*34.5-148*			
DRO >C10-C28	48.9	1.00	mg/L	50.0		97.8	81.3-121			
GRO C6-C10	44.7	1.00	mg/L	50.0		89.4	73.2-116			
LCS Dup (0022408-BSD1)			Prepared: 02/24/20 Analyzed: 02/27/20							
Surrogate: 1-Chlorooctadecane	*4.80*		mg/L	*5.00*		*96.0*	*46.4-149*			
Surrogate: 1-Chlorooctane	*4.86*		mg/L	*5.00*		*97.2*	*34.5-148*			
DRO >C10-C28	50.1	1.00	mg/L	50.0		100	81.3-121	2.49	9.19	
GRO C6-C10	47.5	1.00	mg/L	50.0		95.1	73.2-116	6.14	4.68	QR-02

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: TOC, BTEX, TPH ext.	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 08:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022517 - Volatiles										
Blank (0022517-BLK1)				Prepared: 02/25/20 Analyzed: 02/28/20						
Surrogate: 4-Bromofluorobenzene	*0.0243*		mg/L	*0.0250*		*97.3*	*80.4-124*			
Benzene	ND	0.0005	mg/L							
Surrogate: Dibromofluoromethane	*0.0256*		mg/L	*0.0250*		*103*	*89.2-112*			
Ethylbenzene	ND	0.0005	mg/L							
Toluene	ND	0.0005	mg/L							
Surrogate: Toluene-d8	*0.0259*		mg/L	*0.0250*		*104*	*92-106*			
Total BTEX	ND	0.003	mg/L							
Total Xylenes	ND	0.002	mg/L							
LCS (0022517-BS1)				Prepared: 02/25/20 Analyzed: 02/28/20						
Surrogate: 4-Bromofluorobenzene	*0.0257*		mg/L	*0.0250*		*103*	*80.4-124*			
Benzene	0.019	0.0005	mg/L	0.0200		92.8	88.4-115			
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.0250*		*102*	*89.2-112*			
Ethylbenzene	0.021	0.0005	mg/L	0.0200		103	90.7-117			
m+p - Xylene	0.043	0.001	mg/L	0.0400		109	91.6-120			
o-Xylene	0.021	0.0005	mg/L	0.0200		106	89-117			
Toluene	0.020	0.0005	mg/L	0.0200		97.6	89.3-114			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.0250*		*99.5*	*92-106*			
Total Xylenes	0.065	0.002	mg/L	0.0600		108	91.3-119			
LCS Dup (0022517-BSD1)				Prepared: 02/25/20 Analyzed: 02/28/20						
Surrogate: 4-Bromofluorobenzene	*0.0255*		mg/L	*0.0250*		*102*	*80.4-124*			
Benzene	0.018	0.0005	mg/L	0.0200		89.4	88.4-115	3.68	4.14	
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.0250*		*101*	*89.2-112*			
Ethylbenzene	0.019	0.0005	mg/L	0.0200		97.0	90.7-117	6.05	4.95	QR-02
m+p - Xylene	0.041	0.001	mg/L	0.0400		102	91.6-120	6.75	5.81	QR-02
o-Xylene	0.020	0.0005	mg/L	0.0200		102	89-117	4.13	6.32	
Toluene	0.018	0.0005	mg/L	0.0200		91.1	89.3-114	6.84	5.73	QR-02
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.0250*		*99.7*	*92-106*			
Total Xylenes	0.061	0.002	mg/L	0.0600		102	91.3-119	5.88	5.84	QR-02

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: TOC, BTEX, TPH ext.	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 08:36

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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(If Applicable):	GCC Energy LLC
Contact Person:	Tom Bird
Address:	6473 CR 120
City:	Hesperus **State:** CO **Zip:** 81326
Phone #:	970 385 4528
Email:	TBIRD@GCC.com; LBECK@resourcehydrogeologic.com
Project Name(optional):	
Project Number(optional):	
Sampler Name (Print):	Landon Beck

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

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER: eq blank	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: TOC	BTEX 8021	TPH 8015
2002-179-01	MW-3-C-EB	2/20/20	0930							X			5	3			X	X	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:** 2/20/20 **Time:** 1643	Received By:
Relinquished By:	Date: Time:	Received By:
Relinquished By:	Date: Time:	Received By:
Delivered By: (Circle One) Sampler - UPS - FedEx - Kangaroo - Other:	Temperature at reciept: 1.8/1.9°C	CHECKED BY: DZ

ADDITIONAL REMARKS: #1 On Ice

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.

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14 February 2020

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 02/04/20 15:55.
If you need any further assistance, please feel free to contact me.

Sincerely,

Jenna Emerick

Jenna Marie Emerick For 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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-3-MI	2002033-01	Water	02/04/20 11:20	02/04/20 15:55	
MW-3-A	2002033-02	Water	02/04/20 12:08	02/04/20 15:55	
MW-99-A	2002033-03	Water	02/04/20 12:38	02/04/20 15:55	
MW-4-C	2002033-04	Water	02/04/20 13:51	02/04/20 15:55	

Green Analytical Laboratories

Jenna Emerick

Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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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	02/14/20 14:00

MW-3-MI

2002033-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**645**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**60.0**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**705**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**9.21**	2.00	0.177	mg/L	2	02/07/20 18:50	EPA300.0		AES
Fluoride*	**1.13**	0.200	0.0194	mg/L	2	02/07/20 18:50	EPA300.0		AES
Nitrate/Nitrite as N*	**0.034**	0.020	0.006	mg/L as N	1	02/11/20 14:00	EPA353.2		LLG
pH*	**8.61**			pH Units	1	02/05/20 09:00	EPA150.1		FGH
Total Dissolved Solids*	**1130**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**227**	10.0	1.52	mg/L	10	02/07/20 19:10	EPA300.0		AES
Total Organic Carbon*	**5.58**	0.500	0.135	mg/L	1	02/12/20 15:46	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/12/20 14:35	EPA200.7		AES
Calcium*	**1.63**	0.200	0.033	mg/L	2	02/12/20 14:35	EPA200.7		AES
Hardness as CaCO3	**6.50**	1.32	0.276	mg/L	2	02/12/20 14:35	2340 B		AES
Iron*	<0.100	0.100	0.037	mg/L	2	02/12/20 14:35	EPA200.7		AES
Magnesium*	**0.591**	0.200	0.047	mg/L	2	02/12/20 14:35	EPA200.7		AES
Potassium*	<2.00	2.00	0.260	mg/L	2	02/12/20 14:35	EPA200.7		AES
Silica (Si02)	**8.80**	2.14	0.0708	mg/L	2	02/12/20 14:35	Calculation		AES
Silicon	**4.11**	1.00	0.033	mg/L	2	02/12/20 14:35	EPA200.7		AES
Sodium*	**437**	2.00	0.201	mg/L	2	02/12/20 14:35	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0093**	0.0010	0.0002	mg/L	2	02/10/20 14:15	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 14:15	EPA200.8		AES
Copper*	**0.0024**	0.0010	0.0004	mg/L	2	02/10/20 14:15	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 14:15	EPA200.8		AES
Manganese*	**0.0095**	0.0010	0.0002	mg/L	2	02/10/20 14:15	EPA200.8		AES
Molybdenum*	**0.0204**	0.0010	0.0002	mg/L	2	02/10/20 14:15	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 14:15	EPA200.8		AES
Uranium	**0.0063**	0.0010	0.0004	mg/L	2	02/10/20 14:15	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 14:15	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**.09**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

MW-3-A

2002033-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**460**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**460**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**13.9**	2.00	0.177	mg/L	2	02/07/20 19:29	EPA300.0		AES
Fluoride*	**0.370**	0.200	0.0194	mg/L	2	02/07/20 19:29	EPA300.0		AES
Nitrate/Nitrite as N*	**0.024**	0.020	0.006	mg/L as N	1	02/11/20 14:01	EPA353.2		LLG
pH*	**8.09**			pH Units	1	02/05/20 09:00	EPA150.1		FGH
Total Dissolved Solids*	**1500**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**637**	20.0	3.05	mg/L	20	02/07/20 19:48	EPA300.0		AES
Total Organic Carbon*	**3.42**	0.500	0.135	mg/L	1	02/12/20 16:35	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.150	0.150	0.080	mg/L	3	02/12/20 14:40	EPA200.7		AES
Calcium*	**3.14**	0.300	0.050	mg/L	3	02/12/20 14:40	EPA200.7		AES
Hardness as CaCO3	**10.8**	1.98	0.414	mg/L	3	02/12/20 14:40	2340 B		AES
Iron*	<0.150	0.150	0.055	mg/L	3	02/12/20 14:40	EPA200.7		AES
Magnesium*	**0.723**	0.300	0.070	mg/L	3	02/12/20 14:40	EPA200.7		AES
Potassium*	<3.00	3.00	0.390	mg/L	3	02/12/20 14:40	EPA200.7		AES
Silica (Si02)	**11.6**	3.21	0.106	mg/L	3	02/12/20 14:40	Calculation		AES
Silicon	**5.43**	1.50	0.050	mg/L	3	02/12/20 14:40	EPA200.7		AES
Sodium*	**520**	3.00	0.302	mg/L	3	02/12/20 14:40	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 14:19	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 14:19	EPA200.8		AES
Copper*	**0.0031**	0.0010	0.0004	mg/L	2	02/10/20 14:19	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 14:19	EPA200.8		AES
Manganese*	**0.0139**	0.0010	0.0002	mg/L	2	02/10/20 14:19	EPA200.8		AES
Molybdenum*	**0.0020**	0.0010	0.0002	mg/L	2	02/10/20 14:19	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 14:19	EPA200.8		AES
Uranium	**0.0010**	0.0010	0.0004	mg/L	2	02/10/20 14:19	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 14:19	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG

Cation/Anion Balance .

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

MW-99-A

2002033-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**435**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**40.0**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**475**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**13.8**	2.00	0.177	mg/L	2	02/07/20 20:08	EPA300.0		AES
Fluoride*	**0.370**	0.200	0.0194	mg/L	2	02/07/20 20:08	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/11/20 14:02	EPA353.2		LLG
pH*	**8.25**			pH Units	1	02/05/20 09:00	EPA150.1		FGH
Total Dissolved Solids*	**1490**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**629**	20.0	3.05	mg/L	20	02/10/20 10:32	EPA300.0		AES
Total Organic Carbon*	**3.60**	0.500	0.135	mg/L	1	02/12/20 16:56	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.150	0.150	0.080	mg/L	3	02/12/20 14:45	EPA200.7		AES
Calcium*	**3.09**	0.300	0.050	mg/L	3	02/12/20 14:45	EPA200.7		AES
Hardness as CaCO3	**10.5**	1.98	0.414	mg/L	3	02/12/20 14:45	2340 B		AES
Iron*	<0.150	0.150	0.055	mg/L	3	02/12/20 14:45	EPA200.7		AES
Magnesium*	**0.685**	0.300	0.070	mg/L	3	02/12/20 14:45	EPA200.7		AES
Potassium*	<3.00	3.00	0.390	mg/L	3	02/12/20 14:45	EPA200.7		AES
Silica (Si02)	**11.6**	3.21	0.106	mg/L	3	02/12/20 14:45	Calculation		AES
Silicon	**5.44**	1.50	0.050	mg/L	3	02/12/20 14:45	EPA200.7		AES
Sodium*	**521**	3.00	0.302	mg/L	3	02/12/20 14:45	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 14:22	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 14:22	EPA200.8		AES
Copper*	**0.0037**	0.0010	0.0004	mg/L	2	02/10/20 14:22	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 14:22	EPA200.8		AES
Manganese*	**0.0162**	0.0010	0.0002	mg/L	2	02/10/20 14:22	EPA200.8		AES
Molybdenum*	**0.0022**	0.0010	0.0002	mg/L	2	02/10/20 14:22	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 14:22	EPA200.8		AES
Uranium	**0.0013**	0.0010	0.0004	mg/L	2	02/10/20 14:22	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 14:22	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**-.2**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

MW-4-C

2002033-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**2420**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**60.0**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**2480**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**528**	25.0	2.21	mg/L	25	02/07/20 21:48	EPA300.0		AES
Fluoride*	**2.41**	0.500	0.0486	mg/L	5	02/07/20 21:28	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/11/20 14:03	EPA353.2		LLG
pH*	**7.95**			pH Units	1	02/05/20 09:00	EPA150.1		FGH
Total Dissolved Solids*	**3580**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	<5.00	5.00	0.762	mg/L	5	02/07/20 21:28	EPA300.0		AES
Total Organic Carbon*	**2.23**	0.500	0.135	mg/L	1	02/12/20 17:20	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.133	mg/L	5	02/12/20 14:50	EPA200.7		AES
Calcium*	**5.57**	0.500	0.083	mg/L	5	02/12/20 14:49	EPA200.7		AES
Hardness as CaCO3	**24.0**	3.31	0.690	mg/L	5	02/12/20 14:50	2340 B		AES
Iron*	**0.591**	0.250	0.092	mg/L	5	02/12/20 14:50	EPA200.7		AES
Magnesium*	**2.44**	0.500	0.117	mg/L	5	02/12/20 14:50	EPA200.7		AES
Potassium*	<5.00	5.00	0.651	mg/L	5	02/12/20 14:49	EPA200.7		AES
Silica (Si02)	**9.88**	5.35	0.177	mg/L	5	02/12/20 14:50	Calculation		AES
Silicon	**4.62**	2.50	0.083	mg/L	5	02/12/20 14:50	EPA200.7		AES
Sodium*	**1440**	5.00	0.503	mg/L	5	02/12/20 14:49	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0203**	0.0025	0.0005	mg/L	5	02/10/20 14:26	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0004	mg/L	5	02/10/20 14:26	EPA200.8		AES
Copper*	**0.0111**	0.0025	0.0011	mg/L	5	02/10/20 14:26	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0006	mg/L	5	02/10/20 14:26	EPA200.8		AES
Manganese*	**0.0209**	0.0025	0.0006	mg/L	5	02/10/20 14:26	EPA200.8		AES
Molybdenum*	**0.0045**	0.0025	0.0006	mg/L	5	02/10/20 14:26	EPA200.8		AES
Selenium*	**0.0140**	0.0050	0.0027	mg/L	5	02/10/20 14:26	EPA200.8		AES
Uranium	**0.0063**	0.0025	0.0010	mg/L	5	02/10/20 14:26	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0016	mg/L	5	02/10/20 14:26	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**-1.06**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200120 - General Prep - Wet Chem										
Duplicate (B200120-DUP1)		**Source: 2002032-01**		Prepared & Analyzed: 02/05/20						
pH	7.25		pH Units		7.21			0.553	20	
Reference (B200120-SRM1)				Prepared & Analyzed: 02/05/20						
pH	7.03		pH Units	7.00		100	98.5-101.4			
Batch B200123 - General Prep - Wet Chem										
Blank (B200123-BLK1)				Prepared: 02/07/20 Analyzed: 02/10/20						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200123-BS1)				Prepared & Analyzed: 02/07/20						
Chloride	23.5	1.00	mg/L	25.0		93.9	90-110			
Fluoride	2.45	0.100	mg/L	2.50		97.9	90-110			
Sulfate	24.0	1.00	mg/L	25.0		96.2	90-110			
LCS Dup (B200123-BSD1)				Prepared & Analyzed: 02/07/20						
Chloride	23.5	1.00	mg/L	25.0		94.0	90-110	0.0426	20	
Fluoride	2.45	0.100	mg/L	2.50		98.2	90-110	0.245	20	
Sulfate	24.0	1.00	mg/L	25.0		96.0	90-110	0.191	20	
Batch B200125 - General Prep - Wet Chem										
Blank (B200125-BLK1)				Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200125-DUP1)		**Source: 2002014-01**		Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	575	10.0	mg/L		575			0.00	20	
Reference (B200125-SRM1)				Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	570	10.0	mg/L	600		95.0	85-115			
Batch B200129 - General Prep - Wet Chem										
Blank (B200129-BLK1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200129-BS1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110			
LCS Dup (B200129-BSD1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.395	20	
Batch B200134 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200134 - General Prep - Wet Chem (Continued)										
Blank (B200134-BLK1)			Prepared & Analyzed: 02/10/20							
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 (B200134-BS1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	97.0	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	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B200134-BSD1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	92.0	10.0	mg/L				85-115	5.29	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	92.0	10.0	mg/L	100		92.0	85-115	5.29	20	
Batch B200153 - General Prep - Wet Chem										
Blank (B200153-BLK1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200153-BS1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B200153-BSD1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.0993	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200157 - Diss. 200.7/200.8										
Blank (B200157-BLK1)				Prepared & Analyzed: 02/12/20						
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 (B200157-BS1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.82	0.050	mg/L	5.00		96.4	85-115			
Calcium	4.87	0.100	mg/L	5.00		97.4	85-115			
Iron	4.86	0.050	mg/L	5.00		97.3	85-115			
Magnesium	24.3	0.100	mg/L	25.0		97.3	85-115			
Potassium	10.1	1.00	mg/L	10.0		101	85-115			
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115			
Sodium	3.97	1.00	mg/L	4.05		98.1	85-115			
LCS Dup (B200157-BSD1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.76	0.050	mg/L	5.00		95.3	85-115	1.24	20	
Calcium	4.76	0.100	mg/L	5.00		95.2	85-115	2.28	20	
Iron	4.76	0.050	mg/L	5.00		95.2	85-115	2.20	20	
Magnesium	23.9	0.100	mg/L	25.0		95.8	85-115	1.56	20	
Potassium	9.93	1.00	mg/L	10.0		99.3	85-115	1.43	20	
Silicon	4.75	0.500	mg/L	5.00		95.1	85-115	2.20	20	
Sodium	3.95	1.00	mg/L	4.05		97.4	85-115	0.700	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200132 - Diss. 200.7/200.8										
Blank (B200132-BLK1)				Prepared & Analyzed: 02/10/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200132-BS1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0511	0.0005	mg/L	0.0500		102	85-115			
Cadmium	0.0514	0.0001	mg/L	0.0500		103	85-115			
Copper	0.0495	0.0005	mg/L	0.0500		99.0	85-115			
Lead	0.0509	0.0005	mg/L	0.0500		102	85-115			
Manganese	0.0511	0.0005	mg/L	0.0500		102	85-115			
Molybdenum	0.0468	0.0005	mg/L	0.0500		93.7	85-115			
Selenium	0.264	0.0010	mg/L	0.250		106	85-115			
Uranium	0.0509	0.0005	mg/L	0.0500		102	85-115			
Zinc	0.0533	0.0020	mg/L	0.0500		107	85-115			
LCS Dup (B200132-BSD1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0475	0.0005	mg/L	0.0500		94.9	85-115	7.47	20	
Cadmium	0.0487	0.0001	mg/L	0.0500		97.3	85-115	5.49	20	
Copper	0.0452	0.0005	mg/L	0.0500		90.5	85-115	9.03	20	
Lead	0.0476	0.0005	mg/L	0.0500		95.3	85-115	6.59	20	
Manganese	0.0486	0.0005	mg/L	0.0500		97.2	85-115	4.98	20	
Molybdenum	0.0434	0.0005	mg/L	0.0500		86.7	85-115	7.71	20	
Selenium	0.240	0.0010	mg/L	0.250		96.1	85-115	9.42	20	
Uranium	0.0477	0.0005	mg/L	0.0500		95.3	85-115	6.55	20	
Zinc	0.0482	0.0020	mg/L	0.0500		96.5	85-115	9.92	20	

Green Analytical Laboratories

Jenna Emerick

Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200147 - EPA 245.1/7470										
Blank (B200147-BLK1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	ND	0.0002	mg/L							
LCS (B200147-BS1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115			
LCS Dup (B200147-BSD1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115	0.0384	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/14/20 14:00

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

Jenna Emerick

Jenna Marie Emerick For Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Analytical Laboratories
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service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

Company Name: GCC ENERGY LLC
Project Manager: TOM BIRD
Address: 6473 COUNTY ROAD 120
City: HESPERUS State: CO Zip: 81326
Phone #: 9703854528 Email: TBIRD@GCC.COM
Additional Report To: LANDON BECK
~~Project Name~~: LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Number: GCCE GW BASELINE
Sampler Name (Print): MARCUS BENALLY, MICHAEL MCFARLAND

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
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: GCCE GW BASELINE
2002-033-01	MW-3-M1	2-4-20	1120	X						1	1		4				X
-02	MW-3-A	2-4-20	1208	X						1	1		4				
-03	MW-99-A	2-4-20	1238	X						1	1		4				
-04	MW-4-C	2-4-20	1351	X						1	1		4				

Relinquished By:	Date:	Time:	Received By:
Michael McFarland	2-4-2020	1452	
Relinquished By:	Date: 2-4-2020	Time: 3:55:00 pm	Received By:
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: 5.4 | 5.2 °C

CHECKED BY:

† 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

Printed: 02/04/2020 3:57 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

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17 February 2020

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 02/06/20 16:05.
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.

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-4-A	2002063-01	Water	02/06/20 10:00	02/06/20 16:05	
MW-4-MI	2002063-02	Water	02/06/20 09:10	02/06/20 16:05	
Hay Gulch Ditch Downgradient	2002063-03	Water	02/06/20 12:43	02/06/20 16:05	
Well #2 Downgradient	2002063-04	Water	02/06/20 12:05	02/06/20 16:05	

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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	02/17/20 12:19

MW-4-A

2002063-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**560**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**560**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**8.83**	2.00	0.177	mg/L	2	02/11/20 18:02	EPA300.0		AES
Fluoride*	<0.200	0.200	0.0194	mg/L	2	02/11/20 18:02	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/11/20 14:45	EPA353.2		LLG
pH*	**8.11**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
Total Dissolved Solids*	**1500**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**557**	20.0	3.05	mg/L	20	02/11/20 18:21	EPA300.0		AES
Total Organic Carbon*	**3.10**	0.500	0.135	mg/L	1	02/13/20 10:47	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.150	0.150	0.080	mg/L	3	02/12/20 15:47	EPA200.7		AES
Calcium*	**1.88**	0.300	0.050	mg/L	3	02/12/20 15:47	EPA200.7		AES
Hardness as CaCO3	**8.19**	1.98	0.414	mg/L	3	02/12/20 15:47	2340 B		AES
Iron*	<0.150	0.150	0.055	mg/L	3	02/12/20 15:47	EPA200.7		AES
Magnesium*	**0.850**	0.300	0.070	mg/L	3	02/12/20 15:47	EPA200.7		AES
Potassium*	<3.00	3.00	0.390	mg/L	3	02/12/20 15:47	EPA200.7		AES
Silica (Si02)	**10.3**	3.21	0.106	mg/L	3	02/12/20 15:47	Calculation		AES
Silicon	**4.79**	1.50	0.050	mg/L	3	02/12/20 15:47	EPA200.7		AES
Sodium*	**551**	3.00	0.302	mg/L	3	02/12/20 15:47	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 15:22	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 15:22	EPA200.8		AES
Copper*	**0.0034**	0.0010	0.0004	mg/L	2	02/10/20 15:22	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 15:22	EPA200.8		AES
Manganese*	**0.0033**	0.0010	0.0002	mg/L	2	02/14/20 12:32	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 15:22	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 15:22	EPA200.8		AES
Uranium	<0.0010	0.0010	0.0004	mg/L	2	02/10/20 15:22	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 15:22	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**2.38**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

MW-4-MI

2002063-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**895**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**90.0**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**985**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**5.37**	2.00	0.177	mg/L	2	02/11/20 18:41	EPA300.0		AES
Fluoride*	**5.11**	0.200	0.0194	mg/L	2	02/11/20 18:41	EPA300.0		AES
Nitrate/Nitrite as N*	**0.040**	0.020	0.006	mg/L as N	1	02/11/20 14:46	EPA353.2		LLG
pH*	**8.33**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
Total Dissolved Solids*	**1110**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**24.6**	2.00	0.305	mg/L	2	02/11/20 18:41	EPA300.0		AES
Total Organic Carbon*	**6.63**	0.500	0.135	mg/L	1	02/13/20 11:13	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/13/20 10:52	EPA200.7		AES
Calcium*	**1.21**	0.200	0.033	mg/L	2	02/13/20 10:52	EPA200.7		AES
Hardness as CaCO3	**4.70**	1.32	0.276	mg/L	2	02/13/20 10:52	2340 B		AES
Iron*	<0.100	0.100	0.037	mg/L	2	02/13/20 10:52	EPA200.7		AES
Magnesium*	**0.406**	0.200	0.047	mg/L	2	02/13/20 10:52	EPA200.7		AES
Potassium*	<2.00	2.00	0.260	mg/L	2	02/13/20 10:52	EPA200.7		AES
Silica (Si02)	**8.21**	2.14	0.0708	mg/L	2	02/13/20 10:52	Calculation		AES
Silicon	**3.84**	1.00	0.033	mg/L	2	02/13/20 10:52	EPA200.7		AES
Sodium*	**441**	2.00	0.201	mg/L	2	02/13/20 10:52	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0127**	0.0010	0.0002	mg/L	2	02/10/20 15:36	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 15:36	EPA200.8		AES
Copper*	**0.0028**	0.0010	0.0004	mg/L	2	02/10/20 15:36	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 15:36	EPA200.8		AES
Manganese*	**0.0085**	0.0010	0.0002	mg/L	2	02/10/20 15:36	EPA200.8		AES
Molybdenum*	**0.0096**	0.0010	0.0002	mg/L	2	02/10/20 15:36	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 15:36	EPA200.8		AES
Uranium	**0.0163**	0.0010	0.0004	mg/L	2	02/10/20 15:36	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 15:36	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**-3.3**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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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	02/17/20 12:19

Hay Gulch Ditch Downgradient

2002063-03 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**283**	10.0		mg/L	1	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**14.0**	10.0		mg/L	1	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**297**	10.0	7.16	mg/L	1	02/10/20 14:00	2320 B		VJL
Chloride*	**30.7**	2.00	0.177	mg/L	2	02/11/20 19:00	EPA300.0		AES
Fluoride*	**0.272**	0.200	0.0194	mg/L	2	02/11/20 19:00	EPA300.0		AES
Nitrate/Nitrite as N*	**0.056**	0.020	0.006	mg/L as N	1	02/11/20 14:47	EPA353.2	M5	LLG
Oil & Grease (HEM)	<5.00	5.00	1.16	mg/L	1	02/14/20 08:30	EPA1664 A		VJL
pH*	**7.80**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
SAR	**0.61**			No Unit	1	02/13/20 12:25	Calculation		AES
Total Dissolved Solids*	**555**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Total Suspended Solids*	**4.20**	4.00		mg/L	1	02/07/20 15:05	EPA160.2		VJL
Sulfate*	**143**	4.00	0.610	mg/L	4	02/12/20 10:43	EPA300.0		AES
Total Organic Carbon*	**4.53**	0.500	0.135	mg/L	1	02/13/20 12:06	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/13/20 10:56	EPA200.7		AES
Calcium*	**85.6**	0.100	0.017	mg/L	1	02/13/20 10:56	EPA200.7		AES
Hardness as CaCO3	**416**	0.662	0.138	mg/L	1	02/13/20 10:56	2340 B		AES
Iron*	<0.050	0.050	0.018	mg/L	1	02/13/20 10:56	EPA200.7		AES
Magnesium*	**49.0**	0.100	0.023	mg/L	1	02/13/20 10:56	EPA200.7		AES
Potassium*	**3.81**	1.00	0.130	mg/L	1	02/13/20 10:56	EPA200.7		AES
Silica (Si02)	**12.3**	1.07	0.0354	mg/L	1	02/13/20 10:56	Calculation		AES
Silicon	**5.75**	0.500	0.017	mg/L	1	02/13/20 10:56	EPA200.7		AES
Sodium*	**28.5**	1.00	0.101	mg/L	1	02/13/20 10:56	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0006**	0.0005	0.0001	mg/L	1	02/10/20 15:39	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/10/20 15:39	EPA200.8		AES
Copper*	**0.0006**	0.0005	0.0002	mg/L	1	02/10/20 15:39	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/10/20 15:39	EPA200.8		AES
Manganese*	**0.0286**	0.0005	0.0001	mg/L	1	02/10/20 15:39	EPA200.8		AES
Molybdenum*	**0.0006**	0.0005	0.0001	mg/L	1	02/10/20 15:39	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/10/20 15:39	EPA200.8		AES
Uranium	**0.0006**	0.0005	0.0002	mg/L	1	02/10/20 15:39	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/10/20 15:39	EPA200.8		AES

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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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	02/17/20 12:19

Hay Gulch Ditch Downgradient

2002063-03 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 12:55	EPA245.1		LLG
Cation/Anion Balance	**-.81**								

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

Well #2 Downgradient

2002063-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**324**	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**324**	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	**48.9**	5.00	0.443	mg/L	5	02/11/20 19:20	EPA300.0		AES
Fluoride*	<0.500	0.500	0.0486	mg/L	5	02/11/20 19:20	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/11/20 14:50	EPA353.2		LLG
pH*	**7.20**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
Total Dissolved Solids*	**695**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**199**	5.00	0.762	mg/L	5	02/11/20 19:20	EPA300.0		AES
Total Organic Carbon*	**1.80**	0.500	0.135	mg/L	1	02/13/20 12:22	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/13/20 11:01	EPA200.7		AES
Calcium*	**87.2**	0.100	0.017	mg/L	1	02/13/20 11:01	EPA200.7		AES
Hardness as CaCO3	**540**	0.662	0.138	mg/L	1	02/13/20 11:01	2340 B		AES
Iron*	**0.094**	0.050	0.018	mg/L	1	02/13/20 11:01	EPA200.7		AES
Magnesium*	**78.2**	0.100	0.023	mg/L	1	02/13/20 11:01	EPA200.7		AES
Potassium*	**2.04**	1.00	0.130	mg/L	1	02/13/20 11:01	EPA200.7		AES
Silica (Si02)	**11.2**	1.07	0.0354	mg/L	1	02/13/20 11:01	Calculation		AES
Silicon	**5.22**	0.500	0.017	mg/L	1	02/13/20 11:01	EPA200.7		AES
Sodium*	**23.3**	1.00	0.101	mg/L	1	02/13/20 11:01	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0011**	0.0005	0.0001	mg/L	1	02/10/20 15:43	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/10/20 15:43	EPA200.8		AES
Copper*	<0.0005	0.0005	0.0002	mg/L	1	02/10/20 15:43	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/10/20 15:43	EPA200.8		AES
Manganese*	**0.454**	0.0005	0.0001	mg/L	1	02/10/20 15:43	EPA200.8		AES
Molybdenum*	**0.0021**	0.0005	0.0001	mg/L	1	02/10/20 15:43	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/10/20 15:43	EPA200.8		AES
Uranium	**0.0016**	0.0005	0.0002	mg/L	1	02/10/20 15:43	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/10/20 15:43	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**-.62**								

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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	02/17/20 12:19

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200006 - General Prep - Wet Chem										
Blank (B200006-BLK1)			Prepared & Analyzed: 01/24/20							
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B200006-BS1)			Prepared & Analyzed: 01/24/20							
Oil & Grease (HEM)	37.9	5.00	mg/L	40.0		94.8	85-115			
LCS Dup (B200006-BSD1)			Prepared & Analyzed: 01/24/20							
Oil & Grease (HEM)	37.2	5.00	mg/L	40.0		93.0	85-115	1.86	20	
Batch B200105 - General Prep - Wet Chem										
Blank (B200105-BLK1)			Prepared & Analyzed: 02/07/20							
Total Suspended Solids	ND	4.00	mg/L							
Duplicate (B200105-DUP1)			**Source: 2002017-01**	Prepared & Analyzed: 02/07/20						
Total Suspended Solids	45.0	4.00	mg/L		40.0			11.8	20	
Reference (B200105-SRM1)			Prepared & Analyzed: 02/07/20							
Total Suspended Solids	94.0	4.00	mg/L	100		94.0	85-115			
Batch B200125 - General Prep - Wet Chem										
Blank (B200125-BLK1)			Prepared & Analyzed: 02/07/20							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200125-DUP1)			**Source: 2002014-01**	Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	575	10.0	mg/L		575			0.00	20	
Reference (B200125-SRM1)			Prepared & Analyzed: 02/07/20							
Total Dissolved Solids	570	10.0	mg/L	600		95.0	85-115			
Batch B200130 - General Prep - Wet Chem										
Blank (B200130-BLK1)			Prepared: 02/10/20 Analyzed: 02/11/20							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200130-BS1)			Prepared: 02/10/20 Analyzed: 02/11/20							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B200130-BSD1)			Prepared: 02/10/20 Analyzed: 02/11/20							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110	0.258	20	
Batch B200134 - General Prep - Wet Chem										
Blank (B200134-BLK1)			Prepared & Analyzed: 02/10/20							
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							

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200134 - General Prep - Wet Chem (Continued)										
LCS (B200134-BS1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	97.0	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	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B200134-BSD1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	92.0	10.0	mg/L				85-115	5.29	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	92.0	10.0	mg/L	100		92.0	85-115	5.29	20	
Batch B200135 - General Prep - Wet Chem										
Duplicate (B200135-DUP1)		**Source: 2002045-01**	Prepared & Analyzed: 02/07/20							
pH	6.94		pH Units		6.96			0.288	20	
Reference (B200135-SRM1)			Prepared & Analyzed: 02/07/20							
pH	7.01		pH Units	7.00		100	98.5-101.4			
Batch B200149 - General Prep - Wet Chem										
Blank (B200149-BLK1)			Prepared & Analyzed: 02/11/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200149-BS1)			Prepared & Analyzed: 02/11/20							
Chloride	23.1	1.00	mg/L	25.0		92.5	90-110			
Fluoride	2.47	0.100	mg/L	2.50		98.7	90-110			
Sulfate	24.1	1.00	mg/L	25.0		96.5	90-110			
LCS Dup (B200149-BSD1)			Prepared & Analyzed: 02/11/20							
Chloride	23.2	1.00	mg/L	25.0		92.7	90-110	0.156	20	
Fluoride	2.45	0.100	mg/L	2.50		98.0	90-110	0.732	20	
Sulfate	23.8	1.00	mg/L	25.0		95.0	90-110	1.57	20	
Batch B200153 - General Prep - Wet Chem										
Blank (B200153-BLK1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200153-BS1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B200153-BSD1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.0993	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200166 - General Prep - Wet Chem										
Blank (B200166-BLK1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200166-BS1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	95.0	10.0	mg/L	100		95.0	85-115			
LCS Dup (B200166-BSD1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.11	20	

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200157 - Diss. 200.7/200.8										
Blank (B200157-BLK1)			Prepared & Analyzed: 02/12/20							
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 (B200157-BS1)			Prepared & Analyzed: 02/12/20							
Aluminum	4.82	0.050	mg/L	5.00		96.4	85-115			
Calcium	4.87	0.100	mg/L	5.00		97.4	85-115			
Iron	4.86	0.050	mg/L	5.00		97.3	85-115			
Magnesium	24.3	0.100	mg/L	25.0		97.3	85-115			
Potassium	10.1	1.00	mg/L	10.0		101	85-115			
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115			
Sodium	3.97	1.00	mg/L	4.05		98.1	85-115			
LCS Dup (B200157-BSD1)			Prepared & Analyzed: 02/12/20							
Aluminum	4.76	0.050	mg/L	5.00		95.3	85-115	1.24	20	
Calcium	4.76	0.100	mg/L	5.00		95.2	85-115	2.28	20	
Iron	4.76	0.050	mg/L	5.00		95.2	85-115	2.20	20	
Magnesium	23.9	0.100	mg/L	25.0		95.8	85-115	1.56	20	
Potassium	9.93	1.00	mg/L	10.0		99.3	85-115	1.43	20	
Silicon	4.75	0.500	mg/L	5.00		95.1	85-115	2.20	20	
Sodium	3.95	1.00	mg/L	4.05		97.4	85-115	0.700	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200132 - Diss. 200.7/200.8										
Blank (B200132-BLK1)				Prepared & Analyzed: 02/10/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200132-BS1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0511	0.0005	mg/L	0.0500		102	85-115			
Cadmium	0.0514	0.0001	mg/L	0.0500		103	85-115			
Copper	0.0495	0.0005	mg/L	0.0500		99.0	85-115			
Lead	0.0509	0.0005	mg/L	0.0500		102	85-115			
Manganese	0.0511	0.0005	mg/L	0.0500		102	85-115			
Molybdenum	0.0468	0.0005	mg/L	0.0500		93.7	85-115			
Selenium	0.264	0.0010	mg/L	0.250		106	85-115			
Uranium	0.0509	0.0005	mg/L	0.0500		102	85-115			
Zinc	0.0533	0.0020	mg/L	0.0500		107	85-115			
LCS Dup (B200132-BSD1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0475	0.0005	mg/L	0.0500		94.9	85-115	7.47	20	
Cadmium	0.0487	0.0001	mg/L	0.0500		97.3	85-115	5.49	20	
Copper	0.0452	0.0005	mg/L	0.0500		90.5	85-115	9.03	20	
Lead	0.0476	0.0005	mg/L	0.0500		95.3	85-115	6.59	20	
Manganese	0.0486	0.0005	mg/L	0.0500		97.2	85-115	4.98	20	
Molybdenum	0.0434	0.0005	mg/L	0.0500		86.7	85-115	7.71	20	
Selenium	0.240	0.0010	mg/L	0.250		96.1	85-115	9.42	20	
Uranium	0.0477	0.0005	mg/L	0.0500		95.3	85-115	6.55	20	
Zinc	0.0482	0.0020	mg/L	0.0500		96.5	85-115	9.92	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

Total Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200145 - EPA 245.1/7470										
Blank (B200145-BLK1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	ND	0.0002	mg/L							
LCS (B200145-BS1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0056	0.0002	mg/L	0.00500		112	85-115			
LCS Dup (B200145-BSD1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0054	0.0002	mg/L	0.00500		109	85-115	2.78	20	

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200147 - EPA 245.1/7470										
Blank (B200147-BLK1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	ND	0.0002	mg/L							
LCS (B200147-BS1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115			
LCS Dup (B200147-BSD1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115	0.0384	20	

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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:19

Notes and Definitions

M5	Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
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

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75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 5.0

Company or Client: GCC ENERGY LLC	Bill to (if different):
Address: 6473 COUNTY ROAD 120	P.O. #:
City: HESPERUS **State:** CO **Zip:** 81326	Company:
Phone #: 970 385 4528	Attn:
Contact Person: TOM BIRD / TBIRD@GCC.COM	Address:
Email Report to: LANDON BECK	City:
Project Name(optional): BECK@RESOURCEHYDROGEOLOGIC.COM	State: Zip:
	Phone #:
Sampler Name (Print): Marcus Benally & Michael McFarland	Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one) GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST GW Baseline	SW Baseline							
2002-063-01	MW-4-A	2/6/2020	10:00AM	X							1	1		4			X							
-02	MW-4-MI	2/6/2020	9:10AM	X							1	1		4			X							
-03	HAYGULCH DITCH DOWN GRADIENT	2/6/2020	12:48PM		X						2	1	1	4				X						
-04	WELL #2 DOWNGRADIENT	2/6/2020	12:05PM	X							1	1		4			X							

Relinquished By:	Date: / Time:	Received By:
Mark Bond	2/6/2020 1605	
Relinquished By:	Date: / Time:	Received By:
Relinquished By:	Date: / Time:	Received By:
Relinquished By:	Date: / Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle) Yes No

#1 cooler

4.7/4.5C Temperature at receipt:

CHECKED BY

† 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

Printed: 02/06/2020 4:14 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

Printed: 02/06/2020 4:15 pm

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

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

Project Name: GCC SW Baseline
Project Number: GCC SW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Total by CVAA	pour off from 1 L gon.
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
Oil & Grease	
pH	
Potassium Dissolved by ICP	
SAR	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Solids, Total Suspended (TSS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

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21 February 2020

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 02/12/20 15:45.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-5-C	2002107-01	Water	02/12/20 11:42	02/12/20 15:45	
MW-5-MI	2002107-02	Water	02/12/20 12:11	02/12/20 15:45	

Green Analytical Laboratories

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

MW-5-C

2002107-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**1550**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**1550**	10.0	7.16	mg/L	5	02/13/20 13:00	2320 B		VJL
Chloride*	**6.58**	5.00	0.443	mg/L	5	02/14/20 00:24	EPA300.0		AES
Fluoride*	**1.96**	0.500	0.0486	mg/L	5	02/14/20 00:24	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:27	EPA353.2		LLG
pH*	**7.74**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**2970**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**799**	50.0	7.62	mg/L	50	02/14/20 00:43	EPA300.0		AES
Total Organic Carbon*	**2.70**	0.500	0.135	mg/L	1	02/20/20 15:07	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.133	mg/L	5	02/17/20 12:24	EPA200.7		AES
Calcium*	**7.73**	0.500	0.083	mg/L	5	02/17/20 12:24	EPA200.7		AES
Hardness as CaCO3	**34.8**	3.31	0.690	mg/L	5	02/17/20 12:24	2340 B		AES
Iron*	<0.250	0.250	0.092	mg/L	5	02/17/20 12:24	EPA200.7		AES
Magnesium*	**3.78**	0.500	0.117	mg/L	5	02/17/20 12:24	EPA200.7		AES
Potassium*	<5.00	5.00	0.651	mg/L	5	02/17/20 12:24	EPA200.7		AES
Silica (Si02)	**7.01**	5.35	0.177	mg/L	5	02/17/20 12:24	Calculation		AES
Silicon	**3.28**	2.50	0.083	mg/L	5	02/17/20 12:24	EPA200.7		AES
Sodium*	**1050**	5.00	0.503	mg/L	5	02/17/20 12:24	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0005	mg/L	5	02/21/20 10:12	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0004	mg/L	5	02/21/20 10:12	EPA200.8		AES
Copper*	**0.0165**	0.0025	0.0011	mg/L	5	02/21/20 10:12	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0006	mg/L	5	02/21/20 10:12	EPA200.8		AES
Manganese*	**0.0081**	0.0025	0.0006	mg/L	5	02/21/20 10:12	EPA200.8		AES
Molybdenum*	**0.0033**	0.0025	0.0006	mg/L	5	02/21/20 10:12	EPA200.8		AES
Selenium*	<0.0050	0.0050	0.0027	mg/L	5	02/21/20 10:12	EPA200.8		AES
Uranium	<0.0025	0.0025	0.0010	mg/L	5	02/21/20 10:12	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0016	mg/L	5	02/21/20 10:12	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-1.55**								

Green Analytical Laboratories

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

MW-5-MI

2002107-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**805**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**80.0**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**885**	10.0	7.16	mg/L	5	02/13/20 13:00	2320 B		VJL
Chloride*	**5.47**	2.00	0.177	mg/L	2	02/14/20 01:03	EPA300.0		AES
Fluoride*	**0.340**	0.200	0.0194	mg/L	2	02/14/20 01:03	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:34	EPA353.2		LLG
pH*	**8.28**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**980**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**6.47**	2.00	0.305	mg/L	2	02/14/20 01:03	EPA300.0		AES
Total Organic Carbon*	**2.73**	0.500	0.135	mg/L	1	02/20/20 15:28	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/17/20 12:29	EPA200.7		AES
Calcium*	**2.17**	0.200	0.033	mg/L	2	02/17/20 12:29	EPA200.7		AES
Hardness as CaCO3	**8.89**	1.32	0.276	mg/L	2	02/17/20 12:29	2340 B		AES
Iron*	<0.100	0.100	0.037	mg/L	2	02/17/20 12:29	EPA200.7		AES
Magnesium*	**0.842**	0.200	0.047	mg/L	2	02/17/20 12:29	EPA200.7		AES
Potassium*	<2.00	2.00	0.260	mg/L	2	02/17/20 12:29	EPA200.7		AES
Silica (Si02)	**8.07**	2.14	0.0708	mg/L	2	02/17/20 12:29	Calculation		AES
Silicon	**3.77**	1.00	0.033	mg/L	2	02/17/20 12:29	EPA200.7		AES
Sodium*	**405**	2.00	0.201	mg/L	2	02/17/20 12:29	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0133**	0.0010	0.0002	mg/L	2	02/21/20 10:19	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 10:19	EPA200.8		AES
Copper*	**0.0041**	0.0010	0.0004	mg/L	2	02/21/20 10:19	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 10:19	EPA200.8		AES
Manganese*	**0.0190**	0.0010	0.0002	mg/L	2	02/21/20 10:19	EPA200.8		AES
Molybdenum*	**0.0038**	0.0010	0.0002	mg/L	2	02/21/20 10:19	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/21/20 10:19	EPA200.8		AES
Uranium	**0.0082**	0.0010	0.0004	mg/L	2	02/21/20 10:19	EPA200.8		AES
Zinc*	**0.0698**	0.0040	0.0006	mg/L	2	02/21/20 10:19	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-.49**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200151 - General Prep - Wet Chem										
Blank (B200151-BLK1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200151-DUP1)		**Source: 2002065-01**	Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	33400	80.0	mg/L		33100			0.961	20	
Reference (B200151-SRM1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	590	10.0	mg/L	600		98.3	85-115			
Batch B200166 - General Prep - Wet Chem										
Blank (B200166-BLK1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200166-BS1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	95.0	10.0	mg/L	100		95.0	85-115			
LCS Dup (B200166-BSD1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.11	20	
Batch B200167 - General Prep - Wet Chem										
Blank (B200167-BLK1)			Prepared & Analyzed: 02/13/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200167-BS1)			Prepared & Analyzed: 02/13/20							
Chloride	23.8	1.00	mg/L	25.0		95.3	90-110			
Fluoride	2.48	0.100	mg/L	2.50		99.2	90-110			
Sulfate	24.2	1.00	mg/L	25.0		96.6	90-110			
LCS Dup (B200167-BSD1)			Prepared & Analyzed: 02/13/20							
Chloride	23.7	1.00	mg/L	25.0		94.8	90-110	0.450	20	
Fluoride	2.47	0.100	mg/L	2.50		98.8	90-110	0.404	20	
Sulfate	24.1	1.00	mg/L	25.0		96.4	90-110	0.294	20	
Batch B200174 - General Prep - Wet Chem										
Duplicate (B200174-DUP2)		**Source: 2002109-07**	Prepared & Analyzed: 02/13/20							
pH	6.88		pH Units		6.89			0.145	20	
Reference (B200174-SRM1)			Prepared & Analyzed: 02/13/20							
pH	7.02		pH Units	7.00		100	98.5-101.4			
Batch B200186 - General Prep - Wet Chem										
Blank (B200186-BLK1)			Prepared: 02/17/20 Analyzed: 02/18/20							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200186 - General Prep - Wet Chem (Continued)										
LCS (B200186-BS1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.02	0.020	mg/L as N	1.00		102	90-110			
LCS Dup (B200186-BSD1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.03	0.020	mg/L as N	1.00		103	90-110	0.723	20	
Batch B200209 - General Prep - Wet Chem										
Blank (B200209-BLK1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200209-BS1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.2	0.500	mg/L	10.0		102	85-115			
LCS Dup (B200209-BSD1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	1.09	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200189 - Diss. 200.7/200.8										
Blank (B200189-BLK1)				Prepared & Analyzed: 02/17/20						
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 (B200189-BS1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.97	0.050	mg/L	5.00		99.4	85-115			
Calcium	4.97	0.100	mg/L	5.00		99.3	85-115			
Iron	4.85	0.050	mg/L	5.00		96.9	85-115			
Magnesium	24.4	0.100	mg/L	25.0		97.7	85-115			
Potassium	9.90	1.00	mg/L	10.0		99.0	85-115			
Silicon	5.07	0.500	mg/L	5.00		101	85-115			
Sodium	4.17	1.00	mg/L	4.05		103	85-115			
LCS Dup (B200189-BSD1)				Prepared & Analyzed: 02/17/20						
Aluminum	4.90	0.050	mg/L	5.00		97.9	85-115	1.53	20	
Calcium	4.77	0.100	mg/L	5.00		95.4	85-115	4.07	20	
Iron	4.72	0.050	mg/L	5.00		94.5	85-115	2.59	20	
Magnesium	23.8	0.100	mg/L	25.0		95.2	85-115	2.58	20	
Potassium	9.66	1.00	mg/L	10.0		96.6	85-115	2.51	20	
Silicon	4.98	0.500	mg/L	5.00		99.5	85-115	1.83	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	0.985	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200172 - Diss. 200.7/200.8										
Blank (B200172-BLK1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200172-BS1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0533	0.0005	mg/L	0.0500		107	85-115			
Cadmium	0.0533	0.0001	mg/L	0.0500		107	85-115			
Copper	0.0517	0.0005	mg/L	0.0500		103	85-115			
Lead	0.0552	0.0005	mg/L	0.0500		110	85-115			
Manganese	0.0529	0.0005	mg/L	0.0500		106	85-115			
Molybdenum	0.0545	0.0005	mg/L	0.0500		109	85-115			
Selenium	0.270	0.0010	mg/L	0.250		108	85-115			
Uranium	0.0556	0.0005	mg/L	0.0500		111	85-115			
Zinc	0.0510	0.0020	mg/L	0.0500		102	85-115			
LCS Dup (B200172-BSD1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0448	0.0005	mg/L	0.0500		89.5	85-115	17.5	20	
Cadmium	0.0459	0.0001	mg/L	0.0500		91.8	85-115	15.0	20	
Copper	0.0455	0.0005	mg/L	0.0500		91.1	85-115	12.6	20	
Lead	0.0457	0.0005	mg/L	0.0500		91.5	85-115	18.8	20	
Manganese	0.0454	0.0005	mg/L	0.0500		90.7	85-115	15.3	20	
Molybdenum	0.0451	0.0005	mg/L	0.0500		90.1	85-115	19.0	20	
Selenium	0.226	0.0010	mg/L	0.250		90.5	85-115	17.8	20	
Uranium	0.0456	0.0005	mg/L	0.0500		91.2	85-115	19.8	20	
Zinc	0.0466	0.0020	mg/L	0.0500		93.3	85-115	8.93	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200163 - EPA 245.1/7470										
Blank (B200163-BLK1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	ND	0.0002	mg/L							
LCS (B200163-BS1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0056	0.0002	mg/L	0.00500		112	85-115			
LCS Dup (B200163-BSD1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0048	0.0002	mg/L	0.00500		96.0	85-115	15.3	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:27

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

GREEN GAL Analytical Laboratories
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75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC	Bill to (if different):
Address: 6473 COUNTY ROAD 120	P.O. #:
City: HESPERUS **State:** CO **Zip:** 81326	Company:
Phone #: 970 385 4528	Attn:
Contact Person: TOM BIRD / TBIRD@GCC.COM	Address:
Email Report to: LONDON BECK	City:
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIE.COM	State: Zip:
	Phone #:
Sampler Name (Print): MARCUS BENALLY & MICHAEL MCFARLAND	Email:

ANALYSIS REQUEST

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	GCCE GW BASELINE
2002-107-01	MW-5-C	2-12-20	1142	✓							1	1		4			✓
-02	MW-5-MI	2-12-20	1211	✓							1	1		4			✓

Relinquished By:	Date:	Time:	Received By:
Michael McFarland	2-12-2020	1340	
Relinquished By:	Date:	Time:	Received By:
	2/12/20	1545	jm 02/12
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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

jm 02/12
2.6/2.9°C
#1 on ice

~~2.6/2.4~~ Temperature at receipt: CHECKED BY jm

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

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17 February 2020

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 02/05/20 15:50.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-6-A	2002046-01	Water	02/05/20 10:31	02/05/20 15:50	
MW-6-LM	2002046-02	Water	02/05/20 11:55	02/05/20 15:50	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

MW-6-A

2002046-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**215**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**215**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**28.4**	5.00	0.443	mg/L	5	02/07/20 23:44	EPA300.0		AES
Fluoride*	<0.500	0.500	0.0486	mg/L	5	02/07/20 23:44	EPA300.0		AES
Nitrate/Nitrite as N*	**0.049**	0.020	0.006	mg/L as N	1	02/11/20 14:28	EPA353.2		LLG
pH*	**6.90**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
Total Dissolved Solids*	**4980**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**3080**	200	30.5	mg/L	200	02/10/20 12:28	EPA300.0		AES
Total Organic Carbon*	**3.16**	0.500	0.135	mg/L	1	02/12/20 18:40	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<1.00	1.00	0.532	mg/L	20	02/12/20 15:35	EPA200.7		AES
Calcium*	**467**	2.00	0.332	mg/L	20	02/12/20 15:35	EPA200.7		AES
Hardness as CaCO3	**3200**	13.2	2.76	mg/L	20	02/12/20 15:35	2340 B		AES
Iron*	**1.95**	1.00	0.368	mg/L	20	02/12/20 15:35	EPA200.7		AES
Magnesium*	**495**	2.00	0.470	mg/L	20	02/12/20 15:35	EPA200.7		AES
Potassium*	<20.0	20.0	2.60	mg/L	20	02/12/20 15:35	EPA200.7		AES
Silica (Si02)	<21.4	21.4	0.708	mg/L	20	02/12/20 15:35	Calculation		AES
Silicon	<10.0	10.0	0.331	mg/L	20	02/12/20 15:35	EPA200.7		AES
Sodium*	**296**	20.0	2.01	mg/L	20	02/12/20 15:35	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0005	mg/L	5	02/10/20 15:15	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0004	mg/L	5	02/10/20 15:15	EPA200.8		AES
Copper*	**0.0028**	0.0025	0.0011	mg/L	5	02/10/20 15:15	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0006	mg/L	5	02/10/20 15:15	EPA200.8		AES
Manganese*	**0.551**	0.0025	0.0006	mg/L	5	02/14/20 12:25	EPA200.8		AES
Molybdenum*	<0.0025	0.0025	0.0006	mg/L	5	02/10/20 15:15	EPA200.8		AES
Selenium*	<0.0050	0.0050	0.0027	mg/L	5	02/10/20 15:15	EPA200.8		AES
Uranium	<0.0025	0.0025	0.0010	mg/L	5	02/10/20 15:15	EPA200.8		AES
Zinc*	**0.0107**	0.0100	0.0016	mg/L	5	02/14/20 12:25	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**5.47**								

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

MW-6-LM

2002046-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**320**	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/10/20 14:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**320**	10.0	7.16	mg/L	5	02/10/20 14:00	2320 B		VJL
Chloride*	**11.0**	2.00	0.177	mg/L	2	02/08/20 01:05	EPA300.0		AES
Fluoride*	**0.352**	0.200	0.0194	mg/L	2	02/08/20 01:05	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/11/20 14:32	EPA353.2		LLG
pH*	**7.43**			pH Units	1	02/07/20 08:45	EPA150.1		FGH
Total Dissolved Solids*	**1840**	10.0		mg/L	1	02/07/20 16:40	EPA160.1		VJL
Sulfate*	**951**	50.0	7.62	mg/L	50	02/10/20 12:48	EPA300.0		AES
Total Organic Carbon*	**1.76**	0.500	0.135	mg/L	1	02/12/20 18:55	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.133	mg/L	5	02/12/20 15:40	EPA200.7		AES
Calcium*	**173**	0.500	0.083	mg/L	5	02/12/20 15:40	EPA200.7		AES
Hardness as CaCO3	**1060**	3.31	0.690	mg/L	5	02/12/20 15:40	2340 B		AES
Iron*	<0.250	0.250	0.092	mg/L	5	02/12/20 15:40	EPA200.7		AES
Magnesium*	**153**	0.500	0.117	mg/L	5	02/12/20 15:40	EPA200.7		AES
Potassium*	**11.0**	5.00	0.651	mg/L	5	02/12/20 15:40	EPA200.7		AES
Silica (Si02)	**17.1**	5.35	0.177	mg/L	5	02/12/20 15:40	Calculation		AES
Silicon	**7.97**	2.50	0.083	mg/L	5	02/12/20 15:40	EPA200.7		AES
Sodium*	**203**	5.00	0.503	mg/L	5	02/12/20 15:40	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0044**	0.0010	0.0002	mg/L	2	02/14/20 12:28	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/10/20 15:18	EPA200.8		AES
Copper*	**0.0014**	0.0010	0.0004	mg/L	2	02/10/20 15:18	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/10/20 15:18	EPA200.8		AES
Manganese*	**0.184**	0.0010	0.0002	mg/L	2	02/14/20 12:28	EPA200.8		AES
Molybdenum*	**0.0020**	0.0010	0.0002	mg/L	2	02/10/20 15:18	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/10/20 15:18	EPA200.8		AES
Uranium	**0.0055**	0.0010	0.0004	mg/L	2	02/10/20 15:18	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/10/20 15:18	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/12/20 14:33	EPA245.1		LLG
Cation/Anion Balance	**6.69**								

Green Analytical Laboratories

Debbie Zufelt

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200123 - General Prep - Wet Chem										
Blank (B200123-BLK1)				Prepared: 02/07/20 Analyzed: 02/10/20						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200123-BS1)				Prepared & Analyzed: 02/07/20						
Chloride	23.5	1.00	mg/L	25.0		93.9	90-110			
Fluoride	2.45	0.100	mg/L	2.50		97.9	90-110			
Sulfate	24.0	1.00	mg/L	25.0		96.2	90-110			
LCS Dup (B200123-BSD1)				Prepared & Analyzed: 02/07/20						
Chloride	23.5	1.00	mg/L	25.0		94.0	90-110	0.0426	20	
Fluoride	2.45	0.100	mg/L	2.50		98.2	90-110	0.245	20	
Sulfate	24.0	1.00	mg/L	25.0		96.0	90-110	0.191	20	
Batch B200125 - General Prep - Wet Chem										
Blank (B200125-BLK1)				Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200125-DUP1)			**Source: 2002014-01**	Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	575	10.0	mg/L		575			0.00	20	
Reference (B200125-SRM1)				Prepared & Analyzed: 02/07/20						
Total Dissolved Solids	570	10.0	mg/L	600		95.0	85-115			
Batch B200130 - General Prep - Wet Chem										
Blank (B200130-BLK1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200130-BS1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B200130-BSD1)				Prepared: 02/10/20 Analyzed: 02/11/20						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110	0.258	20	
Batch B200134 - General Prep - Wet Chem										
Blank (B200134-BLK1)				Prepared & Analyzed: 02/10/20						
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							

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200134 - General Prep - Wet Chem (Continued)										
LCS (B200134-BS1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	97.0	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	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B200134-BSD1)			Prepared & Analyzed: 02/10/20							
Alkalinity, Bicarbonate as CaCO3	92.0	10.0	mg/L				85-115	5.29	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	92.0	10.0	mg/L	100		92.0	85-115	5.29	20	
Batch B200135 - General Prep - Wet Chem										
Duplicate (B200135-DUP1)		**Source: 2002045-01**	Prepared & Analyzed: 02/07/20							
pH	6.94		pH Units		6.96			0.288	20	
Reference (B200135-SRM1)			Prepared & Analyzed: 02/07/20							
pH	7.01		pH Units	7.00		100	98.5-101.4			
Batch B200153 - General Prep - Wet Chem										
Blank (B200153-BLK1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200153-BS1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B200153-BSD1)			Prepared & Analyzed: 02/12/20							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.0993	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200157 - Diss. 200.7/200.8										
Blank (B200157-BLK1)				Prepared & Analyzed: 02/12/20						
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 (B200157-BS1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.82	0.050	mg/L	5.00		96.4	85-115			
Calcium	4.87	0.100	mg/L	5.00		97.4	85-115			
Iron	4.86	0.050	mg/L	5.00		97.3	85-115			
Magnesium	24.3	0.100	mg/L	25.0		97.3	85-115			
Potassium	10.1	1.00	mg/L	10.0		101	85-115			
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115			
Sodium	3.97	1.00	mg/L	4.05		98.1	85-115			
LCS Dup (B200157-BSD1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.76	0.050	mg/L	5.00		95.3	85-115	1.24	20	
Calcium	4.76	0.100	mg/L	5.00		95.2	85-115	2.28	20	
Iron	4.76	0.050	mg/L	5.00		95.2	85-115	2.20	20	
Magnesium	23.9	0.100	mg/L	25.0		95.8	85-115	1.56	20	
Potassium	9.93	1.00	mg/L	10.0		99.3	85-115	1.43	20	
Silicon	4.75	0.500	mg/L	5.00		95.1	85-115	2.20	20	
Sodium	3.95	1.00	mg/L	4.05		97.4	85-115	0.700	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200132 - Diss. 200.7/200.8										
Blank (B200132-BLK1)				Prepared & Analyzed: 02/10/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200132-BS1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0511	0.0005	mg/L	0.0500		102	85-115			
Cadmium	0.0514	0.0001	mg/L	0.0500		103	85-115			
Copper	0.0495	0.0005	mg/L	0.0500		99.0	85-115			
Lead	0.0509	0.0005	mg/L	0.0500		102	85-115			
Manganese	0.0511	0.0005	mg/L	0.0500		102	85-115			
Molybdenum	0.0468	0.0005	mg/L	0.0500		93.7	85-115			
Selenium	0.264	0.0010	mg/L	0.250		106	85-115			
Uranium	0.0509	0.0005	mg/L	0.0500		102	85-115			
Zinc	0.0533	0.0020	mg/L	0.0500		107	85-115			
LCS Dup (B200132-BSD1)				Prepared & Analyzed: 02/10/20						
Arsenic	0.0475	0.0005	mg/L	0.0500		94.9	85-115	7.47	20	
Cadmium	0.0487	0.0001	mg/L	0.0500		97.3	85-115	5.49	20	
Copper	0.0452	0.0005	mg/L	0.0500		90.5	85-115	9.03	20	
Lead	0.0476	0.0005	mg/L	0.0500		95.3	85-115	6.59	20	
Manganese	0.0486	0.0005	mg/L	0.0500		97.2	85-115	4.98	20	
Molybdenum	0.0434	0.0005	mg/L	0.0500		86.7	85-115	7.71	20	
Selenium	0.240	0.0010	mg/L	0.250		96.1	85-115	9.42	20	
Uranium	0.0477	0.0005	mg/L	0.0500		95.3	85-115	6.55	20	
Zinc	0.0482	0.0020	mg/L	0.0500		96.5	85-115	9.92	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200147 - EPA 245.1/7470										
Blank (B200147-BLK1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	ND	0.0002	mg/L							
LCS (B200147-BS1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115			
LCS Dup (B200147-BSD1)				Prepared: 02/11/20 Analyzed: 02/12/20						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115	0.0384	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/17/20 12:13

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC	Bill to (if different):
Address: 6473 COUNTY ROAD 120	P.O. #:
City: HESPERUS **State:** CO **Zip:** 81326	Company:
Phone #: 970 385 4528	Attn:
Contact Person: TOM BIRD / TBIRD@GCC.COM	Address:
Email Report to: LANDON BECK	City:
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIC.COM	State: Zip:
	Phone #:
Sampler Name (Print): MARCUS BENALLY & MICHAEL MCFARLAND	Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE
2002-046-01	MW-6-A	2-5-20	1031	X							1	1		4			X
-02	MW-6-LM	2-5-20	1155	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:
Michael McFarland	2-5-20	1455	
Relinquished By:	Date: 2/5/20	Time: 3:50 pm	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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

#1 on ice

1.8/1.6°C
Temperature at receipt:

CHECKED BY

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

Project Information

Printed: 02/05/2020 4:59 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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	

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21 February 2020

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 02/11/20 16:00.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-7-EAA	2002087-01	Water	02/11/20 09:38	02/11/20 16:00	
MW-8-EAA	2002087-02	Water	02/11/20 10:36	02/11/20 16:00	
MW-8-MI	2002087-03	Water	02/11/20 10:58	02/11/20 16:00	
MW-8-PL	2002087-04	Water	02/11/20 11:18	02/11/20 16:00	
MW-8-LM	2002087-05	Water	02/11/20 11:43	02/11/20 16:00	

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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	02/21/20 15:16

MW-7-EAA

2002087-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**357**	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**357**	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	**10.3**	2.00	0.177	mg/L	2	02/13/20 18:53	EPA300.0		AES
Fluoride*	**0.354**	0.200	0.0194	mg/L	2	02/13/20 18:53	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:11	EPA353.2		LLG
pH*	**6.92**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**1520**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**774**	20.0	3.05	mg/L	20	02/14/20 09:28	EPA300.0		AES
Total Organic Carbon*	**3.42**	0.500	0.135	mg/L	1	02/13/20 15:04	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/13/20 11:06	EPA200.7		AES
Calcium*	**165**	0.200	0.033	mg/L	2	02/13/20 11:06	EPA200.7		AES
Hardness as CaCO3	**963**	1.32	0.276	mg/L	2	02/13/20 11:06	2340 B		AES
Iron*	**1.84**	0.100	0.037	mg/L	2	02/13/20 11:06	EPA200.7		AES
Magnesium*	**134**	0.200	0.047	mg/L	2	02/13/20 11:06	EPA200.7		AES
Potassium*	**3.82**	2.00	0.260	mg/L	2	02/13/20 11:06	EPA200.7		AES
Silica (Si02)	**16.4**	2.14	0.0708	mg/L	2	02/13/20 11:06	Calculation		AES
Silicon	**7.67**	1.00	0.033	mg/L	2	02/13/20 11:06	EPA200.7		AES
Sodium*	**73.7**	2.00	0.201	mg/L	2	02/13/20 11:06	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0013**	0.0010	0.0002	mg/L	2	02/21/20 09:48	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 09:48	EPA200.8		AES
Copper*	<0.0010	0.0010	0.0004	mg/L	2	02/21/20 09:48	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:48	EPA200.8		AES
Manganese*	**4.86**	0.0010	0.0002	mg/L	2	02/21/20 09:48	EPA200.8		AES
Molybdenum*	**0.0010**	0.0010	0.0002	mg/L	2	02/21/20 09:48	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/21/20 09:48	EPA200.8		AES
Uranium	**0.0019**	0.0010	0.0004	mg/L	2	02/21/20 09:48	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/21/20 09:48	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-2.02**								

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

MW-8-EAA

2002087-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**404**	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**404**	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	**10.2**	2.00	0.177	mg/L	2	02/13/20 19:12	EPA300.0		AES
Fluoride*	**0.330**	0.200	0.0194	mg/L	2	02/13/20 19:12	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:14	EPA353.2		LLG
pH*	**7.11**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**1290**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**602**	20.0	3.05	mg/L	20	02/14/20 09:47	EPA300.0		AES
Total Organic Carbon*	**3.49**	0.500	0.135	mg/L	1	02/13/20 15:20	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/13/20 11:10	EPA200.7		AES
Calcium*	**149**	0.200	0.033	mg/L	2	02/13/20 11:10	EPA200.7		AES
Hardness as CaCO3	**861**	1.32	0.276	mg/L	2	02/13/20 11:10	2340 B		AES
Iron*	**2.28**	0.100	0.037	mg/L	2	02/13/20 11:10	EPA200.7		AES
Magnesium*	**119**	0.200	0.047	mg/L	2	02/13/20 11:10	EPA200.7		AES
Potassium*	**3.80**	2.00	0.260	mg/L	2	02/13/20 11:10	EPA200.7		AES
Silica (Si02)	**15.7**	2.14	0.0708	mg/L	2	02/13/20 11:10	Calculation		AES
Silicon	**7.32**	1.00	0.033	mg/L	2	02/13/20 11:10	EPA200.7		AES
Sodium*	**77.2**	2.00	0.201	mg/L	2	02/13/20 11:10	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0017**	0.0010	0.0002	mg/L	2	02/21/20 09:51	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 09:51	EPA200.8		AES
Copper*	**0.0010**	0.0010	0.0004	mg/L	2	02/21/20 09:51	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:51	EPA200.8		AES
Manganese*	**3.70**	0.0010	0.0002	mg/L	2	02/21/20 09:51	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:51	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/21/20 09:51	EPA200.8		AES
Uranium	**0.0019**	0.0010	0.0004	mg/L	2	02/21/20 09:51	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/21/20 09:51	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-.37**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

MW-8-MI

2002087-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**543**	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**543**	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	**8.19**	2.00	0.177	mg/L	2	02/13/20 19:32	EPA300.0		AES
Fluoride*	<0.200	0.200	0.0194	mg/L	2	02/13/20 19:32	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:18	EPA353.2		LLG
pH*	**7.53**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**1060**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**314**	10.0	1.52	mg/L	10	02/14/20 10:07	EPA300.0		AES
Total Organic Carbon*	**2.60**	0.500	0.135	mg/L	1	02/13/20 15:41	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/13/20 11:15	EPA200.7		AES
Calcium*	**48.7**	0.200	0.033	mg/L	2	02/13/20 11:15	EPA200.7		AES
Hardness as CaCO3	**254**	1.32	0.276	mg/L	2	02/13/20 11:15	2340 B		AES
Iron*	**0.108**	0.100	0.037	mg/L	2	02/13/20 11:15	EPA200.7		AES
Magnesium*	**32.1**	0.200	0.047	mg/L	2	02/13/20 11:15	EPA200.7		AES
Potassium*	**4.71**	2.00	0.260	mg/L	2	02/13/20 11:15	EPA200.7		AES
Silica (Si02)	**12.2**	2.14	0.0708	mg/L	2	02/13/20 11:15	Calculation		AES
Silicon	**5.71**	1.00	0.033	mg/L	2	02/13/20 11:15	EPA200.7		AES
Sodium*	**269**	2.00	0.201	mg/L	2	02/13/20 11:15	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:55	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 09:55	EPA200.8		AES
Copper*	**0.0027**	0.0010	0.0004	mg/L	2	02/21/20 09:55	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:55	EPA200.8		AES
Manganese*	**0.0391**	0.0010	0.0002	mg/L	2	02/21/20 09:55	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0002	mg/L	2	02/21/20 09:55	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/21/20 09:55	EPA200.8		AES
Uranium	<0.0010	0.0010	0.0004	mg/L	2	02/21/20 09:55	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0006	mg/L	2	02/21/20 09:55	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-2.13**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
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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	02/21/20 15:16

MW-8-PL

2002087-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**339**	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**339**	10.0	7.16	mg/L	1	02/13/20 13:00	2320 B		VJL
Chloride*	**3.51**	1.00	0.0886	mg/L	1	02/13/20 20:30	EPA300.0		AES
Fluoride*	**0.258**	0.100	0.00971	mg/L	1	02/13/20 20:30	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:19	EPA353.2		LLG
pH*	**7.47**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**500**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	**109**	5.00	0.762	mg/L	5	02/14/20 10:26	EPA300.0		AES
Total Organic Carbon*	**1.63**	0.500	0.135	mg/L	1	02/13/20 16:01	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.027	mg/L	1	02/13/20 11:20	EPA200.7		AES
Calcium*	**49.3**	0.100	0.017	mg/L	1	02/13/20 11:20	EPA200.7		AES
Hardness as CaCO3	**278**	0.662	0.138	mg/L	1	02/13/20 11:20	2340 B		AES
Iron*	**0.054**	0.050	0.018	mg/L	1	02/13/20 11:20	EPA200.7		AES
Magnesium*	**37.6**	0.100	0.023	mg/L	1	02/13/20 11:20	EPA200.7		AES
Potassium*	**2.32**	1.00	0.130	mg/L	1	02/13/20 11:20	EPA200.7		AES
Silica (Si02)	**18.9**	1.07	0.0354	mg/L	1	02/13/20 11:20	Calculation		AES
Silicon	**8.82**	0.500	0.017	mg/L	1	02/13/20 11:20	EPA200.7		AES
Sodium*	**78.5**	1.00	0.101	mg/L	1	02/13/20 11:20	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0073**	0.0005	0.0001	mg/L	1	02/21/20 09:58	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/21/20 10:16	EPA200.8		AES
Copper*	**0.0010**	0.0005	0.0002	mg/L	1	02/21/20 09:58	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 09:58	EPA200.8		AES
Manganese*	**0.303**	0.0005	0.0001	mg/L	1	02/21/20 09:58	EPA200.8		AES
Molybdenum*	**0.0008**	0.0005	0.0001	mg/L	1	02/21/20 09:58	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 09:58	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 09:58	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/21/20 09:58	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-.72**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

MW-8-LM

2002087-05 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**595**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**90.0**	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/13/20 13:00	2320 B		VJL
Alkalinity, Total as CaCO3*	**685**	10.0	7.16	mg/L	5	02/13/20 13:00	2320 B		VJL
Chloride*	**3.04**	2.00	0.177	mg/L	2	02/14/20 03:00	EPA300.0		AES
Fluoride*	**3.61**	0.200	0.0194	mg/L	2	02/14/20 03:00	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	02/18/20 13:20	EPA353.2		LLG
pH*	**8.55**			pH Units	1	02/13/20 08:15	EPA150.1		FGH
Total Dissolved Solids*	**840**	10.0		mg/L	1	02/13/20 11:15	EPA160.1		VJL
Sulfate*	<2.00	2.00	0.305	mg/L	2	02/14/20 03:00	EPA300.0		AES
Total Organic Carbon*	**1.69**	0.500	0.135	mg/L	1	02/13/20 16:20	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/17/20 12:21	EPA200.7		AES
Calcium*	**1.77**	0.200	0.033	mg/L	2	02/17/20 12:21	EPA200.7		AES
Hardness as CaCO3	**6.79**	1.32	0.276	mg/L	2	02/17/20 12:21	2340 B		AES
Iron*	<0.100	0.100	0.037	mg/L	2	02/17/20 12:21	EPA200.7		AES
Magnesium*	**0.574**	0.200	0.047	mg/L	2	02/17/20 12:21	EPA200.7		AES
Potassium*	**2.06**	2.00	0.260	mg/L	2	02/17/20 12:21	EPA200.7		AES
Silica (Si02)	**7.62**	2.14	0.0708	mg/L	2	02/17/20 12:21	Calculation		AES
Silicon	**3.56**	1.00	0.033	mg/L	2	02/17/20 12:21	EPA200.7		AES
Sodium*	**309**	2.00	0.201	mg/L	2	02/17/20 12:21	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:02	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00007	mg/L	1	02/21/20 10:02	EPA200.8		AES
Copper*	**0.0033**	0.0005	0.0002	mg/L	1	02/21/20 10:02	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:02	EPA200.8		AES
Manganese*	**0.0025**	0.0005	0.0001	mg/L	1	02/21/20 10:02	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.0001	mg/L	1	02/21/20 10:02	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0005	mg/L	1	02/21/20 10:02	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0002	mg/L	1	02/21/20 10:02	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0003	mg/L	1	02/21/20 10:02	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/17/20 10:05	EPA245.1		LLG
Cation/Anion Balance	**-1.24**								

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200151 - General Prep - Wet Chem										
Blank (B200151-BLK1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200151-DUP1)		**Source: 2002065-01**	Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	33400	80.0	mg/L		33100			0.961	20	
Reference (B200151-SRM1)			Prepared & Analyzed: 02/13/20							
Total Dissolved Solids	590	10.0	mg/L	600		98.3	85-115			
Batch B200154 - General Prep - Wet Chem										
Blank (B200154-BLK1)			Prepared & Analyzed: 02/13/20							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200154-BS1)			Prepared & Analyzed: 02/13/20							
Total Organic Carbon	9.78	0.500	mg/L	10.0		97.8	85-115			
LCS Dup (B200154-BSD1)			Prepared & Analyzed: 02/13/20							
Total Organic Carbon	9.78	0.500	mg/L	10.0		97.8	85-115	0.00	20	
Batch B200166 - General Prep - Wet Chem										
Blank (B200166-BLK1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200166-BS1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	95.0	10.0	mg/L	100		95.0	85-115			
LCS Dup (B200166-BSD1)			Prepared & Analyzed: 02/13/20							
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.11	20	
Batch B200167 - General Prep - Wet Chem										
Blank (B200167-BLK1)			Prepared & Analyzed: 02/13/20							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200167-BS1)			Prepared & Analyzed: 02/13/20							
Chloride	23.8	1.00	mg/L	25.0		95.3	90-110			
Fluoride	2.48	0.100	mg/L	2.50		99.2	90-110			
Sulfate	24.2	1.00	mg/L	25.0		96.6	90-110			
LCS Dup (B200167-BSD1)			Prepared & Analyzed: 02/13/20							
Chloride	23.7	1.00	mg/L	25.0		94.8	90-110	0.450	20	
Fluoride	2.47	0.100	mg/L	2.50		98.8	90-110	0.404	20	
Sulfate	24.1	1.00	mg/L	25.0		96.4	90-110	0.294	20	
Batch B200174 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200174 - General Prep - Wet Chem (Continued)										
Duplicate (B200174-DUP1)		**Source: 2002091-01**		Prepared & Analyzed: 02/13/20						
pH	7.22		pH Units		7.17			0.695	20	
Reference (B200174-SRM1)				Prepared & Analyzed: 02/13/20						
pH	7.02		pH Units	7.00		100	98.5-101.4			
Batch B200186 - General Prep - Wet Chem										
Blank (B200186-BLK1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200186-BS1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.02	0.020	mg/L as N	1.00		102	90-110			
LCS Dup (B200186-BSD1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.03	0.020	mg/L as N	1.00		103	90-110	0.723	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200157 - Diss. 200.7/200.8										
Blank (B200157-BLK1)				Prepared & Analyzed: 02/12/20						
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 (B200157-BS1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.82	0.050	mg/L	5.00		96.4	85-115			
Calcium	4.87	0.100	mg/L	5.00		97.4	85-115			
Iron	4.86	0.050	mg/L	5.00		97.3	85-115			
Magnesium	24.3	0.100	mg/L	25.0		97.3	85-115			
Potassium	10.1	1.00	mg/L	10.0		101	85-115			
Silicon	4.86	0.500	mg/L	5.00		97.2	85-115			
Sodium	3.97	1.00	mg/L	4.05		98.1	85-115			
LCS Dup (B200157-BSD1)				Prepared & Analyzed: 02/12/20						
Aluminum	4.76	0.050	mg/L	5.00		95.3	85-115	1.24	20	
Calcium	4.76	0.100	mg/L	5.00		95.2	85-115	2.28	20	
Iron	4.76	0.050	mg/L	5.00		95.2	85-115	2.20	20	
Magnesium	23.9	0.100	mg/L	25.0		95.8	85-115	1.56	20	
Potassium	9.93	1.00	mg/L	10.0		99.3	85-115	1.43	20	
Silicon	4.75	0.500	mg/L	5.00		95.1	85-115	2.20	20	
Sodium	3.95	1.00	mg/L	4.05		97.4	85-115	0.700	20	
Batch B200189 - Diss. 200.7/200.8										
Blank (B200189-BLK1)				Prepared & Analyzed: 02/17/20						
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							

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

Dissolved Metals by ICP - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200189 - Diss. 200.7/200.8 (Continued)										
LCS (B200189-BS1)			Prepared & Analyzed: 02/17/20							
Aluminum	4.97	0.050	mg/L	5.00		99.4	85-115			
Calcium	4.97	0.100	mg/L	5.00		99.3	85-115			
Iron	4.85	0.050	mg/L	5.00		96.9	85-115			
Magnesium	24.4	0.100	mg/L	25.0		97.7	85-115			
Potassium	9.90	1.00	mg/L	10.0		99.0	85-115			
Silicon	5.07	0.500	mg/L	5.00		101	85-115			
Sodium	4.17	1.00	mg/L	4.05		103	85-115			
LCS Dup (B200189-BSD1)			Prepared & Analyzed: 02/17/20							
Aluminum	4.90	0.050	mg/L	5.00		97.9	85-115	1.53	20	
Calcium	4.77	0.100	mg/L	5.00		95.4	85-115	4.07	20	
Iron	4.72	0.050	mg/L	5.00		94.5	85-115	2.59	20	
Magnesium	23.8	0.100	mg/L	25.0		95.2	85-115	2.58	20	
Potassium	9.66	1.00	mg/L	10.0		96.6	85-115	2.51	20	
Silicon	4.98	0.500	mg/L	5.00		99.5	85-115	1.83	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	0.985	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200172 - Diss. 200.7/200.8										
Blank (B200172-BLK1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200172-BS1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0533	0.0005	mg/L	0.0500		107	85-115			
Cadmium	0.0533	0.0001	mg/L	0.0500		107	85-115			
Copper	0.0517	0.0005	mg/L	0.0500		103	85-115			
Lead	0.0552	0.0005	mg/L	0.0500		110	85-115			
Manganese	0.0529	0.0005	mg/L	0.0500		106	85-115			
Molybdenum	0.0545	0.0005	mg/L	0.0500		109	85-115			
Selenium	0.270	0.0010	mg/L	0.250		108	85-115			
Uranium	0.0556	0.0005	mg/L	0.0500		111	85-115			
Zinc	0.0510	0.0020	mg/L	0.0500		102	85-115			
LCS Dup (B200172-BSD1)				Prepared: 02/14/20 Analyzed: 02/21/20						
Arsenic	0.0448	0.0005	mg/L	0.0500		89.5	85-115	17.5	20	
Cadmium	0.0459	0.0001	mg/L	0.0500		91.8	85-115	15.0	20	
Copper	0.0455	0.0005	mg/L	0.0500		91.1	85-115	12.6	20	
Lead	0.0457	0.0005	mg/L	0.0500		91.5	85-115	18.8	20	
Manganese	0.0454	0.0005	mg/L	0.0500		90.7	85-115	15.3	20	
Molybdenum	0.0451	0.0005	mg/L	0.0500		90.1	85-115	19.0	20	
Selenium	0.226	0.0010	mg/L	0.250		90.5	85-115	17.8	20	
Uranium	0.0456	0.0005	mg/L	0.0500		91.2	85-115	19.8	20	
Zinc	0.0466	0.0020	mg/L	0.0500		93.3	85-115	8.93	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200163 - EPA 245.1/7470										
Blank (B200163-BLK1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	ND	0.0002	mg/L							
LCS (B200163-BS1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0056	0.0002	mg/L	0.00500		112	85-115			
LCS Dup (B200163-BSD1)				Prepared: 02/13/20 Analyzed: 02/17/20						
Mercury	0.0048	0.0002	mg/L	0.00500		96.0	85-115	15.3	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	02/21/20 15:16

Notes and Definitions

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC
Address: 6473 COUNTY ROAD 120
City: HESPERUS State: CO Zip: 81326
Phone #: 970 385 4528
Contact Person: TOM BIRD / TBIRD@GCC.COM
Email Report to: LANDON BECK
Project Name(optional): BECK@RESOURCEHYDROGEOLOGIC.COM
Sampler Name (Print): MARCUS BENALLY & MICHAEL MCFARLAND

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

ANALYSIS REQUEST

GCCE GW BASELINE

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	GCCE GW BASELINE
2002-087-01	MW-7-EAA	2-11-20	0938	X							1	1		4			X
-02	MW-8-EAA	2-11-20	1036	X							1	1		4			X
-03	MW-8-MI	2-11-20	1058	X							1	1		4			X
-04	MW-8-PL	2-11-20	1118	X							1	1		4			X
-05	MW-8-LM	2-11-20	1143	X							1	1		4			X

Relinquished By:	Date:	Time:	Received By:
Michael McFarland	2-11-20	15:03	
Relinquished By:	Date: 02/11/20	Time: 1600	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle)
Yes No

#1 on ice

3.2/3.0°C
Temperature at receipt:

CHECKED BY

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

Project Information

Printed: 02/11/2020 4:03 pm

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

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

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
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	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
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)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
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

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04 March 2020

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 02/17/20 16:05.
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.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Wiltse Well	2002144-01	Water	02/17/20 12:05	02/17/20 16:05	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

Wiltse Well

2002144-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**460**	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	02/20/20 14:05	2320 B		VJW
Alkalinity, Total as CaCO3*	**460**	10.0	7.16	mg/L	5	02/20/20 14:05	2320 B		VJW
Chloride*	**57.7**	5.00	0.443	mg/L	5	02/24/20 19:45	EPA300.0		AES
Fluoride*	<0.500	0.500	0.0486	mg/L	5	02/24/20 19:45	EPA300.0		AES
Nitrate/Nitrite as N*	**1.05**	0.020	0.006	mg/L as N	1	02/18/20 14:11	EPA353.2		LLG
pH*	**7.12**			pH Units	1	02/19/20 08:20	EPA150.1		FGH
Total Dissolved Solids*	**1600**	10.0		mg/L	1	02/19/20 14:00	EPA160.1		VJW
Sulfate*	**711**	25.0	3.81	mg/L	25	02/24/20 20:05	EPA300.0		AES
Total Organic Carbon*	**4.22**	0.500	0.135	mg/L	1	02/20/20 20:36	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.053	mg/L	2	02/28/20 10:44	EPA200.7		AES
Calcium*	**191**	0.200	0.033	mg/L	2	02/28/20 10:44	EPA200.7		AES
Hardness as CaCO3	**982**	1.32	0.276	mg/L	2	02/28/20 10:44	2340 B		AES
Iron*	**0.285**	0.100	0.037	mg/L	2	02/28/20 10:44	EPA200.7		AES
Magnesium*	**123**	0.200	0.047	mg/L	2	02/28/20 10:44	EPA200.7		AES
Potassium*	**4.33**	2.00	0.260	mg/L	2	02/28/20 10:44	EPA200.7		AES
Silica (Si02)	**12.2**	2.14	0.0708	mg/L	2	02/28/20 10:44	Calculation		AES
Silicon	**5.72**	1.00	0.033	mg/L	2	02/28/20 10:44	EPA200.7		AES
Sodium*	**68.1**	2.00	0.201	mg/L	2	02/28/20 10:44	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0002	mg/L	2	02/25/20 14:21	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.0001	mg/L	2	02/25/20 14:21	EPA200.8		AES
Copper*	**0.0020**	0.0010	0.0004	mg/L	2	02/25/20 14:21	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	02/25/20 14:21	EPA200.8		AES
Manganese*	**0.419**	0.0010	0.0002	mg/L	2	02/25/20 14:21	EPA200.8		AES
Molybdenum*	**0.0013**	0.0010	0.0002	mg/L	2	02/25/20 14:21	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0011	mg/L	2	02/25/20 14:21	EPA200.8		AES
Uranium	**0.0039**	0.0010	0.0004	mg/L	2	02/25/20 14:21	EPA200.8		AES
Zinc*	**0.0122**	0.0040	0.0006	mg/L	2	02/25/20 14:21	EPA200.8		AES
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	02/24/20 12:04	EPA245.1		LLG
Cation/Anion Balance	**-6.05**								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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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	03/04/20 12:59

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200187 - General Prep - Wet Chem										
Blank (B200187-BLK1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B200187-BS1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B200187-BSD1)				Prepared: 02/17/20 Analyzed: 02/18/20						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.163	20	
Batch B200203 - General Prep - Wet Chem										
Blank (B200203-BLK1)				Prepared: 02/19/20 Analyzed: 02/24/20						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B200203-BS1)				Prepared: 02/19/20 Analyzed: 02/24/20						
Chloride	23.5	1.00	mg/L	25.0		93.9	90-110			
Fluoride	2.59	0.100	mg/L	2.50		103	90-110			
Sulfate	24.8	1.00	mg/L	25.0		99.1	90-110			
LCS Dup (B200203-BSD1)				Prepared: 02/19/20 Analyzed: 02/24/20						
Chloride	23.9	1.00	mg/L	25.0		95.6	90-110	1.79	20	
Fluoride	2.63	0.100	mg/L	2.50		105	90-110	1.46	20	
Sulfate	25.1	1.00	mg/L	25.0		100	90-110	1.13	20	
Batch B200204 - General Prep - Wet Chem										
Blank (B200204-BLK1)				Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B200204-DUP1)			**Source: 2002115-03**	Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	575	10.0	mg/L		555			3.54	20	
Reference (B200204-SRM1)				Prepared & Analyzed: 02/19/20						
Total Dissolved Solids	565	10.0	mg/L	600		94.2	85-115			
Batch B200209 - General Prep - Wet Chem										
Blank (B200209-BLK1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B200209-BS1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.2	0.500	mg/L	10.0		102	85-115			
LCS Dup (B200209-BSD1)				Prepared & Analyzed: 02/20/20						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	1.09	20	
Batch B200212 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200212 - General Prep - Wet Chem (Continued)										
Duplicate (B200212-DUP1)		**Source: 2002142-01**		Prepared & Analyzed: 02/19/20						
pH	7.38		pH Units		7.35			0.407	20	
Reference (B200212-SRM1)				Prepared & Analyzed: 02/19/20						
pH	7.07		pH Units	7.00		101	98.5-101.4			
Batch B200214 - General Prep - Wet Chem										
Blank (B200214-BLK1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B200214-BS1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	94.0	10.0	mg/L	100		94.0	85-115			
LCS Dup (B200214-BSD1)				Prepared & Analyzed: 02/20/20						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115	3.14	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200216 - Diss. 200.7/200.8										
Blank (B200216-BLK1)				Prepared & Analyzed: 02/20/20						
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 (B200216-BS1)				Prepared & Analyzed: 02/20/20						
Aluminum	5.39	0.050	mg/L	5.00		108	85-115			
Calcium	5.32	0.100	mg/L	5.00		106	85-115			
Iron	5.24	0.050	mg/L	5.00		105	85-115			
Magnesium	26.4	0.100	mg/L	25.0		105	85-115			
Potassium	11.0	1.00	mg/L	10.0		110	85-115			
Silicon	5.48	0.500	mg/L	5.00		110	85-115			
Sodium	4.41	1.00	mg/L	4.05		109	85-115			
LCS Dup (B200216-BSD1)				Prepared & Analyzed: 02/20/20						
Aluminum	4.82	0.050	mg/L	5.00		96.3	85-115	11.2	20	
Calcium	4.63	0.100	mg/L	5.00		92.7	85-115	13.8	20	
Iron	4.62	0.050	mg/L	5.00		92.4	85-115	12.5	20	
Magnesium	23.2	0.100	mg/L	25.0		92.6	85-115	13.0	20	
Potassium	9.77	1.00	mg/L	10.0		97.7	85-115	11.4	20	
Silicon	4.90	0.500	mg/L	5.00		98.1	85-115	11.0	20	
Sodium	3.91	1.00	mg/L	4.05		96.5	85-115	12.1	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200246 - Diss. 200.7/200.8										
Blank (B200246-BLK1)				Prepared & Analyzed: 02/25/20						
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0005	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	0.0005	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B200246-BS1)				Prepared & Analyzed: 02/25/20						
Arsenic	0.0487	0.0005	mg/L	0.0500		97.3	85-115			
Cadmium	0.0496	0.0001	mg/L	0.0500		99.2	85-115			
Copper	0.0507	0.0005	mg/L	0.0500		101	85-115			
Lead	0.0508	0.0005	mg/L	0.0500		102	85-115			
Manganese	0.0500	0.0005	mg/L	0.0500		100	85-115			
Molybdenum	0.0498	0.0005	mg/L	0.0500		99.6	85-115			
Selenium	0.248	0.0010	mg/L	0.250		99.1	85-115			
Uranium	0.0494	0.0005	mg/L	0.0500		98.7	85-115			
Zinc	0.0483	0.0020	mg/L	0.0500		96.7	85-115			
LCS Dup (B200246-BSD1)				Prepared & Analyzed: 02/25/20						
Arsenic	0.0519	0.0005	mg/L	0.0500		104	85-115	6.35	20	
Cadmium	0.0496	0.0001	mg/L	0.0500		99.1	85-115	0.0796	20	
Copper	0.0534	0.0005	mg/L	0.0500		107	85-115	5.24	20	
Lead	0.0555	0.0005	mg/L	0.0500		111	85-115	8.78	20	
Manganese	0.0534	0.0005	mg/L	0.0500		107	85-115	6.52	20	
Molybdenum	0.0535	0.0005	mg/L	0.0500		107	85-115	7.19	20	
Selenium	0.265	0.0010	mg/L	0.250		106	85-115	6.80	20	
Uranium	0.0541	0.0005	mg/L	0.0500		108	85-115	9.10	20	
Zinc	0.0518	0.0020	mg/L	0.0500		104	85-115	6.94	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200222 - EPA 245.1/7470										
Blank (B200222-BLK1)				Prepared: 02/20/20 Analyzed: 02/24/20						
Mercury	ND	0.0002	mg/L							
LCS (B200222-BS1)				Prepared: 02/20/20 Analyzed: 02/24/20						
Mercury	0.0051	0.0002	mg/L	0.00500		102	85-115			
LCS Dup (B200222-BSD1)				Prepared: 02/20/20 Analyzed: 02/24/20						
Mercury	0.0050	0.0002	mg/L	0.00500		101	85-115	0.949	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	03/04/20 12:59

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

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Debbie Zufelt, Reports Manager

GREEN GAL Analytical Laboratories

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC	Bill to (if different):
Address: 6473 COUNTY ROAD 120	P.O. #:
City: HESPERUS **State:** CO **Zip:** 81326	Company:
Phone #: 970 385 4528	Attn:
Contact Person: TOM BIRD / TBIRD@GCC.COM	Address:
Email Report to: LANDON BECK	City:
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIC.COM	State: Zip:
	Phone #:
Sampler Name (Print): MARCUS BENALLY & MICHAEL G. MCFARLAND	Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE
2002-144-01	WILTSE WELL	2-17-2020	1409 MST 1205	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: Michael McFarland	**Date:** 2-17-2020 **Time:** 1409	Received By:
Relinquished By: Marcus Benally	Date: 2/17/20 Time: 4:05 pm	Received By:
Relinquished By:	Date: Time:	Received By:
Relinquished By:	Date: Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle)
Yes No

#1 only

5.1/5.2 °C
Temperature at receipt:

CHECKED BY

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