

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch 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	3/31	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	<0.0002	<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 (SiO2)	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	5	8	11
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	Y	Y	Y	N	Y	Y	Y	Y	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	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	<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	</																						

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	5	
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	Y	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	<0.050	<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 (SiO2)	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

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	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	<0.0002	<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 (SiO2)	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	5	8	11		
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	Y	Y	Y	Y	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	<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	<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	<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 (SiO2)	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															

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	19.5	20	20	21	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	<0.0002	<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 (SiO2)	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:

- ^ 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-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	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 (SiO2)	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																
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	dry	dry	dry	dry	dry	dry	dry	***	dry	dry	dry	dry	dry	dry	dry	dry
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 (SiO2)	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 | 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. |
| gpm | gallons per minute | 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. |
| deg C | degrees Celsius | 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. |
| 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) | | |

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	0.1	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					1130			1120	1180	1010	1820	1840	1700	1600		
pH (Lab)	SU	8.35				7.36		7.34					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 (SiO2)	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																		
Total Purged	gal																		
Depth to Water	ft bgs																		
Temperature	deg C	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
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 (SiO2)	mg/L																		
Silicon	mg/L																		
Uranium	mg/L																		
Zinc	mg/L																		

Notes & Definitions:

Y/N	yes or no		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.
gpm	gallons per minute		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.
deg C	degrees Celsius		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.
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)			

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																			
Total Purged	gal																			
Depth to Water	ft bgs																			
Temperature	deg C	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	
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 (SiO2)	mg/L																			
Silicon	mg/L																			
Uranium	mg/L																			
Zinc	mg/L																			

Notes & Definitions:

<p>Y/N yes or no</p> <p>gpm gallons per minute</p> <p>deg C degrees Celsius</p> <p>SU standard pH units</p> <p>µS/cm microsiemens per centimeter</p> <p>mV millivolts</p> <p>mg/L milligram per liter</p> <p>pCi/L picocuries per liter</p> <p>NM not measured (field)</p> <p>NA not analyzed (lab)</p>	<ol style="list-style-type: none"> "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3. Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.
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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																		
Total Purged	gal																		
Depth to Water	ft bgs																		
Temperature	deg C	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
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 (SiO2)	mg/L																		
Silicon	mg/L																		
Uranium	mg/L																		
Zinc	mg/L																		

Notes & Definitions:

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

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	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 (SiO2)	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.								

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	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 (SiO2)	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	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	18.3	
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 (SiO2)	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
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- mV millivolts
- mg/L milligram per liter
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- NM not measured (field)
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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-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	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 (SiO2)	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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- µS/cm microsiemens per centimeter
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- mg/L milligram per liter
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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-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	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 (SiO2)	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:

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- deg C degrees Celsius
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- µS/cm microsiemens per centimeter
- mV millivolts
- mg/L milligram per liter
- pCi/L picocuries per liter
- NM not measured (field)
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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	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	24.0
pH (Lab)	SU	7.61	7.77			7.79		7.98						7.84			7.97	7.96	8.27	7.9	7.95
Total Dissolved Solids (Lab)	mg/L	3230	4050			3750		3780						3730			3660	3650	3590	3580	3580
Calcium	mg/L	13.6	13.7			9.15		7.45						6.32			6.15	5.90	6.60	5.5	5.57
Magnesium	mg/L	2.99	5.26			3.90		2.76						2.61			2.62	2.72	2.94	2.39	2.44
Sodium	mg/L	908	1510			1490		1400						1410			1400	1410	1590	1410	1440
Potassium	mg/L	4.38	5.71			6.07		<10.0						<10.0			<5	<5	5.36	<5.00	<5.00
Alkalinity, Total	mg/L	1250	2360			2780		2680						2600			2410	2480	2450	2470	2480
Alkalinity, Bicarbonate	mg/L	1250	2360			2780		2640						2600			2330	2480	2450	2470	2420
Alkalinity, Carbonate	mg/L	<10.0	<10.0			<10.0		40.0						<10.0			80	<10.0	<10.0	<10.0	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
Chloride	mg/L	181	550			587		608						592			573	533	590	575	528
Fluoride	mg/L	1.29	2.04			2.17		2.43						2.53			2.52	2.48	2.54	2.64	2.41
Sulfate as SO4	mg/L	534	487			70.2		26.0						34.5			27	18.7	11.2	5.07	<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	2.23
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
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
Arsenic	mg/L	0.0059	0.0119			0.0128		0.0152						0.0246			0.0195	0.0202	0.0164	0.0211	0.0203
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0010						<0.0005			<0.0005	<0.0005	<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	0.0111
Iron	mg/L	<0.050	<0.050			<0.050		<0.500						<0.500			0.373	0.397	0.474	0.279	0.591
Lead	mg/L	<0.0005	<0.0050			<0.0050		<0.0050						<0.0025			<0.0025	<0.0025	<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	0.0209
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002						<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.0526	0.115			0.0138		0.0106						0.0086			0.0072	0.0071	0.0057	0.0074	0.0045
Selenium	mg/L	0.0248	0.0231			0.0214		0.0269						0.0378			0.0317	0.0260	0.0211	0.0339	0.0140
Silica (SiO2)	mg/L	9.85	12.6			12.9		<10.7						<10.7			11	11.2	12.8	10.1	9.88
Silicon	mg/L	4.61	5.88			6.02		<5.00						<5.00			5.16	5.24	6.00	4.7	4.62
Uranium	mg/L	0.0297	0.121			0.0984		0.0545						0.0311			0.0311	0.0277	0.0246	0.0215	0.0063
Zinc	mg/L	0.0156	0.0265			<0.0200		<0.0200						<0.0100			<0.01	<0.01	<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	0.06	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
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
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
pH	SU	7.32	6.64	6.66	6.74	6.65	6.73	6.76	6.75	6.76	6.80	6.79
Specific Conductance	µS/cm	6573	6053	6072	6107	6012	6057	5725	5598	5562	5451	5108
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
Lab Analytical Results:												
Hardness as CaCO3	mg/L	4360		4190			3920			3540		3070
pH (Lab)	SU	7.10		6.85			6.77			6.85		6.87
Total Dissolved Solids (Lab)	mg/L	6520		6520			120*			6080		5210
Calcium	mg/L	615		559			553			492		431
Magnesium	mg/L	687		678			617			560		484
Sodium	mg/L	294		283			296			304		276
Potassium	mg/L	15.0		14.4			12.4			12.8		11.1
Alkalinity, Total	mg/L	160		160			143			183		220
Alkalinity, Bicarbonate	mg/L	160		160			143			183		220
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0		<10.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0		<10.0
Chloride	mg/L	97.4		28.6			27.3			29.9		29.6
Fluoride	mg/L	2.83		<0.500			<0.500			<0.500		<0.500
Sulfate as SO4	mg/L	205		4300			4280			4260		3460
Total Organic Carbon (TOC)	mg/L	3.45		3.08			2.91			3.57		3.10
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020		<0.020
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
Arsenic	mg/L	<0.0025		<0.0025			0.0009			<0.0025		<0.0025
Cadmium	mg/L	<0.0005		<0.0005			0.0001			<0.0005		<0.0005
Copper	mg/L	0.0116		0.0081			0.0035			0.0039		0.0017
Iron	mg/L	1.37		3.75			3.93			3.22		2.72
Lead	mg/L	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025
Manganese	mg/L	0.788		0.802			0.724			0.690		0.585
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002		<0.0002
Molybdenum	mg/L	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025
Selenium	mg/L	<0.0050		<0.0050			0.0028			<0.0050		<0.0050
Silica (SiO2)	mg/L	12.3		11.9			14.3			13.4		12.5
Silicon	mg/L	5.77		5.57			6.69			6.28		5.83
Uranium	mg/L	<0.0005		<0.0005			<0.0001			<0.0005		<0.0005
Zinc	mg/L	0.0689		<0.0100			0.0082			0.0108		0.0117

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.
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-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
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 (SiO2)	mg/L											
Silicon	mg/L											
Uranium	mg/L											
Zinc	mg/L											

Notes & Definitions:

Y/N	yes or no	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.
gpm	gallons per minute	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.
deg C	degrees Celsius	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.
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)	

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						
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	dry	dry	dry	dry	dry	dry
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 (SiO2)	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 (SiO2)	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
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	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	36.72
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	10.4
pH	SU	6.99	7.01	7.04	6.93	7.00	7.06	7.07	6.28	6.95	7.06	7.03	6.91
Specific Conductance	µS/cm	2001	1910	1910	1926	1912	1767	1836	1885	1890	1913	1936	1922
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
Lab Analytical Results:													
Hardness as CaCO3	mg/L	936		1030			982			997			1020
pH (Lab)	SU	7.2		7.37			7.17			7.09			6.99
Total Dissolved Solids (Lab)	mg/L	1460		1480			1490			1480			1530
Calcium	mg/L	170		179			171			173			162
Magnesium	mg/L	124		142			135			137			144
Sodium	mg/L	75.3		81.3			75.0			75.2			74.9
Potassium	mg/L	3.87		3.9			<5.00			3.74			3.74
Alkalinity, Total	mg/L	380		367			405			392			350
Alkalinity, Bicarbonate	mg/L	380		367			405			392			425
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	mg/L	11.9		10.7			10.8			10.9			11.6
Fluoride	mg/L	<0.500		0.332			0.322			0.322			<0.500
Sulfate as SO4	mg/L	732		736			733			844			746
Total Organic Carbon (TOC)	mg/L	3.72		3.57			3.73			3.70			3.45
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020
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
Arsenic	mg/L	0.0014		0.0015			0.0013			0.0016			0.0013
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0002
Copper	mg/L	0.0003		0.0018			0.0011			0.0008			0.0006
Iron	mg/L	1.82		1.95			1.81			2.12			2.00
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010
Manganese	mg/L	3.72		4.49			4.01			4.22			4.76
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	mg/L	0.0008		0.0011			0.0007			0.0009			<0.0010
Selenium	mg/L	<0.0020		<0.0020			<0.0010			0.0011			<0.0020
Silica (SiO2)	mg/L	16.6		16.1			16.1			16.9			16.8
Silicon	mg/L	7.75		7.52			7.55			7.90			7.83
Uranium	mg/L	0.0021		0.0018			0.0017			0.0018			0.0020
Zinc	mg/L	<0.0050		<0.0040			0.0021			0.0020			<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-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	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
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
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
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
Specific Conductance	µS/cm	1781	1696	1720	1725	1729	1628	1676	1699	172	1739	1774	1739
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
Lab Analytical Results:													
Hardness as CaCO3	mg/L	870		861			864			883			867
pH (Lab)	SU	7.28		7.36			7.13			7.05			7.01
Total Dissolved Solids (Lab)	mg/L	1220		1290			1240			1280			1380
Calcium	mg/L	152		151			148			154			143
Magnesium	mg/L	119		118			120			121			124
Sodium	mg/L	81.7		82.6			77.2			78.6			77.1
Potassium	mg/L	3.80		3.27			3.55			3.18			3.52
Alkalinity, Total	mg/L	400		435			450			431			445
Alkalinity, Bicarbonate	mg/L	400		435			450			431			445
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	mg/L	9.83		10.5			10.3			11.1			11.0
Fluoride	mg/L	0.380		0.370			0.338			0.342			<0.500
Sulfate as SO4	mg/L	533		559			606			643			577
Total Organic Carbon (TOC)	mg/L	3.77		3.59			3.77			3.68			3.52
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020
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
Arsenic	mg/L	0.0020		0.0018			0.0018			0.0021			0.0018
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001
Copper	mg/L	0.0004		0.0024			0.0023			0.0008			0.0010
Iron	mg/L	2.12		2.13			2.42			2.46			2.30
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005
Manganese	mg/L	3.17		3.52			3.06			3.37			3.39
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	mg/L	0.0009		0.0011			0.0008			0.0011			0.0008
Selenium	mg/L	<0.0020		<0.0020			0.0010			0.0013			<0.0010
Silica (SiO2)	mg/L	16.3		15.3			15.7			16.1			15.9
Silicon	mg/L	7.63		7.15			7.32			7.52			7.42
Uranium	mg/L	0.0021		0.0017			0.0016			0.0018			0.0019
Zinc	mg/L	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020

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 (SiO2)	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)

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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.
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 (SiO2)	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:

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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 (SiO2)	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

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