

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Downgradient																									
Year	2018				2019				2020				2021				2022				2023				
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	2	5	8	11	2	5	8	11	2	6	8	12	2	6	9	11	3	6	9	12	3	5	8	11	
Sample Date	2/22	5/7	8/9	11/7	2/28	5/23	8/16	11/13	2/6	6/1	8/13	12/3	2/22	6/3	9/1	11/15	3/24	6/20	9/13	12/20	3/27	5/18	8/18	11/21	
Lab Analysis (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																									
Flow Rate	cfs	NM	NM	NM	0.50	0.25	0.30	1.05	NM	NM	1.50	0.13	NM	0.001	0.40	NM	0.67	0.06	0.04	0.01	0.07	0.10	1.34	0.20	0.08
Temperature	deg C	6.3	11.3	20.6	4.7	6.88	8.23	15.15	3.51	3.73	14.21	20.4	6.83	10.37	13.35	10.47	4.00	9.21	17.71	18.02	4.05	4.52	15.48	14.54	7.36
pH	SU	8.33	7.58	7.43	7.48	6.42	7.77	7.61	8.38	7.94	8.24	8.00	7.7	7.76	8.12	8.26	7.00	7.22	7.53	6.50	6.42	8.43	8.30	7.68	8.29
Specific Conductance	μS/cm	742	304	356	309	577	202	295	554	882	137	237	478	815	131	184	311	636	150	248	292	891	762	835	976
Oxygen Reduction Potential	mV	51.6	111.4	-10.0	-88.9	125.6	50.6	111.6	-108.1	124.2	104.8	103.0	127.8	-26.5	85.1	119.5	122.7	-85.2	136.1	39.9	-132.7	66.9	79.6	-148.0	-29.4
Dissolved Oxygen	mg/L	9.8	8.5	6.3	9.1	7.6	8.8	7.2	9.6	9.5	8.0	6.4	9.6	6.8	7.8	6.7	9.8	NM	7.2	7.0	9.7	10.2	6.8	7.3	9.0
Lab Analytical Results:																									
Hardness as CaCO3	mg/L	329	140	182	167	281	91.9	137	295	416	63.6	120	232	419	64.8	90.7	143	346	65.7	95.9	138	433	337	497	467
pH (Lab)	SU	8.17	8.05	8.09	7.95	7.84	7.68	7.73	7.73	7.80	7.49	7.59	7.85	7.83	7.74	7.58	7.39	8.01	7.86	7.68	7.97	7.95	8.09	8.28	8.07
Total Dissolved Solids (Lab)	mg/L	420	220	260	185	390	185	195	355	573	120	135	370	435	175	90	120	410	29.9	89.9	225	555	475	625	575
Total Suspended Solids	mg/L	49.5	<2.00	5.67	4.40	18.4	153.0	22.5	<4.00	4.20	17.5	28.6	10.5	28.0	8.4	4.8	5.44	18.3	29.2	3.67	8.00	17.8	62.0	16.0	3.38
Calcium	mg/L	75.4	37.5	49.0	44.7	61.6	26.0	34.5	67.2	85.6	20.3	34.2	55.6	98.2	21.2	29.8	39.3	82.1	21.4	30.2	39.0	101	75.8	114	110
Magnesium	mg/L	34.2	11.2	14.4	13.4	31	6.54	12.3	30.8	49.0	3.15	8.38	22.7	42.2	2.86	3.94	11.0	34.2	2.96	5.01	9.73	43.8	35.8	51.9	47.1
Sodium	mg/L	18.1	5.42	6.49	5.15	16.5	5.03	6.62	17.0	28.5	1.90	3.68	9.03	15.8	1.14	1.75	4.71	16.4	1.58	2.04	4.08	18.6	18.5	29.6	21.7
Potassium	mg/L	2.84	1.14	1.58	1.34	3.13	1.31	1.27	2.60	3.81	<1.00	1.36	1.89	3.75	<1.00	1.02	1.30	2.89	<1.00	<1.00	1.07	2.94	2.77	6.45	4.82
Alkalinity, Total	mg/L	265	112	170	140	150	340	140	194	297	48	110	158	315	52	72	116	282	46.0	73.0	103	303	218	293	325
Alkalinity, Bicarbonate	mg/L	259	104	170	140	150	340	140	188	283	48	110	154	315	52	72	116	282	46.0	73.0	103	293	218	265	325
Alkalinity, Carbonate	mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	14.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	28.0	< 10.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	< 10.0	< 10.0
Chloride	mg/L	23.1	7.54	7.47	5.69	40.2	16.9	7.65	14.8	30.7	1.87	4.42	17.1	59	1.16	1.21	5.07	15.0	1.23	1.69	6.57	39.6	39.4	50.5	42.7
Fluoride	mg/L	0.308	0.228	0.295	0.228	0.232	0.205	0.218	0.252	0.272	0.185	0.224	0.244	0.246	0.195	0.216	0.185	0.257	0.191	0.221	0.213	0.274	0.202	0.231	0.201
Sulfate as SO4	mg/L	86.5	40.2	46.8	45.0	91.4	18.5	42.7	83.3	143	14.2	32.4	70.2	90.1	17.3	25.7	46.3	74.7	18.8	26.4	42.2	138	127	168	138
Total Organic Carbon (TOC)	mg/L	1.56	1.28	1.33	1.76	2.90	2.37	2.10	3.26	4.53	1.39	1.47	1.55	2.31	1.18	1.48	1.12	1.42	1.10	1.13	1.01	<5.00	6.19	6.17	4.04
Oil & Grease	mg/L	<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	<5.00	<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	<0.020	<0.020	<0.020	<0.020	0.17	0.146	0.090	<0.020	0.056	0.031	0.053	<0.020	0.148	0.021	<0.020	<0.020	0.041	<0.02	<0.02	<0.02	0.361	0.170	0.078	< 0.020
Sodium Adsorption Ratio (SAR)	no unit	0.43	0.2	0.20	0.17	0.43	0.22	0.24	0.41	0.61	0.10	0.14	0.26	0.34	0.06	0.08	0.17	0.38	0.08	0.90	0.15	0.39	0.44	0.58	0.44
Ammonia as N ^	mg/L	NA	NA	NA	NA	NA	NA	NA	<0.100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA	NA	NA	NA	NA	NA	NA	<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<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	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.100	<0.050	< 0.100	< 0.050
Arsenic	mg/L	0.0005	0.0005	0.0008	<0.0005	0.0006	0.0006	0.0006	0.0005	0.0006	<0.0005	0.0007	<0.0005	0.0013	<0.0005	0.0007	<0.0005	<0.0005	0.0010	0.0007	0.0005	<0.001	0.0009	< 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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	< 0.0010	< 0.0005
Copper	mg/L	0.0005	0.0008	0.0008	0.0008	<0.0010	0.0021	0.0009	0.0007	0.0006	0.0014	0.0009	0.0005	0.0006	0.0011	0.001	0.0007	0.0009	0.0034	0.0010	0.0045	0.0070	0.0026	0.0029	0.0025
Iron	mg/L	<0.050	<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	<0.050	<0.050	<0.050	<0.050	<0.100	<0.050	< 0.100	< 0.050
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	< 0.0010	<0.0005	< 0.0010	< 0.0005
Manganese	mg/L	0.0962	0.0038	0.0445	0.0102	0.048	0.0125	0.0033	0.0102	0.0286	0.0012	0.0046	0.0116	0.133	0.0011	0.0021	0.0124	0.0082	0.0024	0.0175	0.0315	0.0552	0.0233	0.0156	0.0490
Mercury (total)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002					
Mercury (total low-level)	ng/L																	<10.0	<10.0	<200	<100	<100	<100	<100	<100
Molybdenum	mg/L	0.0010	0.0011	0.0012	0.0010	0.001	0.0011	0.0012	0.0007	0.0006	0.0008	0.0012	0.0009	0.0009	0.0009	0.001	0.0009	0.0010	0.0010	0.0011	0.0009	<0.001	0.0009	0.0010	0.0008
Selenium	mg/L	0.0011	<0.0010	<0.0010	<0.001	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	0.0010	0.0011	<0.0010	<0.0010	< 0.0020	0.0010	< 0.0020	0.0013
Silica (SiO2)	mg/L	10.7	8.41	8.77	8.66	8.46	5.70	8.86	11.8	12.3	6.38	7.14	10.6	12.9	6.68	8.84	9.38	12.0	6.98	7.96	8.75	11.3	11.8	13.4	13.8
Silicon	mg/L	5.01	3.93	4.10	4.05	3.95	2.67	4.14	5.50	5.75	2.98	3.34	4.94	6.01	3.12	4.13	4.38	5.59	3.26	3.72	4.09	5.26	5.50	6.25	6.47
Uranium	mg/L	0.0012	0.0004	0.0005	0.0003	0.0009	0.0002	0.0004	0.0007	0.0006	<0.0005	<0.0005	0.0005	0.0009	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	0.0010	0.0007	0.0010	0.0009
Zinc	mg/L	<0.0020	0.0074	0.0048	0.0035	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	0.0022	<0.0020	0.0065	0.0042	<0.0020	< 0.0040	0.0032

Notes & Definitions:

GCC Energy Hydrologic Monitoring Data

Well #1 Upgradient																									
Year	2018				2019				2020				2021				2022				2023				
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	2	5	8	11	2	5	8	11	2	6	8	12	2	5	8	11	3	6	8	12	3	5	8	11	
Sample Date	2/22	5/14	8/9	11/7	2/25	5/23	8/16	11/14	2/13	6/1	8/31	12/14	2/11	5/19	8/12	11/12	3/1	6/2	8/17	12/16	3/29	5/19	8/21	11/21	
Lab Analysis (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																									
Purge Flow Rate	gpm	7.2	7.2	10	7.2	10.0	8.3	11.0	6.5	8.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Total Purged	gal	268	280	267	305	300	321	327	293	314	300	291	280	302	324	300	400	300	300	400	350	270	280	304	264
Depth to Water	ft bgs	5.40	5.77	5.65	6.50	5.98	4.50	5.68	6.08	5.55	4.17	6.25	3.72	6.48	5.82	7.25	6.55	6.47	6.80	6.80	6.30	4.92	4.42	6.15	6.40
Temperature	deg C	11.5	11.7	12.0	12.5	11.7	11.5	11.8	12.9	11.6	12.1	12.3	11.5	11.6	12.2	12.3	12.0	12.0	12.3	12.0	11.7	11.8	11.7	12.7	12.3
pH	SU	7.56	7.49	7.35	7.34	7.44	7.39	7.37	7.32	7.37	7.38	7.57	7.6	7.54	7.56	7.59	7.57	7.46	7.54	7.49	6.84	7.67	7.53	7.67	7.52
Specific Conductance	µS/cm	1278	1218	1289	1204	1235	1308	1253	1232	1277	1268	1067	1190	1142	1235	1212	1301	1235	1301	1235	1282	1313	1375	1201	1287
Oxygen Reduction Potential	mV	-185.3	-219.3	-251.6	-273.0	-232.0	-194.0	-192.0	-159.9	-193.0	-221.7	-187.2	-138.1	-153.4	-208.9	-202.5	-272.2	-306.3	-231.9	-351.0	-306.7	-162.0	-126.9	-157.9	-238.5
Lab Analytical Results:																									
Hardness as CaCO3	mg/L	274	275	369	287	252	350	303	263	290	319	255	247	298	313	236	286	271	311	281	317	334	561	301	303
pH (Lab)	SU	7.75	7.95	7.48	7.50	7.77	7.56	7.23	7.35	7.12	7.26	7.53	7.72	7.39	7.33	7.47	7.23	7.51	7.67	7.46	7.39	7.43	NA*	7.62	7.44
Total Dissolved Solids (Lab)	mg/L	745	770	835	730	735	860	780	705	700	775	710	690	755	785	750	745	725	790	735	745	765	835	740	755
Calcium	mg/L	53.4	53.8	71.5	56.7	49.1	67.8	58.2	51.5	56.5	61.6	49.6	47.4	58.1	60.9	45.4	54.8	53.3	60.3	52.1	60.2	64.2	107	58.1	58.1
Magnesium	mg/L	34.2	34.1	46.4	35.4	31.4	43.8	38.3	32.7	36.1	40.0	31.7	31.1	37.2	39.1	29.8	36.1	33.5	39.0	36.6	40.5	42.2	71.2	37.7	38.4
Sodium	mg/L	183	191	154	212	196	172	167	198	183	178	193	196	204	172	177	182	185	172	179	166	168	106	192	174
Potassium	mg/L	3.09	3.03	3.16	3.15	3.01	3.32	3.01	3.01	<5	3.05	3.05	3.02	<5.00	3.00	<5.00	<5.00	2.93	3.09	2.94	<5.00	<5.00	3.04	<5.00	2.89
Alkalinity, Total	mg/L	620	595	630	640	610	615	615	590	600	576	520	605	570	620	600	770	640	650	570	615	640	590	602	610
Alkalinity, Bicarbonate	mg/L	620	595	630	640	610	615	615	590	600	576	520	587	570	620	600	770	640	590	570	615	640	590	602	610
Alkalinity, Carbonate	mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	18	<10.0	<10.0	<10.0	<10.0	<10.0	60.0	<10.0	<10.0	<10.0	<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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	4.30	4.35	4.34	4.23	4.35	4.59	4.36	6.19	4.76	4.76	4.62	4.34	4.27	4.91	4.89	4.93	4.46	4.50	4.75	4.78	4.77	6.43	4.76	4.83
Fluoride	mg/L	0.354	0.335	0.390	0.359	0.355	0.349	0.335	<0.500	0.348	0.366	0.356	0.342	0.311	0.338	0.35	0.284	0.349	0.268	0.332	0.334	0.340	0.320	0.304	0.268
Sulfate as SO4	mg/L	106	97.2	147	89.9	91.4	131	112	92.1	104	110	79.6	87.9	102	110	98.5	122	96.4	114	103	114	122	174	90.8	102
Total Organic Carbon (TOC)	mg/L	3.37	3.5	3.94	3.35	3.31	3.70	3.53	3.14	3.29	3.37	3.32	3.17	3.26	3.27	3.23	3.23	3.04	3.46	3.45	1.82	3.36	4.62	3.17	2.99
Nitrate/Nitrite as N	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<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	NA	NA	NA	NA	NA	NA	NA	0.931	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA	NA	NA	NA	NA	NA	NA	0.0590	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.250	<0.050	<0.150	<0.050	<0.250	<0.050	<0.250	<0.250	<0.050	<0.050	<0.050	<0.250	<0.250	<0.100	<0.250	<0.100
Arsenic	mg/L	0.0005	0.0005	0.0005	<0.0005	0.0005	0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0010	0.0008	<0.0025	0.0005	<0.0005	<0.0025	<0.0005	0.0006	<0.0005	<0.0025	<0.0025	0.0013	<0.0010	<0.0010
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Copper	mg/L	0.0035	0.003	0.0022	0.0025	0.0042	0.0015	0.0019	0.0012	0.0017	0.0017	0.0021	0.0007	<0.0025	0.0039	0.0038	0.0059	0.0053	0.0067	0.0069	0.0067	0.0031	0.0022	0.0016	0.0035
Iron	mg/L	1.44	1.39	1.98	1.52	1.26	1.74	1.58	1.41	1.49	1.53	1.24	1.7	1.66	1.69	1.19	1.43	1.25	1.65	1.32	2.07	1.70	4.63	1.56	1.81
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Manganese	mg/L	0.307	0.306	0.498	0.286	0.355	0.439	0.428	0.354	0.366	0.369	0.297	0.297	0.414	0.388	0.308	0.387	0.325	0.410	0.349	0.501	0.471	0.922	0.162	0.422
Mercury (dissolved)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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
Mercury (dissolved low-level)	ng/L																		<5.00	<100	<100	<100	<100	<100	<100
Molybdenum	mg/L	<0.0005	<0.0005	0.0006	<0.0005	0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0010	0.0005	<0.0025	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	0.0005	<0.0025	<0.0025	0.0013	<0.0010	<0.0010
Selenium	mg/L	<0.0010	0.0171	0.0120	0.0022	0.0032	0.0024	<0.0010	<0.0020	<0.001	<0.0010	0.0095	0.0171	0.0902	0.0324	0.0331	0.0439	0.0021	0.0089	0.0131	<0.005	0.0406	<0.002	0.0022	0.0113
Silica (SiO2)	mg/L	13.4	14.6	13.8	13.7	13.5	13.1	13.1	14.3	13.1	13.1	13.6	14.3	13	13.9	12.5	13.2	14.2	13.3	13.4	12.9	13.2	14.4	14.0	13.9
Silicon	mg/L	6.27	6.81	6.45	6.41	6.30	6.13	6.11	6.68	6.13	6.14	6.37	6.67	6.10	6.5	5.84	6.17	6.62	6.21	6.28	6.01	6.17	6.74	6.55	6.51
Uranium	mg/L	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	<0.0002	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Zinc	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0040	<0.0020	<0.0020	<0.0040	<0.0020	<0.0100	<0.0020	<0.0020	<0.0100	<0.0020	<0.0020	<0.0020	<0.0100	<0.0100	<0.0040	<0.0040	<0.0040

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table**
 - ^** one-time analysis
 - *** sample out of holding time
 - 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)
 - ng/L** nanogram per liter
1. "**<**" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
 3. Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

Well #2 Downgradient																										
Year	2018					2019					2020				2021				2022				2023			
Quarter	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	2	5	8	8	11	2	5	8	11	2	6	8	12	2	5	8	11	2	5	8	12	3	5	8	11	
Sample Date	2/22	5/7	8/8	8/9	11/7	2/27	5/22	8/16	11/13	2/6	6/1	8/26	12/14	2/11	5/19	8/12	11/10	2/28	5/9	8/9	12/13	3/28	5/19	8/18	11/21	
Lab Analysis (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																										
Purge Flow Rate	gpm	0.1	1.00	0.10	1.00	0.50	0.25	0.50	0.25	0.50	0.25	0.25	0.25	0.13	0.50	0.25	0.25	0.25	0.25	0.25	0.04	0.33	0.60	0.34	0.19	
Total Purged	gal	6	11	2	6.5	7.5	13.0	10.0	9.0	7.5	12.0	8.0	7.0	7.0	12.0	9.0	7.0	12.0	6.0	9.0	19.0	0.4	5.4	8.0	5.2	4.6
Depth to Water	ft bgs	6.68	7.4	6.65	6.59	5.17	5.85	0.92	3.60	5.20	5.60	4.00	6.29	7.48	8.10	8.70	8.32	8.75	9.14	9.70	10.25	9.65	8.55	8.65	8.95	10.07
Temperature	deg C	9.8	8.9	14.0	11.1	11.9	9.1	8.1	10.5	11.5	10.4	9.1	11.5	11.0	9.8	9.4	11.2	12.1	10.1	9.5	11.1	11.2	9.2	8.7	11.3	11.4
pH	SU	7.59	7.48	7.84	7.20	7.15	7.41	7.34	7.23	7.19	7.32	7.41	7.44	7.56	7.50	7.54	7.57	7.53	7.53	7.50	7.45	7.79	7.72	7.52	7.59	7.47
Specific Conductance	µS/cm	887	847	828	895	955	960	1091	1051	1083	1083	1134	1017	1099	964	939	1038	1073	1050	1019	1063	1201	1193	1253	1184	1202
Oxygen Reduction Potential	mV	-44.9	-34	-75.6	-127	-91.9	48.4	-57.8	-30.1	-5.5	25.3	-51.3	19.9	3.2	-4.8	-48.3	-26.0	-33.5	-94.0	-13.3	-207.6	-266.7	15.1	2.1	-18.4	-115.3
Lab Analytical Results:																										
Hardness as CaCO3	mg/L	412	415	422	415	465	488	537	513	603	540	575	560	569	624	529	503	521	500	527	551	557	503	641	646	582
pH (Lab)	SU	7.62	7.6	7.61	7.45	7.50	7.5	7.4	7.04	7.12	7.20	7.09	7.3	7.2	7.17	7.15	7.32	7.24	7.57	7.53	7.71	7.54	7.40	NA*	7.40	7.45
Total Dissolved Solids (Lab)	mg/L	515	545	545	575	550	575	695	655	690	695	730	665	685	660	655	685	655	605	645	680	695	770	775	855	745
Calcium	mg/L	70.1	70.2	72.7	70.4	78.7	81.3	87.1	83.3	99.4	87.2	92.2	90.1	90	97.9	81.2	76.8	80.1	76.0	79.1	84.6	84.1	76.4	101	98.9	88.3
Magnesium	mg/L	57.4	58.2	58.4	58.2	65.2	69.2	77.6	74.0	86.3	78.2	83.7	81.3	83.7	92.2	79.2	75.6	77.9	75.3	80.0	82.5	84.3	75.8	94.7	97.0	87.8
Sodium	mg/L	19.4	19.2	19.6	19.1	21.3	22.1	23.4	21.4	25.5	23.3	24.5	23.8	24.5	26.9	23.4	23.1	23.3	23.3	24.9	26.1	62.7	24.6	30.7	33.8	29.3
Potassium	mg/L	1.76	1.68	2.00	1.82	2.08	1.97	1.94	2.06	2.40	2.04	2.00	2.06	2.22	<5.00	1.94	<5.00	2.12	2.01	1.99	2.28	2.42	<2.00	2.51	2.80	2.26
Alkalinity, Total	mg/L	333	350	380	328	340	395	460	365	348	324	324	345	341	385	375	380	540	372	385	288	358	379	395	379	390
Alkalinity, Bicarbonate	mg/L	333	350	380	328	340	395	460	365	348	324	324	345	333	385	375	380	540	372	385	288	358	379	395	379	390
Alkalinity, Carbonate	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	<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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<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	24.7	27.2	34.5	34.1	39.3	40.1	42.9	45.2	47.2	48.9	50.3	44.8	44.6	46	45.9	37	44.3	41.1	38.1	41.9	53.1	49.2	54.4	52.0	46.9
Fluoride	mg/L	0.244	0.224	0.259	0.281	0.263	0.244	0.246	0.221	<0.500	<0.500	<0.500	0.254	0.248	0.216	0.236	<0.500	0.210	0.251	0.217	0.229	0.268	0.262	0.210	0.220	<0.200
Sulfate as SO4	mg/L	104	102	112	111	137	138	196	189	182	199	230	204	219	190	199	186	176	187	160	190	235	224	258	239	214
Total Organic Carbon (TOC)	mg/L	2.10	2.02	2.06	1.93	2.08	1.87	2.69	2.28	1.99	1.80	1.84	1.87	1.74	2.18	1.74	1.77	1.73	1.73	1.56	1.68	1.04	1.77	3.14	1.88	1.65
Nitrate/Nitrite as N	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.029	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.050	<0.250	<0.050	<0.250	<0.050	<0.050	<0.050	<0.050	<0.100	<0.100	<0.100	<0.100	<0.100
Arsenic	mg/L	0.0010	0.0009	0.0012	0.0012	0.0010	0.0012	0.0011	0.0012	0.0012	0.0011	0.0009	<0.001	0.0013	<0.0025	0.0009	0.0012	<0.0025	0.0007	0.0005	0.0009	0.0015	<0.001	<0.001	<0.0010	<0.0010
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	<0.0002	<0.0001	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.0010	<0.0010
Copper	mg/L	0.0056	0.0002	0.0006	0.0004	0.0003	0.001	0.0016	0.0003	0.0002	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	0.0006	0.0005	<0.0025	<0.0005	0.0006	0.0006	0.0032	0.0050	0.0017	0.0215	0.0023
Iron	mg/L	0.060	0.073	0.089	0.163	0.082	0.062	0.116	0.105	0.119	0.094	0.107	0.109	0.159	<0.250	<0.050	<0.250	0.076	<0.050	0.069	0.054	0.134	<0.100	<0.100	<0.100	<0.100
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	<0.0010	<0.0005	<0.0025	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Manganese	mg/L	0.304	0.306	0.349	0.375	0.320	0.423	0.504	0.404	0.427	0.454	0.444	0.412	0.441	0.422	0.401	0.389	0.438	0.403	0.384	0.397	0.477	0.431	0.293	0.416	0.464
Mercury (dissolved)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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	
Mercury (dissolved low-level)	ng/L																			<5.00	<100	<100	<100	<100	<100	<100
Molybdenum	mg/L	0.0024	0.0022	0.0024	0.0029	0.0024	0.0029	0.0026	0.0019	0.0024	0.0021	0.0023	0.0024	0.0027	0.0026	0.0026	0.0028	0.0027	0.0029	0.0029	0.0032	0.0033	0.0030	0.0027	0.0032	0.0032
Selenium	mg/L	0.0012	<0.001	0.0012	0.0015	0.0013	0.0021	0.001	0.0011	0.0011	<0.010	0.0012	<0.002	0.0012	0.0069	0.0012	0.0012	<0.010	0.0013	<0.001	0.0013	<0.002	<0.002	<0.002	<0.0020	<0.0020
Silica (SiO2)	mg/L	11.1	11.5	11.4	11.5	11.0	11.2	10.5	11.6	12.8	11.2	10.6	11.5	12.7	11.2	10.9	11.3	12.2	11.1	11.3	12.3	11.7	9.61	11.4	12.5	12.2
Silicon	mg/L	5.19	5.39	5.34	5.38	5.15	5.26	4.93	5.44	5.99	5.22	4.98	5.39	5.94	5.24	5.09	5.3	5.72	5.17	5.29	5.76	5.46	4.49	5.35	5.85	5.70
Uranium	mg/L	0.0013	0.0013	0.0013	0.0015	0.0014	0.0019	0.0016	0.0012	0.0015	0.0016	0.0016	0.0013	0.0017	<0.0025	0.0015	0.0015	<0.0025	0.0017	0.0016	0.0015	0.0017	0.0017	0.0022	0.0020	0.0019
Zinc	mg/L	0.0053	0.0022	0.0028	<0.0020	<0.0020	0.0025	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0040	<0.0020	<0.0100	<0.0020	<0.0020	<0.0100	<0.0020	<0.0020	<0.002	<0.0040	<0.0040	<0.0040	0.0198	<0.0040

Notes & Definitions:

Historical data prior to 2018 can be found in earlier posted versions of this table

- ^ one-time analysis
 - * sample out of holding time
 - 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)
 - ng/L nanogram per liter
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	2018				2019				2020				2021				2022				2023				
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	2	5	8	11	2	5	8	11	2	5	8	12	2	5	8	11	3	6	8	11	3	5	8	11	
Sample Date	2/22	5/16	8/9	11/8	2/28	5/23	8/19	11/11	2/17	5/13	8/12	12/15	2/24	5/21	8/11	11/3	3/1	6/1	8/10	11/26	3/28	5/19	8/18	11/29	
Lab Analysis (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																									
Purge Flow Rate	gpm	11.9	12.0	18.5	12.3	28.0	38.0	18.0	17.0	35.0	24.4	16.0	18.0	15.0	12.5	8.5	24.0	18.0	25.0	25.0	16.7	34.8	38.5	46.9	14.3
Total Purged	gal	2700	2890	2783	2747	3017	3200	3010	3058	3825	3495	3200	3030	2920	3000	1800	2800	2900	2950	3000	3000	4000	4000	3100	2612
Depth to Water	ft bgs	3.35	3.93	4.13	3.78	2.40	0.05	2.47	2.68	0.43	1.60	3.18	5.65	3.64	3.70	4.55	4.10	4.70	3.70	2.82	1.60	0.30	0.20	3.35	3.10
Temperature	deg C	8.0	10.2	11.7	10.4	8.0	9.3	10.7	9.9	6.7	9.8	11.7	8.7	8.9	9.9	11.3	10.8	9.5	10.8	12.4	9.7	7.2	9.0	11.3	11.9
pH	SU	7.26	7.13	7.04	7.07	7.17	7.08	7.09	7.09	7.01	7.12	7.22	7.26	7.25	7.23	7.33	7.23	7.17	7.21	7.14	7.07	7.46	7.26	7.22	7.12
Specific Conductance	µS/cm	2232	2144	2072	2167	2170	2151	1964	1970	2171	2017	1450	1984	1739	1789	2012	2038	1965	2039	2285	2268	2518	2449	2332	2571
Oxygen Reduction Potential	mV	14.3	29.9	-52.7	-18.8	22.7	-10.6	-23.7	51.9	49.33	71.9	72.2	73.7	6.9	31.2	41.5	50.5	-26.1	32.4	-76.3	41.4	34.4	39.9	5.5	45.5
Lab Analytical Results:																									
Hardness as CaCO3	mg/L	1090	1160	1130	1180	1150	1080	1080	1060	982	1060	1070	1130	1090	1070	1080	1080	1070	1070	1300	1200	1330	1340	1380	1320
pH (Lab)	SU	7.70	8.35	7.22	7.42	7.38	7.35	7.11	7.09	7.12	7.09	7.29	6.86	7.27	6.98	7.25	7.52	7.25	7.15	7.39	7.42	7.17	NA*	7.03	7.45
Total Dissolved Solids (Lab)	mg/L	1740	1740	1750	1720	1710	1670	1520	1480	1600	1560	1580	1540	1550	1500	1580	1640	1520	1580	1850	1740	2120	1980	1920	2050
Calcium	mg/L	211	216	221	230	226	214	214	208	191	206	206	215	208	199	206	209	208	206	255	232	261	269	273	251
Magnesium	mg/L	136	150	139	147	143	132	132	132	123	132	136	144	138	140	136	136	133	135	160	151	164	162	170	168
Sodium	mg/L	80.4	82.3	79.1	81.2	83.2	89.4	72.4	67.3	68.1	69.1	64	67.5	65.1	61.1	61.6	63.6	61.0	60.1	77.8	71.6	99.0	94.2	82.4	78.9
Potassium	mg/L	4.73	4.98	5.01	5.00	5.01	4.77	4.92	4.85	4.33	<5.00	4.48	4.54	<5.00	4.35	<5.00	4.41	4.42	4.41	4.92	4.20	5.43	5.12	5.74	5.31
Alkalinity, Total	mg/L	445	435	463	505	515	469	474	460	460	431	475	470	480	480	480	520	505	485	530	468	485	435	460	465
Alkalinity, Bicarbonate	mg/L	445	435	463	505	515	469	474	460	460	431	475	470	480	480	480	520	505	485	530	468	485	435	460	465
Alkalinity, Carbonate	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	<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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	66.7	60	57.2	57.5	67.2	67.8	49.9	48.2	57.7	51.8	58.1	57.9	54.8	52.3	49	52.4	49.8	45.7	57.5	52.2	79.0	73.0	59.0	62.2
Fluoride	mg/L	<0.500	<0.500	<0.500	0.298	0.324	0.306	<0.500	<0.500	<0.500	<0.500	0.304	0.292	0.276	0.28	<0.500	0.280	0.286	0.240	0.288	0.288	<0.500	<0.500	<0.500	<0.500
Sulfate as SO4	mg/L	832	714	733	741	801	709	627	627	711	633	704	728	683	661	679	697	688	702	818	873	1070	1060	960	1020
Total Organic Carbon (TOC)	mg/L	3.37	3.5	3.51	3.63	3.82	4.87	4.27	3.30	4.22	3.80	3.69	3.43	3.29	3.33	3.48	3.37	3.21	3.19	3.72	1.95	5.38	5.82	6.11	3.96
Nitrate/Nitrite as N	mg/L	2.26	2.48	2.26	1.99	1.95	0.651	0.896	1.31	1.05	0.865	1.25	1.48	1.82	1.49	2.06	1.87	1.69	1.53	1.16	1.01	0.469	0.619	2.32	2.85
Ammonia as N ^	mg/L	NA	NA	NA	NA	NA	NA	NA	<0.100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA	NA	NA	NA	NA	NA	NA	<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.100	<0.050	<0.050	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.250	<0.100	<0.050	<0.250	<0.050	<0.250	<0.100	<0.050	<0.100	<0.100	<0.100	<0.250	<0.250	<0.250	<0.250
Arsenic	mg/L	0.0009	0.0006	<0.0025	<0.001	<0.0010	0.0006	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	0.0005	<0.0025	<0.0025	<0.0025	<0.0010	<0.0005	0.0007	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0001	<0.0005	<0.0025	<0.0025	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025
Copper	mg/L	0.0020	0.0019	0.0018	0.0030	0.002	0.0021	0.0021	0.0012	0.0020	<0.0025	0.0013	0.0006	0.0028	<0.0025	<0.0025	0.0033	0.0031	0.0049	0.0038	0.0060	0.0119	0.0043	0.0035	<0.0100
Iron	mg/L	0.132	0.151	0.125	0.121	0.151	0.379	0.287	0.209	0.285	<0.250	<0.100	0.216	<0.250	0.304	<0.250	0.154	0.129	0.212	0.161	0.178	0.255	<0.250	<0.250	
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.001	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0005	<0.0025	<0.0025	<0.0010	<0.0005	<0.0005	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Manganese	mg/L	0.845	0.997	1.37	1.08	0.937	0.357	0.902	0.892	0.419	0.816	1.03	0.943	1.21	0.98	1.4	1.34	1.26	1.35	0.974	0.982	0.507	0.842	1.64	1.33
Mercury (dissolved)	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							
Mercury (dissolved low-level)	ng/L																		<5.00	<100	<100	<100	<100	<100	<100
Molybdenum	mg/L	0.0020	0.002	0.002	0.0019	0.0017	0.0014	0.0020	0.0017	0.0013	<0.0025	0.0018	0.0017	<0.0025	<0.0025	<0.0025	0.0017	0.0017	0.0018	0.0019	0.0017	<0.0025	<0.0025	<0.0025	<0.0025
Selenium	mg/L	0.0027	0.0025	0.0025	<0.002	0.0025	0.0016	<0.0020	<0.0020	<0.0020	<0.0050	<0.0020	0.0022	<0.0050	<0.0050	<0.0050	<0.0020	0.0015	0.0019	0.0020	0.0029	<0.0050	<0.0050	<0.0050	<0.0050
Silica (SiO2)	mg/L	14.1	15.9	16.2	15.9	14.1	13.2	15.4	14.9	12.2	12.9	13.8	15.7	14.6	14.8	15.4	16.0	15.2	14.5	15.9	14.3	12.7	14.7	15.8	14.7
Silicon	mg/L	6.58	7.42	7.58	7.44	6.6	6.19	7.20	6.96	5.72	6.05	6.43	7.33	6.82	6.91	7.19	7.50	7.13	6.76	7.43	6.69	5.91	6.85	7.37	6.89
Uranium	mg/L	0.0025	0.0024	0.0024	0.0032	0.0036	0.0044	0.0029	0.0023	0.0039	0.0032	0.0024	0.0032	<0.0025	<0.0025	<0.0025	0.0025	0.0022	0.0025	0.0034	0.0035	0.0048	0.0036	0.0026	0.0030
Zinc	mg/L	0.0216	0.0225	0.0214	0.0172	0.0175	0.0128	0.0138	0.0108	0.0122	0.0132	0.0118	0.0098	0.0130	0.0116	0.0311	0.0276	0.0162	0.0180	0.0157	0.0157	0.0156	0.0152	0.0255	0.0164

Notes & Definitions:

Historical data prior to 2018 can be found in earlier posted versions of this table

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

GCC Energy Hydrologic Monitoring Data

MW-HGA-4																										
Year	2018				2019				2020				2021				2022				2023					
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Month	1	2	5	8	11	2	5	8	11	2	5	8	12	2	5	8	11	2	5	8	12	3	5	8	11	
Sample Date	1/3	2/22	5/15	8/9	11/8	2/28	5/23	8/16	11/13	2/13	5/13	8/26	12/14	2/22	5/19	8/12	11/12	2/28	5/9	8/9	12/16	3/28	5/18	8/18	11/29	
Lab Analysis (Y/N)	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																										
Purge Flow Rate	gpm	NM	0.1	1.5	2.00	1.00	1.12	1.00	1.00	0.25	1.00	0.25	0.25	0.13	0.25	0.13	0.25	0.25	0.25	0.25	0.50	0.08	0.23	0.10	0.05	
Total Purged	gal	19	21	21	19	21	24	22	21	21	22	21	20	21	21	21	20	22	21	21	22	0.5	0.4	0.5	0.25	0.2
Depth to Water	ft bgs	1.37	0.55	2.60	3.98	1.90	0.49	0.42	1.95	1.15	0.38	2.36	3.80	1.75	0.90	2.91	3.95	2.33	0.95	2.02	1.61	0.92	0.47	1.03	4.05	0.85
Temperature	deg C	8.8	7.8	8.1	8.7	8.8	7.6	7.7	8.5	8.8	7.9	7.4	9.2	8.6	7.8	8.2	8.9	9.2	8.3	8.1	9.2	9.1	8.2	10.0	11.5	8.3
pH	SU	7.33	7.30	7.18	7.27	7.05	7.15	7.18	7.16	7.09	7.12	7.23	7.28	7.31	7.29	7.34	7.37	7.31	7.25	7.28	7.19	6.93	7.62	7.45	7.53	7.49
Specific Conductance	µS/cm	1141	1154	1098	1057	1167	1183	1102	1083	1127	1122	1093	1022	1158	975	1093	1108	1160	1197	1102	1198	970	1003	955	908	993
Oxygen Reduction Potential	mV	-96.6	-157.3	-130.9	-230.8	-190.9	-128.3	-140.7	-130.9	-104.9	-107.8	-86.7	-61.1	-64.7	-67.9	-116.8	-104.9	-105.8	-185.5	-113.0	-273.0	-198.3	-129.2	-125.2	-165.3	-212.7
Lab Analytical Results:																										
Hardness as CaCO3	mg/L		561	555	524	625	613	563	544	624	563	528	571	612	630	582	515	627	598	574	653	328	423	448	467	424
pH (Lab)	SU		7.58	8.15	7.33	7.12	7.2	8.17	6.95	6.88	6.78	6.89	7.07	6.95	7.38	6.89	7.05	7.03	7.22	7.26	7.20	7.63	7.08	7.37	7.33	7.41
Total Dissolved Solids (Lab)	mg/L		740	730	695	770	795	695	695	715	705	685	700	665	685	680	735	790	790	785	745	400	555	545	525	555
Calcium	mg/L		110	108	102	124	122	110	106	123	112	101	111	122	126	114	98.7	125	119	110	130	65.8	78.5	84.9	88.1	79.3
Magnesium	mg/L		69.3	69	65.4	76.5	74.7	70.3	67.9	76.8	68.9	67.0	71.7	74.9	76.8	72	65.2	76.6	72.9	72.5	79.9	39.7	55.1	57.2	59.9	54.9
Sodium	mg/L		26.5	30.4	29.9	27.6	27	28.6	28.3	31.9	27.9	30.3	30.5	26.8	28.4	27.4	26.4	23.1	23.9	28.1	27.1	14.9	36.9	39.4	41.5	38.0
Potassium	mg/L		2.17	2.22	2.33	2.13	2.16	2.00	2.10	2.38	2.05	2.06	2.08	2.11	2.24	2.03	<5.00	<5.00	1.82	2.02	2.13	3.07	2.16	2.40	2.56	2.21
Alkalinity, Total	mg/L		460	425	410	460	455	445	455	432	435	416	485	457	475	465	470	580	470	435	500	245	460	420	361	370
Alkalinity, Bicarbonate	mg/L		460	425	410	460	455	445	455	432	435	416	485	457	475	465	470	580	470	435	500	245	460	420	361	370
Alkalinity, Carbonate	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	<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		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L		8.43	7.57	6.47	9.40	10.5	8.06	8.44	9.46	8.39	7.64	8.78	10.1	9.65	9.41	11.1	13.9	12.0	10.2	14.6	28.7	3.40	3.41	3.62	3.56
Fluoride	mg/L		0.496	0.459	0.482	0.487	0.484	0.456	0.443	0.520	0.447	0.449	0.431	0.473	0.424	0.434	<0.500	0.420	0.472	0.413	0.450	0.231	0.397	0.357	0.374	0.331
Sulfate as SO4	mg/L		222	190	169	201	221	186	212	190	193	181	179	187	191	184	194	199	216	183	215	99.5	150	161	158	143
Total Organic Carbon (TOC)	mg/L		4.56	4.57	4.30	4.72	4.82	4.45	4.58	4.35	4.8	4.30	4.56	4.67	4.31	4.36	4.55	4.84	5.47	4.21	4.64	0.964	4.32	6.87	4.55	3.84
Nitrate/Nitrite as N	mg/L		<0.020	<0.020	<0.020	<0.020	0.173	<0.020	<0.020	<0.020	<0.020	<0.100	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.073	<0.020	<5.00	<0.100	<0.020
Ammonia as N ^	mg/L		NA	NA	NA	NA	NA	NA	NA	0.528	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA	NA	NA	NA	NA	NA	NA	<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.100	<0.100	<0.050	<0.050	<0.050	<0.250	<0.250	<0.050	<0.050	<0.050	<0.050	<0.100	<0.050	<0.100	<0.100
Arsenic	mg/L		0.0037	0.0034	0.0036	0.0032	0.0031	0.0029	0.0028	0.0033	0.0022	0.0025	0.0026	0.0038	0.0036	0.0033	0.0034	0.0027	0.0036	0.0031	0.0034	0.0005	0.0041	0.0040	0.0040	0.0039
Cadmium	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0010
Copper	mg/L		0.0006	0.0008	0.0004	0.0008	<0.0010	0.0003	0.0004	0.0002	0.0005	<0.0010	<0.0010	<0.0005	0.0006	0.0007	0.0009	<0.0025	<0.0005	0.0010	0.0005	0.0068	<0.0010	0.0027	<0.0010	<0.0040
Iron	mg/L		7.60	7.92	8.55	8.44	8.35	7.98	8.38	9.76	8.59	8.22	8.95	9.31	9.6	9.29	8.52	8.44	8.25	9.41	9.73	<0.05	9.76	10.5	9.39	9.53
Lead	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010
Manganese	mg/L		1.99	1.81	1.58	2.13	2.56	2.12	1.84	1.78	1.77	1.49	1.66	2.36	2.54	2.51	1.79	2.86	3.03	2.29	3.00	0.0622	0.479	0.441	0.422	0.454
Mercury (dissolved)	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	<0.0002					
Mercury (dissolved low-level)	ng/L																				<5.00	<100	<100	<100	<100	<100
Molybdenum	mg/L		0.0030	0.0031	0.0038	0.0029	0.0026	0.0027	0.0029	0.0031	0.0025	0.0030	0.0032	0.0029	0.0027	0.003	0.0033	0.0024	0.0026	0.0030	0.0030	0.0011	0.0054	0.0055	0.0057	0.0055
Selenium	mg/L		<0.0010	0.002	0.0016	<0.001	0.001	<0.0010	<0.0010	<0.0010	<0.001	<0.0010	<0.0020	<0.001	<0.0010	0.001	0.0057	0.0017	0.0011	<0.0010	0.0010	0.0011	<0.0020	<0.0010	<0.0020	<0.0020
Silica (SiO2)	mg/L		15.8	16.4	15.7	17.3	15.9	14.9	14.9	16.5	15.2	13.9	15.4	18.3	16.9	16.3	14.3	17.7	16.7	16.0	17.8	11.7	12.6	14.1	14.0	13.0
Silicon	mg/L		7.37	7.67	7.34	8.10	7.46	6.96	6.96	7.69	7.09	6.48	7.21	8.56	7.88	7.61	6.68	8.29	7.81	7.50	8.34	5.48	5.89	6.59	6.57	6.06
Uranium	mg/L		0.0004	0.0004	0.0003	0.0005	0.0005	0.0004	0.0004	0.0003	<0.0005	<0.0010	<0.0010	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0010	<0.0005	<0.0010	<0.0010
Zinc	mg/L		<0.002	<0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0040	<0.0040	<0.0020	<0.0020	<0.0020	<0.0100	<0.0020	<0.0020	<0.0020	0.0056	<0.0040	<0.0020	<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)
 - ng/L nanogram per liter
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	2018								2019				2020				2021				2022				2023					
Quarter	Q1		Q2		Q3		Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Month	1	2	3	4	5	6	7	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11	
Sample Date	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	5/28	9/1	11/16	2/15	5/20	8/23	11/17	3/17	6/14	9/12	12/4	3/18	6/14	8/16	11/14	
Lab Analysis (Y/N)	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																														
Purge Flow Rate	gpm	NM	0.1	NM	0.1	0.1	***	0.12	0.10	0.09	0.12	0.12	0.06	0.25	0.25	0.25	0.13	0.13	0.13	0.13	0.25	0.25	0.25	0.25	0.15	0.25	0.08	0.10	0.10	0.18
Total Purged	gal	1.5	2	1.5	1	1.3		1.5	1.5	1.6	1.0	1.5	1.1	1.5	1.0	1.0	1.0	1.3	1.0	2.0	1.0	1.3	1.0	1.0	1.0	1.0	0.8	0.8	0.8	0.8
Depth to Water	ft bgs	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	215.85	215.56	215.80	215.60	215.53	215.71	215.65	215.55	216.15	215.65	215.70	215.60	215.20	215.35	215.30
Temperature	deg C	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	9.1	9.6	9.4	8.4	9.6	10.1	9.2	9.5	10.2	10.5	9.0	8.6	10.8	11.0	9.0
pH	SU	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	7.18	7.22	7.24	7.19	7.30	7.35	7.17	7.22	7.31	7.29	6.82	7.34	7.49	7.37	7.54
Specific Conductance	µS/cm	1700	1723	1735	1647	1761		1734	1815	1781	1776	1681	1757	1737	1797	1855	1664	1670	1550	1647	1691	1792	1707	1717	1770	1733	1780	1676	1745	1738
Oxygen Reduction Potential	mV	-44.6	-52.8	-37.5	142.4	0.4		-26.4	-33.2	101.4	-11.8	25.4	-18.7	3.6	12.7	4.2	-20.1	111.4	23.8	-13.4	-6.5	38.2	-110.5	-51.9	-159.7	-29.9	4.8	93.8	4.0	-32.1
Lab Analytical Results:																														
Hardness as CaCO3	mg/L		159			156			160	174	159	153	148	150	159	165	161	168	168	150	158	157	152	149	146	172	174	158	150	166
pH (Lab)	SU		7.22			7.45			7.17	7.27	7.13	7.03	7.14	6.92	7.19	6.91	7.23	7.17	7.22	7.13	7.1	7.05	7.30	7.15	7.36	7.37	7.01	7.20	7.38	7.39
Total Dissolved Solids (Lab)	mg/L		1100			1150			1040	1130	1160	1150	1150	1140	1190	1150	1150	1170	1250	1150	1190	1150	1140	1140	1150	1050	1150	1180	1200	1110
Calcium	mg/L		30.5			29.7			30.9	34.0	31.2	29.8	27.9	29.0	30.9	31.6	30.6	32.8	32.1	28.3	29.9	30.0	28.5	28.0	27.4	32.6	33.2	29.9	27.7	31.2
Magnesium	mg/L		20.1			19.9			20.1	21.5	19.7	19.1	18.9	18.8	19.9	20.8	20.6	20.9	21.4	19.2	20.3	20.0	19.7	19.2	18.7	21.9	22.0	20.2	19.6	21.3
Sodium	mg/L		348			327			333	358	357	319	348	333	337	349	348	353	357	314	333	340	321	319	318	361	351	345	333	324
Potassium	mg/L		<5.00			2.12			2.23	2.47	2.34	2.18	2.29	2.12	2.13	<5.00	2.29	<3.00	<5.00	2.18	<5.00	2.34	2.23	2.01	2.12	2.11	<5.00	2.15	<5.00	<2.00
Alkalinity, Total	mg/L		415			353			385	395	375	355	368	420	360	340	325	366	400	400	370	440	405	425	410	361	372	391	368	375
Alkalinity, Bicarbonate	mg/L		415			353			385	395	375	355	368	420	360	340	325	366	400	400	370	440	405	425	410	361	372	391	368	375
Alkalinity, Carbonate	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	<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		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L		2.19			<5.00			2.12	2.20	2.74	2.33	2.72	2.66	2.74	2.71	2.74	2.88	2.73	2.34	2.78	<5.00	2.80	2.46	2.59	2.40	2.49	2.71	2.55	2.50
Fluoride	mg/L		0.240			<0.5			0.260	0.240	0.266	0.242	0.252	0.246	0.234	0.228	0.24	0.264	0.212	0.223	0.24	<0.5	<0.200	0.250	0.254	0.246	0.262	0.198	0.224	<0.200
Sulfate as SO4	mg/L		518			522			515	511	508	494	537	495	506	532	510	508	553	531	507	458	503	516	532	517	562	607	587	510
Total Organic Carbon (TOC)	mg/L		1.51			1.54			1.60	1.75	1.61	1.67	1.59	1.50	1.55	1.55	1.49	1.57	1.58	1.49	1.57	1.51	1.56	1.41	1.39	1.41	1.63	1.76	1.55	1.55
Nitrate/Nitrite as N	mg/L		<0.020			<0.020			<0.020	0.028	<0.020	<0.020	<0.020	0.020	<0.020	0.046	<0.020	<0.020	<0.020	<0.020	0.036	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L		NA			NA			NA	NA	NA	NA	NA	0.387	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA			NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.250			<0.050			<0.050	<0.100	<0.100	<0.050	<0.050	<0.050	<0.100	<0.250	<0.050	<0.050	<0.250	<0.050	<0.250	<0.100	<0.050	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	<0.100
Arsenic	mg/L		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0005	<0.0015	<0.0015	<0.0025	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0010
Cadmium	mg/L		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0001	<0.0003	<0.0015	<0.0025	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0010
Copper	mg/L		0.0066			0.0041			0.0048	0.0048	0.0075	0.0064	0.0040	0.0147	0.0034	0.0012	0.004	0.0024	0.0026	0.0059	0.0068	0.0086	0.0145	0.0112	0.0096	0.0078	0.0121	0.0193	0.0046	0.0079
Iron	mg/L		0.590			0.614			0.644	0.647	0.581	0.589	0.613	0.510	0.614	0.559	0.637	0.579	0.572	0.61	0.592	0.647	0.533	0.544	0.451	0.406	<0.250	<0.250	<0.250	0.437
Lead	mg/L		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0015	<0.0015	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0010
Manganese	mg/L		0.0279			0.026			0.0242	0.0282	0.0281	0.0235	0.0270	0.0248	0.0303	0.0329	0.032	0.0313	0.0367	0.0316	0.0328	0.0287	0.0289	0.0295	0.0359	0.0260	0.0149	0.0027	0.0128	0.0400
Mercury (dissolved)	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	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Mercury (dissolved low-level)	ng/L																													
Molybdenum	mg/L		<0.0025			0.0009			0.0008	0.0007	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0015	<0.0015	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Selenium	mg/L		<0.0050			<0.0010			<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0020
Silica (SiO2)	mg/L	</																												

GCC Energy Hydrologic Monitoring Data

MW-1-MI																														
Year	2018										2019				2020				2021				2022				2023			
Quarter	Q1			Q2			Q3			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Month	1	2	3	4	5	6	7	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11	
Sample Date	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	5/28	9/1	11/16	2/15	5/20	8/23	11/17	3/17	6/14	9/12	12/4	3/18	6/14	8/16	11/14	
Lab Analysis (Y/N)	N	N	N	N	N	N	N	Y	N	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	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 (dissolved)	mg/L																													
Mercury (dissolved low-level)	ng/L																													
Molybdenum	mg/L																													
Selenium	mg/L																													
Silica (SiO2)	mg/L																													
Silicon	mg/L																													
Uranium	mg/L																													
Zinc	mg/L																													

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table*
 - *** La Plata County stage 3 fire restrictions prevented sampling activity*
 - Y/N yes or no
 - gpm gallons per minute
 - deg C degrees Celsius
 - SU standard pH units
 - µS/cm microsiemens per centimeter
 - mV millivolts
 - mg/L milligram per liter
 - pCi/L picocuries per liter
 - NM not measured (field)
 - NA not analyzed (lab)
 - ng/L nanogram per liter
1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
 3. Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

GCC Energy Hydrologic Monitoring Data

MW-1-C																															
Year	2018										2019				2020				2021				2022				2023				
Quarter	Q1		Q2		Q3		Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Month	1	2	3	4	5	6	7	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11		
Sample Date	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	5/28	9/1	11/16	2/15	5/20	8/23	11/17	3/17	6/14	9/12	12/4	3/19	6/14	8/16	11/14		
Lab Analysis (Y/N)	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N		
Field Parameters:																															
Purge Flow Rate	gpm	MM	0.1	NM	0.1	0.1	***	0.05	0.1	0.10	0.06	0.02	0.03	0.01	0.01	0.10	0.05	0.05	0.05	0.05	0.01	0.13	0.13	0.13	0.13	0.15					
Total Purged	gal	1	1	1	1	1.25		1	1	1.10	1.00	1.10	1.00	1.00	1.00	0.75	0.80	1.00	1.00	2.00	1.00	1.25	1.00	1.00	1.00	1.00					
Depth to Water	ft bgs	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	216.10	216.41	216.66	216.66	216.66	216.66	216.66	216.66	216.66	216.66	216.66					
Temperature	deg C	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	9.5	11.2	9.7	7.0	10.7	12.1	10.1	7.7	12.3	12.7	7.4					
pH	SU	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	6.85	6.93	6.99	7.40	7.18	7.16	7.15	7.12	7.20	7.23	6.67					
Specific Conductance	µS/cm	2778	2738	2751	2700	2749		2693	2675	2751	2621	3139	3172	3080	3005	3002	2653	2709	2410	2249	2290	2554	2223	2362	2278	2104					
Oxygen Reduction Potential	mV	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	-57.7	21.8	49.6	57.5	-16.8	0.0	-7.0	-92.9	-49.3	-191.8	-77.0					
Lab Analytical Results:																															
Hardness as CaCO3	mg/L		1190			1130			1120	1180	1010	1820	1840	1700	1600	1590	1400	1420	1320	953	975	920	750	766	638	640					
pH (Lab)	SU		7.22			7.2			7.20	7.02	7.24	6.93	6.67	6.63	6.80	6.62	6.83	7.12	7.08	6.86	7.04	6.89	7.22	7.06	7.40	6.98					
Total Dissolved Solids (Lab)	mg/L		2360			2340			2170	2200	1960	2880	2890	2750	2610	2460	2420	2450	2330	1910	1850	1840	1680	1770	1640	1490					
Calcium	mg/L		219			203			203	219	188	340	342	318	301	294	248	265	241	175	178	168	142	137	113	117					
Magnesium	mg/L		156			150			148	154	131	237	240	219	207	207	189	183	173	126	129	122	95.7	103	86.6	84.4					
Sodium	mg/L		260			239			239	255	265	146	119	119	143	155	168	194	206	196	214	234	229	240	261	266					
Potassium	mg/L		<5.00			3.07			3.04	2.65	3.13	<5.00	<5.00	<5.00	3.05	<5.00	2.82	<5.00	<5.00	2.68	<5.00	<3.00	2.68	2.48	<5.00	2.27					
Alkalinity, Total	mg/L		570			580			560	410	525	530	518	505	515	490	445	520	580	480	485	640	510	530	570	454					
Alkalinity, Bicarbonate	mg/L		570			580			560	410	525	530	518	505	515	490	445	520	580	480	485	640	510	530	570	454					
Alkalinity, Carbonate	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	<10.0	<10.0	<10.0	<10.0	<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	<10.0	<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		7.78			7.75			5.97	6.22	6.36	10.2	9.31	8.78	8.54	8.20	8.15	7.14	7.13	5.3	5.04	7.12	4.87	5.55	5.59	4.32					
Fluoride	mg/L		1.03			0.96			0.888	0.924	0.975	0.67	0.525	0.565	0.615	0.695	0.705	0.750	0.804	0.654	0.716	0.755	0.712	1.04	1.24	0.916					
Sulfate as SO4	mg/L		1160			1210			1090	1080	1070	1630	1730	1520	1400	1370	1280	1180	1150	940	872	886	805	908	821	728					
Total Organic Carbon (TOC)	mg/L		2.21			2.2			2.35	2.37	2.32	2.62	2.52	2.30	2.30	2.32	2.2	2.13	2.26	1.92	1.93	1.91	1.79	1.80	1.74	1.77					
Nitrate/Nitrite as N	mg/L		<0.020			<0.020			0.036	<0.020	<0.020	<0.020	<0.020	<0.020	<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		NA			NA			NA	NA	NA	NA	NA	0.140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
Ortho-Phosphate as P ^	mg/L		NA			NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
Aluminum	mg/L		<0.250			<0.05			<0.05	<0.100	<0.100	<0.250	<0.250	<0.250	<0.150	<0.250	<0.050	<0.050	<0.250	<0.100	<0.250	<0.150	<0.050	<0.100	<0.250	<0.100					
Arsenic	mg/L		<0.0025			0.0051			0.0052	0.0035	0.0038	0.0048	0.0034	<0.0025	<0.0025	0.0019	<0.0025	<0.0005	<0.0025	<0.0025	<0.0025	<0.0010	0.0009	0.0024	0.0028	<0.0010					
Cadmium	mg/L		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0002	<0.0005	<0.0005	<0.0003	<0.0005	<0.0001	<0.0005	<0.0025	<0.0025	<0.0010	<0.0005	<0.001	<0.0025	<0.0010					
Copper	mg/L		0.0052			0.003			0.0049	0.0033	0.0054	0.0057	0.0014	0.0096	<0.0025	<0.0015	<0.0025	<0.0005	<0.0025	0.0042	0.0043	0.0064	0.0093	0.0086	0.0104	0.0120					
Iron	mg/L		<0.250			0.643			1.01	1.12	0.988	2.3	0.819	0.543	0.570	0.606	0.619	0.855	0.769	0.552	0.573	0.724	0.630	0.671	0.679	<0.100					
Lead	mg/L		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025	<0.0025	<0.0015	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0005	<0.0010	<0.0025	<0.0010						
Manganese	mg/L		0.0989			0.153			0.140	0.106	0.0807	0.075	0.0562	0.0512	0.0537	0.0473	0.0445	0.0496	0.0482	0.0419	0.0383	0.0346	0.0362	0.0342	0.0304	0.0295					
Mercury (dissolved)	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	<0.0002	<0.0002					
Mercury (dissolved low-level)	ng/L																														
Molybdenum	mg/L		<0.0025			0.0006			<0.0025	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025	<0.0025	<0.0015	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0005	<0.0010	<0.0025	<0.0010					
Selenium	mg/L		<0.0050			<0.001			<0.0050	0.0011	<0.0020	0.0016	0.0023	<0.0050	<0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0010	<0.0020	<0.005	<0.002					
Silica (SiO2)	mg/L		14.8			15.2			14.7	14.5	14	16.6	17.3	16.4	15.7	13.8	14.1	14.8	14.4	15.0	14.5	14.8	14.2	13.0	11.7	13.4					
Silicon	mg/L		6.94			7.09			6.87	6.78	6.55	7.75	8.07	7.65	7.35	6.47	6.6	6.93	6.75	7.00	6.79	6.94	6.66	6.07	5.47	6.26					
Uranium	mg/L		0.0024			0.0025			0.0022	0.0021	0.0016	0.002	0.0025	0.0023	<0.0025	0.0020	<0.0025	<0.0015	<0.0025	<0.0025	<0.0025	0.0010	0.0008	<0.0010	<0.0025	<0.0010					
Zinc	mg/L		<0.0100			0.0062			<0.0100	0.0055	<0.0040	0.0085	0.0077	<0.0100	<0.0100	<0.0060	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0021	<0.0040	<0.0100	0.0071					

Notes & Definitions:

- *** Historical data prior to 2018 can be found in earlier posted versions of this table
 - *** 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)
 - ng/L nanogram per liter
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	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2		Q3	Q4		Q1		Q2	Q3		Q4		Q1		Q2	Q3		Q4		Q1		Q2	Q3		Q4	
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11	
Sample Date	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11	5/27	9/1	11/24	2/15	5/20	8/24	11/17	3/23	6/14	9/8	12/4	3/31	6/14	8/18	11/13	
Lab Analysis (Y/N)	N	N	N	N	N	N	N	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	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 (dissolved)	mg/L																											
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L																											
Selenium	mg/L																											
Silica (SiO2)	mg/L																											
Silicon	mg/L																											
Uranium	mg/L																											
Zinc	mg/L																											

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table*
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| <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> <p>ng/L nanogram per liter</p> | <ol style="list-style-type: none"> 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. |
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GCC Energy Hydrologic Monitoring Data

MW-2-MI																												
Year	2018							2019				2020				2021				2022				2023				
Quarter	Q1		Q2		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11	
Sample Date	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11	5/27	9/1	11/24	2/15	5/20	8/24	11/17	3/23	6/14	9/8	12/4	3/31	6/14	8/18	11/13	
Lab Analysis (Y/N)	N	N	N	N	N	N	N	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	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 (dissolved)	mg/L																											
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L																											
Selenium	mg/L																											
Silica (SiO2)	mg/L																											
Silicon	mg/L																											
Uranium	mg/L																											
Zinc	mg/L																											

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table*
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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> <p>ng/L nanogram per liter</p> | <p>1.</p> <p>2.</p> <p>3.</p> | <p>"<" 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.</p> <p>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.</p> <p>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.</p> |
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GCC Energy Hydrologic Monitoring Data

MW-2-C																												
Year	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2		Q3	Q4		Q1		Q2	Q3		Q4		Q1		Q2	Q3		Q4		Q1		Q2	Q3		Q4	
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	9	11	2	5	8	11	3	6	9	12	3	6	8	11	
Sample Date	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6	2/11	5/27	9/1	11/24	2/15	5/20	8/24	11/17	3/23	6/14	9/8	12/4	3/31	6/14	8/18	11/13	
Lab Analysis (Y/N)	N	N	N	N	N	N	N	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	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 (dissolved)	mg/L																											
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L																											
Selenium	mg/L																											
Silica (SiO2)	mg/L																											
Silicon	mg/L																											
Uranium	mg/L																											
Zinc	mg/L																											

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table*
- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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> <p>ng/L nanogram per liter</p> | <ol style="list-style-type: none"> 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. |
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GCC Energy Hydrologic Monitoring Data

MW-3-A																												
Year	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	8	12	2	5	8	11	2	5	9	11	3	6	8	11	
Sample Date	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/14	11/12	2/4	5/26	8/31	12/1	2/10	5/18	8/10	11/9	2/24	5/11	9/6	11/18	3/16	6/15	8/8	11/16	
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																												
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.10	0.12	0.15	0.06	0.25	0.12	0.13	0.13	0.13	0.05	0.13	0.15	0.13	0.25	0.25	0.13	0.04	0.13	0.11	0.15	0.15
Total Purged	gal	1.3	1.5	1.5	1.0	1.3	1.0	1.1	1.5	1.3	1.3	1.5	1.1	1.2	1.5	1.3	1.3	1.5	1.5	1.5	1.5	2.0	1.5	1.1	1.1	1.1	1.1	1.1
Depth to Water	ft bgs	298.37	298.04	297.86	297.76	298.17	298.55	298.27	297.85	296.79	297.27	297.33	296.47	296.87	297.21	297.02	296.97	296.72	297.47	297.46	296.67	296.74	296.96	296.62	295.59	295.32	295.97	295.81
Temperature	deg C	11.8	11.7	12.2	11.9	13.5	13.5	11.9	11.8	12.1	NM	13.1	11.5	13.2	13.1	11.9	12.1	12.4	13.6	12.2	11.4	13.0	15.6	12.2	11.8	12.7	15.2	11.8
pH	SU	8.54	8.52	8.61	8.21	8.38	8.30	8.31	8.28	8.31	8.13	8.51	8.11	8.26	8.23	8.39	8.53	8.46	8.42	8.47	8.35	8.21	8.12	8.66	8.06	7.97	8.63	8.50
Specific Conductance	µS/cm	2528	2506	2458	2415	2253	2336	2391	2355	2309	NM	2204	2211	2249	2112	2192	1930	1525	2091	2127	2121	2055	2066	2057	2094	2050	1374	903
Oxygen Reduction Potential	mV	-120.3	-125.2	-181.6	-135.8	-138.2	-155.8	-164.6	-145.9	-132.3	-138.6	-120.1	-65.7	-156.8	-98.8	-89.3	-101.3	-157.1	-149.0	-156.8	-221.2	-124.2	-269.9	-199.6	-43.5	-91.0	-162.4	-256.7
Lab Analytical Results:																												
Hardness as CaCO3	mg/L		11.5			11.2	12.6	14.1	11.9	10.7	10.4	11.1	10.8	10.3	11.1	9.41	10.5	8.14	8.89	8.68	8.56	9.01	9.33	7.59	8.38	8.76	5.89	9.30
pH (Lab)	SU		8.45			8.36	8.37	8.24	8.28	8.29	8.27	8.39	8.09	7.68	8.16	8.13	8.13	8.22	8.21	8.19	8.17	8.28	8.09	8.15	7.63	7.97	8.40	8.37
Total Dissolved Solids (Lab)	mg/L		1680			1670	1600	1540	1500	1530	1520	1510	1500	1460	1380	1460	1410	1350	1420	1360	1220	1400	1320	1280	1390	1310	1300	1290
Calcium	mg/L		3.33			3.2	3.71	4.15	3.55	3.16	3.08	3.34	3.14	3.07	3.02	2.83	3.07	2.48	2.59	2.53	2.42	2.63	2.59	2.21	2.42	2.51	2.36	2.57
Magnesium	mg/L		0.776			0.774	0.811	0.913	0.739	0.692	0.655	0.680	0.723	0.645	0.866	0.568	0.698	0.475	0.586	0.577	0.610	0.594	0.694	0.503	0.570	0.603	< 0.500	0.702
Sodium	mg/L		562			542	562	605	543	525	553	528	520	507	510	505	536	471	462	448	462	473	476	420	440	456	450	459
Potassium	mg/L		<2.00			1.8	<2.00	2.17	<2.00	1.92	<2.00	<5.00	<3.00	<5.00	<5.00	<5.00	<5.00	<3.00	<5.00	<2.00	1.34	<2.00	<2.00	<5.00	<5.00	<5.00	<5.00	<3.00
Alkalinity, Total	mg/L		430			480	480	475	540	450	459	420	460	430	440	470	520	530	465	485	495	560	500	400	454	458	447	465
Alkalinity, Bicarbonate	mg/L		360			480	420	385	330	430	423	420	460	400	440	450	520	530	465	435	455	480	500	400	454	458	415	455
Alkalinity, Carbonate	mg/L		70.0			<10.0	60.0	90.0	210	20	36.0	<10.0	<10.0	30.0	<10.0	20	<10.0	<10.0	<10.0	50.0	40.0	80.0	<10.0	<10.0	<10.0	<10.0	32.0	< 10.0
Alkalinity, Hydroxide	mg/L		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	< 10.0
Chloride	mg/L		16.4			16.1	15.1	16.0	15.2	15	15.0	14.7	13.9	13.9	13.5	14	13.5	14	14.1	14.6	14.2	14.2	15.9	15.4	16.0	16.1	16.9	16.2
Fluoride	mg/L		<0.500			<0.5	NA	0.383	0.406	0.404	0.396	<0.500	0.370	0.374	0.366	0.372	0.336	0.352	0.366	0.314	0.356	0.324	0.362	<0.500	<0.500	0.316	< 0.500	0.284
Sulfate as SO4	mg/L		812			756	706	682	716	699	724	633	637	656	624	644	600	601	599	515	584	555	557	565	571	573	560	552
Total Organic Carbon (TOC)	mg/L		5.32			4.7	4.62	4.52	4.15	4.10	3.84	3.81	3.42	3.48	3.39	3.15	3.16	3.18	3.01	3.02	2.96	2.84	3.02	1.54	3.04	<2.5	4.44	2.93
Nitrate/Nitrite as N	mg/L		<0.020			<0.020	<0.020	<0.020	0.266	<0.020	<0.020	<0.020	0.024	0.026	0.039	0.032	<0.020	0.024	<0.020	<0.020	0.022	0.030	<0.020	<0.020	0.117	0.061	< 0.020	< 0.020
Ammonia as N ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.354	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.0730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.100			<0.050	<0.050	<0.100	<0.100	<0.050	<0.100	<0.250	<0.150	<0.250	<0.250	<0.250	<0.250	<0.150	<0.250	<0.100	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	< 0.250	< 0.150
Arsenic	mg/L		<0.0025			0.0006	<0.0025	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	0.0026	0.0006	0.001	0.0018	0.0009	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	< 0.0025	< 0.0025
Cadmium	mg/L		<0.0005			<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	< 0.0025	< 0.0025
Copper	mg/L		0.0236			0.0063	0.0117	0.0086	0.0137	0.0078	0.0067	0.0039	0.0037	0.0021	0.0051	0.0055	0.0037	0.0157	0.0156	0.0113	0.0088	0.0114	0.0189	0.0106	0.0155	0.0196	0.0065	0.0096
Iron	mg/L		<0.100			<0.05	<0.05	<0.100	<0.100	<0.050	<0.100	<0.250	<0.150	<0.250	<0.250	<0.250	<0.250	<0.150	<0.250	<0.100	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	< 0.250	< 0.150
Lead	mg/L		<0.0025			<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.0010	<0.0010	<0.0005	<0.001	<0.002	<0.0010	<0.0025	<0.0025	< 0.0025	< 0.0025
Manganese	mg/L		0.0232			0.018	0.0222	0.0187	0.0172	0.0185	0.0166	0.0140	0.0162	0.0136	0.0120	0.0125	0.0128	0.0121	0.0096	0.0101	0.0113	0.0100	0.0097	0.0108	0.0119	0.0096	0.0098	0.0091
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002							
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L		0.0065			0.0046	0.0043	0.0033	0.003	0.003	0.0018	0.0027	0.0022	0.0015	<0.0025	<0.0025	<0.0025	0.0015	0.0013	<0.001	0.0012	<0						

GCC Energy Hydrologic Monitoring Data

MW-3-MI																												
Year	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2		Q3	Q4		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4		
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	8	12	2	5	8	11	2	5	9	11	3	6	8	11	
Sample Date	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/21	11/12	2/4	5/26	8/31	12/1	2/10	5/18	8/10	11/9	2/24	5/11	9/6	11/18	3/16	6/15	8/8	11/16	
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																												
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.10	0.12	0.12	0.06	0.25	0.50	0.25	0.13	0.13	0.10	0.13	0.13	0.25	0.25	0.25	0.15	0.10	0.11	0.12	0.26	0.33
Total Purged	gal	1.3	1.5	1.5	1.0	1.3	1.0	1.1	1.5	1.3	2.0	1.0	1.5	1.3	1.8	1.3	1.3	1.5	1.5	1.3	1.5	2.0	1.3	1.3	1.1	1.1	1.1	1.1
Depth to Water	ft bgs	240.73	240.55	240.65	240.84	241.04	241.97	242.13	242.15	242.32	246.55	243.07	242.85	243.05	243.6	243.9	243.93	244.25	244.28	244.15	242.90	244.05	244.65	244.3	243.83	249.55	242.86	242.65
Temperature	deg C	11.9	11.3	11.9	11.8	12.6	13.0	12.4	11.6	11.3	13.2	12.3	11.6	12.6	12.8	11.7	11.5	12.8	13.0	11.9	11.4	13.2	13.7	11.6	11.7	12.5	13.1	12.3
pH	SU	8.84	8.83	8.84	8.51	8.48	8.49	8.46	8.51	8.55	8.71	8.75	8.71	8.92	9.01	9.09	9.03	9.06	9.13	9.11	9.07	9.04	9.03	8.81	9.06	9.03	9.00	8.89
Specific Conductance	µS/cm	1790	1810	1771	1772	1727	1709	1746	1753	1739	1691	1739	1758	1737	1560	1555	1519	1232	1647	1765	1705	1686	1720	1739	1609	1737	1702	1784
Oxygen Reduction Potential	mV	-136.0	-131.4	-160.7	-99.9	-103.9	-127.8	-176.5	-113.0	-84.5	43.9	-130.8	-104.3	-174.5	-111.0	-132.4	-94.6	-120.4	-142.9	-163.3	-207.2	-104.2	-184.3	-158.9	-186.8	-192.3	-213.0	-263.6
Lab Analytical Results:																												
Hardness as CaCO3	mg/L		9.92			8.65	8.63	8.88	7.63	6.84	7.98	6.64	6.50	7.25	6.39	5.94	6.63	5.06	5.39	5.21	5.28	5.13	<3.31	<3.31	<3.31	<3.31	<3.31	5.20
pH (Lab)	SU		8.66			8.56	8.58	8.34	8.5	8.45	8.58	8.62	8.61	8.59	8.87	8.77	8.72	8.84	8.81	8.88	8.78	8.87	8.76	8.78	8.63	8.71	8.84	8.85
Total Dissolved Solids (Lab)	mg/L		1170			1210	1110	1120	1120	1170	1010	1130	1130	1130	1060	1160	1120	1110	1180	1130	1070	1140	1080	1070	1140	1100	1070	1050
Calcium	mg/L		2.22			1.91	1.95	2.03	1.87	1.7	2.04	1.73	1.63	1.76	1.62	1.42	1.66	1.28	1.34	1.25	1.30	1.32	1.14	1.15	1.24	1.11	1.10	1.34
Magnesium	mg/L		1.07			0.945	0.911	0.926	0.715	0.629	0.703	0.561	0.591	0.694	0.570	0.579	0.606	0.454	0.5	0.508	0.496	0.442	<0.500	<0.500	<0.500	<0.500	<0.500	0.449
Sodium	mg/L		459			417	446	476	434	419	454	437	437	427	431	431	468	410	403	390	413	415	374	389	397	408	398	405
Potassium	mg/L		<2.00			1.63	<2.00	<2.00	1.39	1.65	<2.00	<5.00	<2.00	<5.00	<3.00	<4.00	<5.00	<2.00	<2.00	<2.00	1.27	<2.00	<5.00	<5.00	<5.00	<5.00	<5.00	<2.00
Alkalinity, Total	mg/L		700			680	730	720	685	755	720	690	705	680	625	770	690	690	705	705	740	740	780	760	680	700	660	630
Alkalinity, Bicarbonate	mg/L		600			500	630	610	485	605	590	610	645	550	465	690	450	550	555	565	580	580	480	540	620	572	590	510
Alkalinity, Carbonate	mg/L		100			180	100	110	200	150	130	80.0	60.0	130	160	80	240	140	150	140	160	160	300	220	60.0	128	70.0	120
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	<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		10.7			10.7	8.54	8.83	9.21	9.25	10.2	9.13	9.21	9.61	9.45	10	9.84	10.5	10.4	10.4	10.6	10.2	11.2	10.7	10.9	10.8	10.8	10.7
Fluoride	mg/L		1.30			1.2	1.16	1.19	1.21	1.22	1.19	1.19	1.13	1.13	1.09	1.12	1.03	1.09	1.07	0.980	1.10	0.982	1.11	1.08	1.10	1.02	0.862	0.924
Sulfate as SO4	mg/L		245			250	226	230	232	229	236	224	227	231	222	110	223	227	228	230	233	213	240	238	240	243	242	241
Total Organic Carbon (TOC)	mg/L		9.24			8.67	7.83	7.28	6.73	6.56	6.17	5.78	5.58	6.07	5.79	5.46	5.34	5.33	5.4	5.26	5.14	4.94	5.06	2.89	5.14	4.22	4.72	4.52
Nitrate/Nitrite as N	mg/L		<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.034	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.42
Ammonia as N ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.100			<0.050	<0.050	<0.10	<0.050	<0.050	0.167	<0.250	<0.100	<0.250	<0.150	<0.200	<0.250	<0.100	<0.100	<0.100	<0.050	<0.100	<0.250	<0.250	<0.250	<0.250	<0.250	<0.100
Arsenic	mg/L		0.0160			0.0152	0.0127	0.0104	0.0149	0.0107	0.0142	0.0099	0.0093	0.0086	0.0061	0.007	0.0083	0.0091	0.0091	0.0078	0.0095	0.0082	0.0084	0.0085	0.0078	0.0094	0.0076	0.0084
Cadmium	mg/L		<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0005	<0.0001	<0.0002	<0.0002	<0.0005	<0.0005	<0.0004	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010	
Copper	mg/L		0.0122			0.0048	0.0071	0.0073	0.0068	0.0063	0.0049	0.0037	0.0024	<0.0025	0.0046	0.0045	0.0031	0.0131	0.0143	0.0097	0.0072	0.0126	0.0170	0.0089	0.0143	0.0187	0.0080	0.0081
Iron	mg/L		<0.100			<0.05	<0.05	<0.1	<0.050	<0.050	<0.100	<0.250	<0.100	<0.250	<0.150	<0.200	<0.250	<0.100	<0.100	<0.100	<0.050	<0.100	<0.250	<0.250	<0.250	<0.250	<0.250	<0.100
Lead	mg/L		<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0005	<0.0010	<0.0010	<0.0025	<0.0025	<0.0020	<0.0025	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0020	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Manganese	mg/L		0.0049			0.006	0.0054	0.0072	0.0078	0.0082	0.0079	0.0099	0.0095	0.0102	0.0072	0.007	0.0069	0.0057	0.0058	0.0054	0.0051	0.0049	0.0047	0.0058	0.0063	0.0058	0.0055	0.0059
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L		0.0170			0.016	0.0149	0.0158	0.0157	0.0167	0.0277	0.0372	0.0204	0.0195	0.0149	0.0163	0.0162	0.016	0.0149	0.0140	0.0148	0.0143	0.0150	0.0150	0.0136	0.0143	0.0125	0.0139
Selenium	mg/L		0.0010			0.0019	<0.0050	<0.002	0.0034	<0.005	<0.0010	<0.0020	<0.0020	<0.0050	<0.0050	<0.004	0.0462	0.0033	<0.0020	0.0091	0.0018	<0.0020	<0.0020	<0.0050	<0.005	<0.0050	0.0032	
Silica (SiO2)	mg/L		9.33			8.83	9.49	10.2	8.95	8.85	9.73	9.46	8.80	8.24	8.84	9.11	9.64	8.11	8.77	8.82	9.04	8.63	7.45	7.80	7.62	7.81	7.47	9.17
Silicon	mg/L		4.36			4.13	4.44	4.76	4.18	4.14	4.55	4.42	4.11	3.85	4.13	4.26	4.51	3.79	4.1	4.12	4.22	4.03	3.48	3.65	3.56	3.65	3.49	4.29
Uranium	mg/L		0.0125			0.0126	0.0111	0.0110	0.011	0.0085	0.0080	0.0070	0.0063	0.0059	0.0043	0.0049	0.0049	0.0043	0.0041	0.0033	0.0035	0.0032	0.0034	0.0032	0.0025	<0.0025	<0.0025	0.0026
Zinc	mg/L		<0.0020			0.0023	0.0023	<0.0040	0.0028	<0.0100	0.0070	<0.0040	<0.0040	<0.0100														

GCC Energy Hydrologic Monitoring Data

MW-3-C																													
Year	2018								2019				2020				2021				2022				2023				
Quarter	Q1		Q2		Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Month	1	2	3	4	5	8	11	2	5	9	11	3	5	8	12	2	5	8	11	2	5	9	12	3	6	8	11		
Sample Date	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	9/17	11/12	3/13	5/26	8/31	12/1	2/10	5/18	8/10	11/10	2/24	5/11	9/6	12/13	3/29	6/15	8/8	11/16		
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Field Parameters:																													
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.10	0.06	0.06	0.13	0.13	0.10	0.03	0.08	0.13	0.13	0.13	0.13	0.15	0.10	0.15	0.03	0.24	0.09	0.11	0.10		
Total Purged	gal	1.5	1.5	1.5	1.0	1.3	1.3	1.1	1.3	1.5	10.0	1.5	11.0	1.1	1.3	1.5	1.3	1.5	1.3	1.5	1.5	1.5	1.0	1.0	1.1	1.1	1.1		
Depth to Water	ft bgs	297.01	296.66	296.57	296.62	296.78	297.12	296.80	296.39	295.56	295.70	295.50	299.35	294.99	294.60	295.26	295.97	295.25	295.70	295.68	294.45	295.11	295.45	295.10	294.25	293.70	294.46	294.41	
Temperature	deg C	11.7	11.4	11.6	12.2	13.0	13.3	11.5	11.0	11.4	13.5	12.5	11.3	13.4	15.0	14.0	9.9	12.3	15.6	9.6	9.4	13.2	14.4	1.9	13.2	12.9	14.6	11.7	
pH	SU	8.43	8.43	8.45	8.25	8.28	8.26	8.17	8.28	8.29	8.31	8.20	7.98	8.44	8.45	8.73	8.71	8.50	8.71	8.85	8.62	8.43	8.29	9.15	8.44	8.42	8.37	8.26	
Specific Conductance	µS/cm	4923	4864	5063	5019	4916	4953	5127	5155	5184	5144	5144	4921	3143	5039	4251	4426	3755	4571	5244	4564	4694	5306	2397	5300	5353	5283	5584	
Oxygen Reduction Potential	mV	-187.9	-183.5	-155.4	-154.7	-161.4	-180.5	-217.6	-185.4	-188.5	-151.8	-184.4	-155.0	-240.5	-174.4	-150.0	-202.7	-149.6	-255.3	-227.4	-325.6	-223.4	-307.9	-277.2	57.8	-199.5	-202.4	-275.0	
Lab Analytical Results:																													
Hardness as CaCO3	mg/L		16.1			40.3	17.9	21.7	17.3	16.8	18.6	18.6	18.3	16.0	18.1	16.9	18.5	14.8	16.9	16.7	16.0	17.4	20.4	16.4	17.1	13.7	16.1	17.7	
pH (Lab)	SU		8.35			8.34	8.31	8.24	8.2	8.23	8.31	8.12	7.98	8.41	8.36	8.36	8.43	8.38	8.47	8.87	8.44	8.47	8.18	8.49	8.81	8.29	8.21	8.27	
Total Dissolved Solids (Lab)	mg/L		3540			3610	3520	3360	3300	3440	3500	3390	3220	3180	3170	3280	3200	3230	3300	3200	3270	3250	3280	3140	3150	2310	3220	3300	
Calcium	mg/L		3.81			7.28	4.01	4.70	4.05	3.74	4.30	4.23	4.26	3.81	3.97	3.72	4.25	3.59	3.84	3.76	3.66	4.10	4.49	3.68	3.91	3.32	3.63	3.97	
Magnesium	mg/L		1.59			5.38	1.92	2.41	1.75	1.8	1.91	1.94	1.86	1.58	1.98	1.84	1.92	1.42	1.77	1.78	1.67	1.74	2.23	1.75	1.77	1.33	1.70	1.89	
Sodium	mg/L		1200			1350	1220	1460	1270	1100	1360	1300	1280	1240	1250	1250	1360	1220	1220	1170	1200	1260	1360	1170	1260	906	1240	1270	
Potassium	mg/L		<10.0			<5.00	<5.00	<5.00	<5.00	5.24	<5.00	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<10.0	
Alkalinity, Total	mg/L		1910			1760	1730	2050	2000	2110	2190	2130	2160	2050	1820	2090	2170	2130	2140	2230	2180	2170	2110	2120	2220	1410	2140	2140	
Alkalinity, Bicarbonate	mg/L		1810			1600	1670	1900	1830	2000	2020	2070	2000	1800	1690	1970	1710	1910	1950	1950	1820	1870	1990	2120	1920	1410	2070	2060	
Alkalinity, Carbonate	mg/L		100			160	60.0	150	170	110	170	60.0	160	250	130	120	460	220	190	280	360	300	120	<10.0	300	<10.0	70.0	80.0	
Alkalinity, Hydroxide	mg/L		<10.0			<10.0	NA	<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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
Chloride	mg/L		549			544	524	561	577	575	620	542	549	555	552	578	574	577	582	462	608	605	613	604	622	360	639	644	
Fluoride	mg/L		4.15			3.52	3.84	4.04	4.04	3.91	3.78	3.66	3.61	3.51	3.47	3.53	3.37	3.34	3.36	3.16	3.37	3.06	3.51	3.25	3.38	1.96	2.59	2.91	
Sulfate as SO4	mg/L		<10.0			<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	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	252	<10.0	<10.0
Total Organic Carbon (TOC)	mg/L		337			343	306	141	122	129	132	107	81.9	23.4	17.1	15.7	15.7	16.3	15.7	16.4	17.9	16.2	16.1	10.4	19.2	5.72	18.9	19.2	
Nitrate/Nitrite as N	mg/L		<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	<0.020	<0.040	<0.020	<0.020	<0.100	<0.020	<0.020	<0.020	<0.020	<0.020	
Ammonia as N ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aluminum	mg/L		<0.500			1.47	<0.500	<0.250	<0.250	<0.500	<0.250	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.300	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.500	<0.250	<0.500	<0.500	
Arsenic	mg/L		0.0194			0.0168	0.0148	0.0155	0.0218	0.0171	0.0192	0.0188	0.0087	0.0133	0.0106	0.0125	0.0113	0.0163	0.0195	0.0170	0.0157	0.0130	0.0151	0.0146	0.0194	0.0206	0.0149	0.0170	
Cadmium	mg/L		<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.001	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
Copper	mg/L		0.0409			0.0183	0.0257	0.0227	0.0223	0.0168	0.0102	0.0109	0.0069	0.0064	0.0136	0.0156	0.0102	0.0499	0.0434	0.0323	0.0287	0.0347	0.0555	0.0268	0.0220	0.0571	0.0185	0.0293	
Iron	mg/L		<0.500			0.252	<0.500	<0.250	<0.250	0.344	0.328	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.300	0.464	0.310	0.260	0.305	0.427	<0.250	<0.500	<0.25	<0.500	<0.500	
Lead	mg/L		<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
Manganese	mg/L		0.0307			0.0275	0.0243	0.0252	0.0483	0.063	0.0378	0.0266	0.0245	0.0175	0.0102	0.0079	0.0052	0.0046	0.0034	0.0032	0.0028	0.0040	0.0025	0.0034	0.0054	0.0065	<0.0050	<0.0050	
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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	
Mercury (dissolved low-level)	ng/L																												
Molybdenum	mg/L		0.0221			0.0189	0.0155	0.0140	0.0134	0.0121	0.0081	0.0075	0.0082	0.0085	0.0076	0.0075	0.008	0.0069	0.0061	0.0061	0.0059	0.0065	0.0058	0.0056	0.0111	0.0093	0.0065	0.0059	
Selenium	mg/L		0.0383			0.0268	0.0232	0.0261	0.0464	0.0203	0.0203	0.0173	0.0125	0.0129	0.0135	0.0191	0.027	0.0411	0.0372	0.0319	0.0335	0.0185	0.0247	0.0199	0.0259	0.0396	0.0242	0.0282	
Silica (SiO2)	mg/L		<10.7			9.69	8.68	10.7	8.24	8.35	9.06	<10.7	<10.7	<10.7	<10.7	<10.7	<10.7	7.48	8.4	8.33	7.79	7.59	8.75	7.04	<10.7	8.03	<10.7	<10.7	
Silicon	mg/L		<5.00			4.53	4.06	5.01	3.85	3.9	4.24	<5.00	<5.00	<5.00	<5.														

GCC Energy Hydrologic Monitoring Data

MW-4-A																															
Year	2018								2019				2020				2021				2022				2023						
Quarter	Q1		Q2		Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	8	11	2	5	8	11	2	5	9	11	2	5	9	11	3	6	8	11
Sample Date	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/6	5/26	8/27	11/25	2/10	5/18	8/10	11/10	2/23	5/11	9/1	11/17	3/9	6/15	8/7	11/16				
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																															
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.10	0.06	0.06	0.06	0.13	0.03	0.03	0.13	0.13	0.05	0.13	0.25	0.20	0.22	0.13	0.13	0.06	0.05	0.03	0.08	0.05			
Total Purged	gal	1.3	1.5	1.5	1.0	1.5	1.5	1.1	1.5	1.3	1.1	1.0	1.5	1.2	1.3	1.3	1.3	1.3	1.5	1.3	1.8	1.5	1.0	1.1	1.1	1.1	1.1	1.1			
Depth to Water	ft bgs	334.31	334.73	334.81	335.07	335.58	336.06	336.73	335.6	335.07	335.21	335.16	336.35	337.16	336.88	336.13	335.46	335.72	335.93	336.16	336.01	336.31	336.74	337.16	337.66	330.46	335.36	335.49			
Temperature	deg C	10.9	9.8	11.4	10.9	17.8	12.9	11.6	11.1	10.4	13.6	11.6	10.3	12.5	14.0	12.3	10.3	11.2	12.1	11.6	9.4	12.4	15.6	12.4	11.6	15.0	15.2	12.4			
pH	SU	8.33	8.37	8.41	8.19	8.20	8.10	8.12	8.15	8.08	8.02	8.11	8.07	8.19	8.27	8.30	8.25	8.30	8.38	8.38	8.35	8.34	8.33	8.77	8.41	8.38	8.33	8.25			
Specific Conductance	µS/cm	2259	2267	2207	2214	2183	2192	2246	2205	2237	2201	2211	2271	2273	2165	2249	2052	1618	2205	2268	2294	2244	2236	2236	2090	2246	2171	2298			
Oxygen Reduction Potential	mV	-35.2	-75.9	-117.3	-77.9	-81.8	-137.5	-157.6	-92.3	-89.3	-54.3	-19.8	15.3	-71.3	-11.5	-10.6	29.0	-63.4	-48.7	-77.3	-153.2	-78.6	-203.9	-66.6	35.8	-41.9	-76.5	-167.0			
Lab Analytical Results:																															
Hardness as CaCO3	mg/L		7.73			7.84	7.69	8.81	7.76	7.31	8.62	8.00	8.19	7.46	7.87	7.77	8.87	7.02	5.81	7.54	8.32	7.88	8.44	7.41	7.78	8.02	6.50	7.47			
pH (Lab)	SU		8.28			8.31	8.21	8.24	8.05	8.08	8.15	8.02	8.11	7.90	8.19	8.16	8.04	8.15	8.09	8.21	8.24	8.24	8.50	8.29	8.10	8.12	8.23	8.30			
Total Dissolved Solids (Lab)	mg/L		1490			1470	1430	1350	1450	1410	1540	1490	1500	1480	1460	1560	1370	1430	1510	1470	1400	1540	1480	1430	1390	1480	1480	1400			
Calcium	mg/L		1.81			1.75	1.71	1.92	1.77	1.68	1.94	1.82	1.88	1.67	1.79	1.73	2.04	1.65	1.41	1.76	1.87	1.88	1.95	1.67	1.73	1.83	1.58	1.75			
Magnesium	mg/L		0.778			0.846	0.832	0.973	0.809	0.756	0.914	0.837	0.850	0.798	0.826	0.836	0.917	0.704	0.555	0.765	0.890	0.771	0.868	0.783	0.842	0.839	0.616	0.751			
Sodium	mg/L		507			528	531	568	535	515	548	529	551	498	533	531	565	507	411	488	504	523	520	482	559	535	503	509			
Potassium	mg/L		<2.00			1.5	<2.00	<2.00	<2.00	<2.00	4.75	<5.00	<3.00	<5.00	<5.00	<5.00	<5.00	<3.00	<5.00	<2.00	<2.00	<2.00	<2.00	<5.00	<5.00	1.24	<5.00	<5.00			
Alkalinity, Total	mg/L		530			560	575	575	545	565	575	544	560	585	605	538	620	590	580	670	535	605	590	480	569	579	562	515			
Alkalinity, Bicarbonate	mg/L		490			560	555	575	505	544	535	528	560	545	565	530	620	530	580	670	485	455	590	480	531	579	524	515			
Alkalinity, Carbonate	mg/L		40.0			<10.0	20.0	<10.0	40	32	40.0	16.0	<10.0	40.0	40	<10.0	<10.0	60	<10.0	<10.0	50.0	150	<10.0	<10.0	38.0	<10.0	38.0	<10.0			
Alkalinity, Hydroxide	mg/L		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0			
Chloride	mg/L		10.0			9.94	9.55	8.60	8.93	8.99	8.91	8.76	8.83	8.89	10.1	9.15	8.79	9.15	9.17	9.04	9.04	8.97	9.89	9.61	9.72	10.3	10.6	10.3			
Fluoride	mg/L		<0.500			<0.500	<0.500	0.143	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.500	<0.500	0.165	<0.500	<0.500			
Sulfate as SO4	mg/L		579			561	522	450	567	584	615	559	557	580	542	607	561	577	593	551	581	525	580	590	602	594	571	583			
Total Organic Carbon (TOC)	mg/L		3.46			3.59	3.60	3.59	3.47	3.40	3.33	3.25	3.10	3.49	3.48	3.27	3.42	3.42	3.23	3.28	3.31	3.32	3.40	1.99	3.78	3.35	3.44	2.86			
Nitrate/Nitrite as N	mg/L		<0.020			<0.02	<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	<0.020	0.255	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020			
Ammonia as N ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.312	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
Aluminum	mg/L		<0.100			<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.250	<0.150	<0.250	<0.250	<0.250	<0.250	<0.150	<0.250	<0.100	<0.100	<0.100	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250			
Arsenic	mg/L		0.0019			0.0005	<0.0025	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	0.0005	<0.0010	<0.0010	0.0008	<0.0010	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025			
Cadmium	mg/L		<0.0001			<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025			
Copper	mg/L		0.0124			0.0077	0.0105	0.0084	0.0081	0.0061	0.0120	0.0037	0.0034	0.0020	0.0056	0.0053	0.0036	0.0135	0.0161	0.0126	0.0097	0.0133	0.0215	0.0213	0.0207	0.0201	0.0044	0.0108			
Iron	mg/L		<0.100			<0.050	<0.050	<0.100	<0.100	<0.100	<0.100	<0.250	<0.150	<0.250	<0.250	<0.250	<0.250	<0.150	<0.250	<0.100	<0.100	<0.100	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250			
Lead	mg/L		<0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0005	<0.0010	<0.0010	<0.0005	<0.001	<0.002	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025			
Manganese	mg/L		0.0035			0.0033	<0.0075	0.0034	0.0032	0.0031	0.0026	0.0016	0.0033	0.0031	0.0029	0.0035	0.0029	0.0029	0.003	0.0030	0.0032	0.0033	0.0035	0.0031	0.0036	0.0030	0.0032	0.0029			
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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			
Mercury (dissolved low-level)	ng/L																														
Molybdenum	mg/L		0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0005	<0.0025	<0.0025	<0.0025	<0.0025			
Selenium	mg/L		0.0014			0.0025	<0.0050	<0.0020	0.0036	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0010	<0.0020	<0.0040	0.0010	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050				
Silica (SiO2)	mg/L		9.47			10	10.2	11.2	9.65	9.81	11.0	10.5	10.3	8.55	9.44	9.96	10.4	8.98	8.57	10.0	9.75	9.80	10.3	8.80	10.3	9.55	8.45	9.58			
Silicon	mg/L		4.43			4.7	4.77	5.22	4.51	4.59	5.14	4.89	4.79	4.00	4.42	4.65	4.87	4.2	4.01	4.67	4.56	4.58	4.80	4.11	4.82	4.46	3.95	4.48			
Uranium	mg/L		0.0003			<0.0001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025			
Zinc	mg/L		0.0022			0.0024	<0.0100	<0.0040	<0.0040	0.0033	<0.0020	<0.0040	<0.0040	<0.0040	<0.0100	<0.0100	<0.0100	0.0021	<0.0040	<0.0040	<0.0020	<0.0040	<0.0040	<0.0040	<0.0100	<0.0100	<0.0100	<0.0100			

Notes & Definitions:

- ^ one-time analysis

GCC Energy Hydrologic Monitoring Data

MW-4-MI																												
Year	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2		Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	8	11	2	5	8	11	2	5	9	11	3	5	8	11	
Sample Date	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/6	5/26	8/27	11/25	2/10	5/18	8/10	11/10	2/23	5/11	9/1	11/17	3/9	5/31	8/7	11/16	
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																												
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.10	0.06	0.06	0.13	0.25	0.13	0.13	0.13	0.13	0.13	0.25	0.25	0.25	0.25	0.15	0.09	0.22	0.13	0.91	0.12	
Total Purged	gal	1.3	1.5	1.5	1.0	1.3	1.8	1.6	2.0	1.3	1.1	1.0	1.3	1.2	1.3	1.3	1.5	1.3	1.5	1.5	1.3	1.5	1.0	1.3	1.1	1.1	1.1	1.2
Depth to Water	ft bgs	330.52	330.42	330.53	330.5	329.62	331.1	336.57	331.1	331.06	331.92	332.1	332.5	332.87	332.45	333.29	333.22	329.27	333.57	333.65	333.45	333.8	334.22	334.15	334.35	334.85	335.3	335.55
Temperature	deg C	11.2	11.0	10.5	10.9	10.1	11.8	11.3	11.1	10.8	13.3	11.6	11.8	12.2	12.9	11.8	10.8	11.6	12.1	11.7	11.0	12.0	13.0	11.5	11.5	12.9	12.5	12.1
pH	SU	8.62	8.48	8.53	8.01	8.50	8.14	8.25	8.38	8.23	8.14	8.26	8.18	8.42	8.45	8.57	8.57	8.60	8.59	8.59	8.46	8.56	8.51	7.87	8.62	8.62	8.62	8.53
Specific Conductance	µS/cm	1848	1856	1841	1816	1739	1756	1808	1716	1800	1830	1776	1795	1794	1730	1777	1605	1258	1711	1761	1745	1727	1718	1749	1673	1728	1710	1791
Oxygen Reduction Potential	mV	-112.5	-151.3	-145.7	-117.7	-130.0	-178.2	-202.3	-140.4	-154.7	-127.3	-76.8	-50.6	-131.2	-92.0	-87.7	-53.9	-105.9	-97.8	-118.1	-141.5	-128.8	-247.1	-131.9	85.0	-139.7	-81.2	-267.6
Lab Analytical Results:																												
Hardness as CaCO3	mg/L		6.01			5.88	6.06	6.39	5.35	4.93	5.65	3.31	4.70	<3.31	5.19	2.84	4.91	3.79	4.59	4.53	4.17	4.15	4.59	<3.31	3.84	4.11	<3.31	3.91
pH (Lab)	SU		8.47			8.48	8.31	8.47	8.35	8.3	8.44	8.08	8.33	8.02	8.28	8.38	8.21	8.38	8.28	8.59	8.35	8.42	8.68	8.48	8.25	8.41	8.44	8.59
Total Dissolved Solids (Lab)	mg/L		1220			1140	1120	1100	1130	1130	1140	1120	1110	1110	1070	1170	1130	1100	1130	1090	1100	1140	1070	1060	1030	1030	1060	1050
Calcium	mg/L		1.64			1.55	1.56	1.60	1.44	1.3	1.51	1.32	1.21	1.22	1.32	1.14	1.97	1.05	1.23	1.09	1.05	1.13	1.13	0.971	0.979	1.02	0.838	0.982
Magnesium	mg/L		0.465			0.49	0.524	0.580	0.428	0.408	0.458	<0.500	0.406	<0.500	0.459	<0.400	<0.500	0.285	0.37	0.441	0.372	0.321	0.431	<0.500	0.338	0.381	<0.500	0.354
Sodium	mg/L		447			471	470	500	462	458	496	477	441	460	459	458	476	431	427	418	430	443	448	384	468	427	428	424
Potassium	mg/L		<2.00			1.39	<2.00	<2.00	1.43	1.77	2.03	<5.00	<2.00	<5.00	<3.00	<4.00	<5.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<5.00	<2.00	<2.00	<5.00	<2.00
Alkalinity, Total	mg/L		965			955	968	995	510	890	970	978	985	1030	1020	1010	990	1020	985	1140	935	1020	1180	920	1040	965	955	985
Alkalinity, Bicarbonate	mg/L		875			865	896	885	420	650	880	886	895	935	940	965	910	900	865	1020	825	870	1040	720	980	865	907	945
Alkalinity, Carbonate	mg/L		90.0			90	72.0	110	90	240	90.0	92.0	90.0	90.0	80	40	80	120	120	120	110	150	140	200	60.0	100	48.0	40.0
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	<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		8.74			7.99	5.68	5.38	5.98	5.98	5.83	5.47	5.37	5.11	5.02	4.97	4.89	4.85	4.91	4.98	4.55	4.36	4.29	<5.00	25.4	3.91	<5.00	3.62
Fluoride	mg/L		5.02			4.82	4.84	4.94	5.49	5.44	5.38	5.31	5.11	5.16	5	5.27	4.92	5.03	5.2	4.78	5.16	4.73	5.42	5.13	5.42	5.31	4.32	4.83
Sulfate as SO4	mg/L		68.6			54.4	48.3	47.6	38.7	34.4	31.9	28.2	24.6	21.9	20	18.7	17.1	16.1	16.4	13.7	13.4	12.4	12.7	11.7	21.8	10.1	<5.00	8.16
Total Organic Carbon (TOC)	mg/L		9.54			9.25	8.94	8.48	8.37	8.25	7.81	6.42	6.63	6.55	5.93	5.77	5.78	5.36	5.29	5.09	4.80	4.28	4.73	2.31	4.82	4.52	4.06	4.05
Nitrate/Nitrite as N	mg/L		<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.040	<0.020	<0.020	<0.020	<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		NA			NA	NA	NA	NA	NA	NA	0.240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.280	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.100			<0.050	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250	<0.100	<0.250	<0.150	<0.200	<0.250	<0.100	<0.100	<0.100	<0.100	<0.100	<0.250	<0.100	<0.100	<0.250	<0.100	<0.100
Arsenic	mg/L		0.0139			0.0153	0.014	0.0119	0.0164	0.0111	0.0116	0.0107	0.0127	0.0139	0.0084	0.0092	0.0088	0.011	0.0099	0.0093	0.0120	0.0092	0.0094	0.0090	0.0100	0.0074	0.0090	0.0101
Cadmium	mg/L		<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0005	<0.0004	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010
Copper	mg/L		0.0079			0.0063	0.0071	0.0078	0.0087	0.0153	0.0051	0.0027	0.0028	0.0020	0.0052	0.0045	0.004	0.0103	0.0134	0.0107	0.0116	0.0107	0.0177	0.0177	0.0196	0.0049	0.0039	0.0086
Iron	mg/L		<0.100			<0.050	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250	<0.100	<0.250	<0.150	<0.200	<0.250	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.250	<0.100	<0.100	<0.250	<0.100
Lead	mg/L		<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0025	<0.0020	<0.0025	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.002	<0.0010	<0.001	<0.0025	<0.0025	<0.0010
Manganese	mg/L		0.0080			0.007	0.0068	0.0084	0.0091	0.0084	0.0084	0.0073	0.0085	0.0086	0.0086	0.0092	0.0094	0.0073	0.0075	0.0077	0.0076	0.0080	0.0078	0.0084	0.0076	0.0077	0.0079	0.0074
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<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
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L		0.0151			0.0119	0.0115	0.0129	0.0121	0.0119	0.0108	0.0101	0.0096	0.0091	0.0081	0.0089	0.0082	0.0076	0.0068	0.0065	0.0065	0.0062	0.0064	0.0064	0.0060	0.0052	0.0051	0.0050
Selenium	mg/L		<0.0010			0.0022	0.0113	<0.0020	0.002	<0.0010	<0.0010	<0.0020	<0.0020	<0.0010	<0.005	<0.0040	0.0143	<0.0010	<0.0020	<0.0040	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020
Silica (SiO2)	mg/L		8.30			8.9	9.29	10.3	8.86	9.06	10.2	9.51	8.21	7.81	8.39	8.88	9.26	7.82	8.69	8.54	8.49	8.30	8.76	6.89	9.27	8.23	6.72	8.64
Silicon	mg/L		3.88			4.16	4.34	4.81	4.14	4.24	4.76	4.45	3.84	3.65	3.92	4.15	4.33	3.66	4.06	3.99	3.97	3.88	4.09	3.22	4.34	3.85	3.14	4.04
Uranium	mg/L		0.0183			0.0173	0.0151	0.0191	0.0269	0.0176	0.0168	0.0145	0.0163	0.0195	0.0121	0.0139	0.0137	0.0115	0.0112	0.0097	0.0089	0.0086	0.0084	0.0088	0.0075	0.0063	0.0063	0.0070
Zinc	mg/L		<0.0020			<0.0020	<0.0020	<0.0040	<0.0020	<0.0020	<0.0100	<0.0040	<0.0040	<0.0040	<0.0100	<0.0080	<0.0100	<0.0020	<0.0040	<0.0040	<0.0020	<0.0040	<0.0040	<0.0040	0.0044	<0.0100	<0.0100	<0.0040

Notes & Definitions:

- Historical data prior to 2018 can be found in earlier posted versions of this table
- ^ 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)
 - ng/L nanogram per liter
1. "<" values denote that the

GCC Energy Hydrologic Monitoring Data

MW-4-C																												
Year	2018								2019				2020				2021				2022				2023			
Quarter	Q1		Q2		Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	1	2	3	4	5	8	11	2	5	8	11	2	5	8	12	2	5	8	11	2	5	9	11	3	5	8	11	
Sample Date	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12	2/4	5/26	8/27	12/1	2/10	5/18	8/10	11/10	2/23	5/11	9/1	11/17	3/9	5/31	8/18	11/16	
Lab Analysis (Y/N)	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Field Parameters:																												
Purge Flow Rate	gpm	NM	0.10	NM	0.10	0.10	0.10	0.20	0.12	0.06	0.13	0.13	0.13	0.13	0.13	0.10	0.13	0.13	0.13	0.25	0.25	0.18	0.08	0.09	0.16	0.08	0.08	
Total Purged	gal	1.5	1.5	1.5	1.0	1.5	1.0	1.3	1.5	1.3	1.1	1.0	1.5	1.2	1.5	1.3	1.5	1.5	1.5	1.5	1.5	1.0	1.1	1.1	1.1	1.1	1.1	
Depth to Water	ft bgs	282.35	281.30	303.30	304.05	NM	302.55	302.17	302.45	303.93	304.93	305.73	306.44	304.90	307.80	308.05	308.65	308.58	309.32	309.90	309.80	311.45	310.88	311.37	310.15	311.45	311.85	311.55
Temperature	deg C	11.7	10.8	12.5	11.4	12.4	12.9	11.5	11.3	11.2	12.5	11.7	11.2	12.7	13.0	11.4	10.0	11.4	12.3	11.7	10.3	12.2	13.8	12.1	11.1	13.8	13.7	12.4
pH	SU	7.80	7.88	7.94	7.75	7.79	7.76	7.79	7.87	7.86	7.81	7.85	7.87	7.97	8.00	8.05	8.02	8.05	8.12	8.11	8.06	8.05	8.06	8.28	8.15	8.09	8.17	8.02
Specific Conductance	µS/cm	5834	5903	5628	5792	5592	5583	5775	5710	5712	5930	5636	5729	5636	5429	5665	5106	4047	5454	5687	5698	5645	5589	5649	5116	5678	5560	5842
Oxygen Reduction Potential	mV	-123.8	-154.3	-131.3	-134.9	-129.3	-157.6	-209.0	-160.1	-180.1	-156.8	-148.7	-135.9	-147.7	-132.1	-128.7	-106.2	-100.6	-142.3	-173.0	-255.6	-178.7	-278.7	-161.3	-158.1	-168.9	-182.7	-255.3
Lab Analytical Results:																												
Hardness as CaCO3	mg/L		26.5			26.2	25.9	28.6	23.6	22.5	25.2	24.4	24.0	22.7	23	21.8	25.6	19.6	21.9	20.9	22.2	21.4	26.0	20.1	21.1	21.0	24.3	22.1
pH (Lab)	SU		7.84			7.97	7.96	8.27	7.9	7.92	7.95	7.85	7.95	7.76	7.92	7.94	7.96	7.97	7.96	8.08	8.01	8.07	8.19	8.15	7.98	8.12	8.04	8.13
Total Dissolved Solids (Lab)	mg/L		3730			3660	3650	3590	3580	3590	3610	3610	3580	3570	3510	3610	3720	3540	3600	3630	3520	3580	3670	3530	3620	3450	3390	3560
Calcium	mg/L		6.32			6.15	5.90	6.60	5.5	5.21	5.83	5.61	5.57	5.31	5.3	5.15	5.98	4.64	5.07	4.77	5.04	5.14	6.01	4.65	4.78	4.78	5.69	5.15
Magnesium	mg/L		2.61			2.62	2.72	2.94	2.39	2.3	2.57	2.53	2.44	2.30	2.36	2.18	2.58	1.95	2.25	2.19	2.33	2.07	2.68	2.07	2.22	2.20	2.45	2.23
Sodium	mg/L		1410			1400	1410	1590	1410	1370	1440	1430	1440	1390	1400	1400	1520	1310	1340	1270	1360	1350	1530	1290	1410	1360	1440	1360
Potassium	mg/L		<10.0			<5.00	<5.00	5.36	<5.00	<5.00	5.42	<10.0	<5.00	<10.0	<10.0	<10.0	<10.0	<6.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Total	mg/L		2600			2410	2480	2450	2470	2550	2500	2470	2480	2460	2500	2950	2470	2500	2410	2630	2360	2500	2430	2250	2580	2240	2460	2460
Alkalinity, Bicarbonate	mg/L		2600			2330	2480	2450	2470	2350	2390	2410	2420	2340	2390	2880	2430	2360	2290	2410	2180	2300	2430	2250	2490	2240	2330	2420
Alkalinity, Carbonate	mg/L		<10.0			80	<10.0	<10.0	<10.0	200	110	60.0	60.0	120	110	70	40	140	120	220	180	200	<10.0	<10.0	90.0	<10.0	130	40.0
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	<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		592			573	533	590	575	554	580	525	528	555	543	565	557	553	572	561	562	563	570	583	576	581	566	586
Fluoride	mg/L		2.53			2.52	2.48	2.54	2.64	2.62	2.59	2.51	2.41	2.36	2.34	2.37	2.21	2.16	2.28	2.04	2.26	2.02	2.34	2.22	2.23	2.15	2.10	2.02
Sulfate as SO4	mg/L		34.5			27	18.7	11.2	5.07	<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	<5.00	<10.0	<10.0	<5.00	<10.0	
Total Organic Carbon (TOC)	mg/L		3.23			3.23	2.80	3.46	3.24	2.62	2.63	4.18	2.23	2.50	2.31	3.72	4.57	4.92	4.81	4.70	5.93	4.91	4.39	3.19	4.75	5.54	7.10	19.6
Nitrate/Nitrite as N	mg/L		<0.020			<0.020	<0.020	<0.020	0.061	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040	<0.020	<0.100	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.424	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L		NA			NA	NA	NA	NA	NA	NA	0.182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L		<0.500			<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.500	<0.250	<0.500	<0.500	<0.500	<0.500	<0.300	<0.250	<0.250	<0.250	<0.250	<0.250	<0.500	<0.500	<0.500	<0.500	<0.500
Arsenic	mg/L		0.0246			0.0195	0.0202	0.0164	0.0211	0.0171	0.0178	0.0179	0.0203	0.0195	0.015	0.0182	0.0177	0.0212	0.0248	0.0213	0.0213	0.0172	0.0219	0.0207	0.0218	0.0155	0.0237	0.0179
Cadmium	mg/L		<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	<0.0050	<0.0050	<0.0050
Copper	mg/L		0.0482			0.0389	0.0280	0.0230	0.0249	0.0382	0.0198	0.0107	0.0111	0.0069	0.0151	0.0148	0.0111	0.0464	0.0499	0.0370	0.0302	0.0371	0.0618	0.0573	0.0606	0.0160	0.0731	0.0292
Iron	mg/L		<0.500			0.373	0.397	0.474	0.279	0.391	0.522	0.619	0.591	0.551	<0.500	0.553	0.837	0.355	0.793	0.551	0.598	0.801	0.795	<0.500	0.731	0.572	0.630	0.604
Lead	mg/L		<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.0005	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	<0.0050	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0050	<0.0025	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	mg/L		0.0647			0.0529	0.0381	0.0283	0.0268	0.0174	0.0162	0.0096	0.0209	0.0103	0.008	0.0076	0.0059	0.0063	0.005	0.0047	0.0051	0.0046	0.0049	0.0046	<0.0050	<0.005	<0.0050	<0.0050
Mercury (dissolved)	mg/L		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002							
Mercury (dissolved low-level)	ng/L																											
Molybdenum	mg/L		0.0086			0.0072	0.0071	0.0057	0.0074	0.007	0.0056	0.0047	0.0045	0.0044	<0.005	<0.005	<0.0050	0.0037	0.0031	0.0031	0.0033	0.0031	0.0036	0.0034	<0.0050	<0.005	<0.0050	<0.0050
Selenium	mg/L		0.0378			0.0317	0.0260	0.0211	0.0339	0.0195	0.0195	0.0156	0.0140	0.0129	0.0112	0.0182	0.0186	0.028	0.0269	0.0219	0.0146	0.0218	0.0256	0.0258	0.0194	0.0119	0.0216	
Silica (SiO2)	mg/L		<10.7			11	11.2	12.8	10.1	10.5	11.3	11.0	9.88	<10.7	<10.7	<10.7	10.8	8.35	9.54	9.37	9.28	8.56	10.4	<10.7	<10.7	<10.7	<10.7	
Silicon	mg/L		<5.00			5.16	5.24	6.00	4.7	4.89	5.29	5.14	4.62	<5.00	<5.00	<5.00	5.06	3.91	4.46	4.38	4.34	4.00	4.87	<5.00	<5.00	<5.0		

GCC Energy Hydrologic Monitoring Data

MW-6-A																																			
Year	2018	2019										2020				2021				2022				2023											
Quarter	Q4	Q1			Q2			Q3				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
Month	12	1	2	3	4	5	6	7	8	9	11	2	5	8	11	2	5	8	11	2	5	8	11	3	5	8	11								
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	5/14	8/11	11/25	2/9	5/17	8/9	11/9	2/15	5/10	8/31	11/25	3/13	5/18	8/8	11/16								
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N								
Field Parameters:																																			
Purge Flow Rate	gpm	NM	NM	0.10	2.00	0.03	0.03	0.03	0.06	0.03	0.02	0.01	0.05	0.13	0.05	0.05	0.05	0.02	0.13	0.02	0.05	0.10	dry	dry	dry	dry	dry	dry							
Total Purged	gal	36.3	0.5	0.5	2.0	2.0	1.3	1.0	1.3	1.1	1.3	1.5	1.1	1.0	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0													
Depth to Water	ft bgs	304.33	306.41	307.40	309.60	311.05	312.50	314.20	315.75	316.43	NM	318.70	315.46	319.63	319.64	319.65	319.66	319.66	319.64	319.66	320.30	320.68													
Temperature	deg C	7.4	10.7	8.1	7.5	9.6	7.3	12.5	12.3	11.9	10.4	10.4	7.8	9.8	19.5	8.0	9.7	12.6	19.4	10.7	11.5	17.3													
pH	SU	7.32	6.64	6.66	6.74	6.65	6.73	6.76	6.75	6.76	6.80	6.79	6.89	6.95	6.97	7.10	7.03	7.10	7.11	7.11	7.02	7.05													
Specific Conductance	µS/cm	6573	6053	6072	6107	6012	6057	5725	5598	5562	5451	5108	5043	4779	4339	4656	4051	3198	4238	4465	4486	4477													
Oxygen Reduction Potential	mV	-22.8	19.4	24.6	12.6	11.8	34.8	86.6	25.8	6.5	29.2	20.5	36.7	51.7	62.3	55.2	73.5	83.5	5.2	26.5	-56.1	2.4													
Lab Analytical Results:																																			
Hardness as CaCO3	mg/L	4360		4190			3920			3540		3070	3200	2780	2690	2710	2660	2550	2740	2510	2440	2490													
pH (Lab)	SU	7.10		6.85			6.77			6.85		6.87	6.9	6.93	6.66	7.04	7.20	6.93	7.1	6.98	7.19	7.26													
Total Dissolved Solids (Lab)	mg/L	6520		6520			120*			6080		5210	4980	4670	4490	4570	4480	4390	4440	4310	4440	4450													
Calcium	mg/L	615		559			553			492		431	467	400	398	406	398	378	415	370	359	365													
Magnesium	mg/L	687		678			617			560		484	495	431	411	413	404	390	413	385	374	383													
Sodium	mg/L	294		283			296			304		276	296	274	261	273	272	266	263	254	257	268													
Potassium	mg/L	15.0		14.4			12.4			12.8		11.1	<20.0	10.6	10.3	10.5	11.1	10.7	11	10.4	10.7	10.6													
Alkalinity, Total	mg/L	160		160			143			183		220	215	233	236	246	245	290	255	295	285	270													
Alkalinity, Bicarbonate	mg/L	160		160			143			183		220	215	233	236	246	245	290	255	295	285	270													
Alkalinity, Carbonate	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	<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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0													
Chloride	mg/L	97.4		28.6			27.3			29.9		29.6	28.4	29.0	26.0	26.6	24.9	25.8	26	26.6	26.2	26.1													
Fluoride	mg/L	2.83		<0.500			<0.500			<0.500		<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500													
Sulfate as SO4	mg/L	205		4300			4280			4260		3460	3080	3020	3160	2890	2620	2740	2780	2790	2870	2820													
Total Organic Carbon (TOC)	mg/L	3.45		3.08			2.91			3.57		3.10	3.16	3.39	3.31	3.26	1.71	3.82	3.33	3.25	3.26	3.14													
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020		<0.020	0.049	0.154	0.117	0.093	0.039	0.156	0.118	0.096	0.131	0.103													
Ammonia as N ^	mg/L	NA		NA			NA			NA		2.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA													
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA		<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA													
Aluminum	mg/L	<0.500		<0.250			<0.250			<0.250		<0.250	<1.00	<0.500	<0.250	<0.500	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250													
Arsenic	mg/L	<0.0025		<0.0025			0.0009			<0.0025		<0.0025	<0.0025	<0.0050	<0.0025	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0020	<0.0025													
Cadmium	mg/L	<0.0005		<0.0005			0.0001			<0.0005		<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0005	<0.0025	<0.0025	<0.0025	<0.0020	<0.0025													
Copper	mg/L	0.0116		0.0081			0.0035			0.0039		0.0017	0.0028	<0.0050	<0.0025	<0.0050	<0.0025	0.0068	0.0082	0.0063	0.0065	0.0093													
Iron	mg/L	1.37		3.75			3.93			3.22		2.72	1.95	1.38	1.10	1.24	1.17	0.890	1.48	1.15	1.41	1.37													
Lead	mg/L	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025	<0.0025	<0.0050	<0.0025	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0020	<0.0025													
Manganese	mg/L	0.788		0.802			0.724			0.690		0.585	0.551	0.526	0.520	0.454	0.437	0.397	0.407	0.391	0.420	0.431													
Mercury (dissolved)	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													
Mercury (dissolved low-level)	ng/L																					<5.00													
Molybdenum	mg/L	<0.0025		<0.0025			<0.0005			<0.0025		<0.0025	<0.0025	<0.0050	<0.0025	<0.005	<0.0025	<0.0025	<0.0025	<0.0025	<0.0020	<0.0025													
Selenium	mg/L	<0.0050		<0.0050			0.0028			<0.0050		<0.0050	<0.005	<0.0100	<0.0050	<0.0100	<0.0050	<0.0050	<0.0050	<0.0100	<0.0040	<0.0050													
Silica (SiO2)	mg/L	12.3		11.9			14.3			13.4		12.5	<21.4	11.0	11.4	12.3	11.9	13.2	14.3	13.6	12.7	12.3													
Silicon	mg/L	5.77		5.57			6.69			6.28		5.83	<10.00	5.17	5.35	5.76	5.58	6.17	6.67	6.36	5.96	5.73													
Uranium	mg/L	<0.0005		<0.0005			<0.0001			<0.0005		<0.0005	<0.0025	<0.0050	<0.0025	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0020	<0.0025													
Zinc	mg/L	0.0689		<0.0100			0.0082			0.0108		0.0117	0.0107	<0.0200	0.0159	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0080	<0.0100													

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)
- ng/L nanogram per liter

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

GCC Energy Hydrologic Monitoring Data

MW-6-MI																												
Year	2018	2019											2020				2021				2022				2023			
Quarter	Q4	Q1			Q2			Q3			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	12	1	2	3	4	5	5	6	7	8	9	11	2	5	8	11	2	5	8	11	2	5	8	11	3	5	8	11
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	5/14	8/11	11/24	2/9	5/17	8/9	11/9	2/15	5/10	8/1	11/25	3/13	5/31	8/8	11/16
Lab Analysis (Y/N)	Y	N	Y	N	N	N [#]	N	N	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	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	dry	dry	dry	dry	dry	dry	dry	dry	dry	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 (dissolved)	mg/L	<0.0002		<0.0002																								
Mercury (dissolved low-level)	ng/L																											
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)
 ng/L nanogram per liter

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

GCC Energy Hydrologic Monitoring Data

MW-6-C																											
Year	2018	2019										2020				2021				2022				2023			
Quarter	Q4	Q1			Q2			Q3			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Month	12	1	2	3	4	5	6	7	8	9	11	2	5	8	11	2	5	8	11	2	5	8	11	3	5	8	11
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	5/12	8/11	11/24	2/9	5/17	8/9	11/9	2/15	5/10	8/1	11/25	3/13	5/18	8/8	11/16
Lab Analysis (Y/N)	N	N	N	N	N	N	N	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	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 (dissolved)	mg/L																										
Mercury (dissolved low-level)	ng/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
 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)
 ng/L nanogram per liter</p> | <ol style="list-style-type: none"> 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				2021				2022				2023						
Quarter	Q4	Q1			Q2			Q3			Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Month	12	1	2	3	4	5	6	7	8	9	10	11	2	5	8	11	2	5	8	11	3	6	9	11	3	6	8	11		
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	5/27	8/25	11/11	2/16	5/24	8/24	11/30	3/23	6/7	9/8	11/28	3/18	6/14	8/8	11/13		
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	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	1.10	1.10	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.25	0.13	0.25	0.25	0.13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.20	0.11	0.16	0.17	
Total Purged	gal	15.0	18.0	15.0	3.0	15.0	16.0	15.3	15.3	17.0	15.0	15.0	15.0	36.5	15.0	16.0	17.0	15.0	17.0	17.0	18.0	18.0	17.0	17.0	0.5	0.4	0.4	0.4	0.4	
Depth to Water	ft bgs	36.13	36.27	36.45	36.52	36.70	36.25	36.22	36.48	36.49	36.88	36.85	36.85	36.72	35.40	36.35	37.10	36.20	35.33	36.91	35.92	35.90	35.70	36.71	36.40	35.85	29.10	28.40	25.60	
Temperature	deg C	10.0	10.0	10.0	9.9	10.1	10.4	10.4	10.6	10.5	10.3	10.4	10.6	10.4	12.1	10.3	10.3	10.1	10.5	10.9	10.6	10.5	10.7	10.8	11.1	13.1	11.7	11.8	11.4	
pH	SU	6.99	7.01	7.04	6.93	7.00	7.06	7.07	6.28	6.95	7.06	7.03	7.06	6.91	7.17	7.09	7.12	7.14	7.19	7.24	7.23	7.12	7.15	7.14	6.28	7.28	7.16	7.11	7.16	
Specific Conductance	µS/cm	2001	1910	1910	1926	1912	1767	1836	1885	1890	1913	1936	1922	1993	1890	1772	1628	1672	1805	1814	1878	1882	1896	1880	1808	1754	1785	1831	1966	
Oxygen Reduction Potential	mV	-68.0	-36.7	-41.4	-38.1	-48.8	14.1	-13.8	-33.9	-37.8	-29.5	-25.6	-21.3	0.9	-49.2	17.6	-8.6	2.2	-55.8	-41.9	-20.4	-133.6	-73.8	-196.7	-86.9	-10.9	-32.4	-60.3	-117.9	
Lab Analytical Results:																														
Hardness as CaCO3	mg/L	936		1030			982			997			1020	963	1020	1080	939	1090	958	986	957	1040	958	916	962	1020	952	902	1010	
pH (Lab)	SU	7.2		7.37			7.17			7.09			6.99	6.92	6.89	7.23	7.06	6.99	6.92	7.03	7.01	7.11	7.12	7.24	7.18	6.95	6.95	7.25	7.16	
Total Dissolved Solids (Lab)	mg/L	1460		1480			1490			1480			1530	1520	1430	1480	1450	1590	1460	1510	1580	1500	1500	1490	1420	1500	1400	1450	1560	
Calcium	mg/L	170		179			171			173			162	165	175	183	157	186	167	167	164	173	166	154	165	174	161	151	173	
Magnesium	mg/L	124		142			135			137			144	134	142	150	133	152	131	138	133	149	132	129	134	143	134	127	141	
Sodium	mg/L	75.3		81.3			75.0			75.2			74.9	73.7	76.0	80.9	73.4	81.4	75	74.6	72.0	77.8	71.9	71.6	72.3	76.3	75.6	69.2	77.1	
Potassium	mg/L	3.87		3.9			<5.00			3.74			3.74	3.82	<5.00	<5.00	<5.00	4.25	<5.00	<5.00	3.69	3.88	3.59	3.71	3.66	<5.00	3.63	<5.00	3.46	
Alkalinity, Total	mg/L	380		367			405			392			350	357	355	268	430	420	395	340	440	425	425	400	310	378	410	437	425	
Alkalinity, Bicarbonate	mg/L	380		367			405			392			425	357	355	268	430	420	395	340	440	425	425	400	310	378	410	437	425	
Alkalinity, Carbonate	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	<10.0	<10.0	<10.0	<10.0	<10.0	<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	<10.0	<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	11.9		10.7			10.8			10.9			11.6	10.3	10.7	10.2	10.1	10.4	10.1	10.5	10.3	10.1	10.3	11.2	11.0	11.1	10.8	11.8	11.9	
Fluoride	mg/L	<0.500		0.332			0.322			0.322			<0.500	0.354	0.330	0.322	0.322	0.300	0.304	0.312	0.260	0.292	<0.200	0.310	0.306	0.340	0.262	<0.200	0.238	
Sulfate as SO4	mg/L	732		736			733			844			746	774	803	767	742	757	746	796	751	755	743	759	761	827	709	719	828	
Total Organic Carbon (TOC)	mg/L	3.72		3.57			3.73			3.70			3.45	3.42	3.63	4.01	3.39	3.00	3.42	3.63	3.38	3.50	3.42	3.38	2.12	3.68	3.31	5.57	4.24	
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<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	NA		NA			NA			NA			0.178	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA			<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.100			<0.050	<0.100	<0.250	<0.250	<0.250	<0.150	<0.250	<0.250	<0.100	<0.050	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	<0.100	
Arsenic	mg/L	0.0014		0.0015			0.0013			0.0016			0.0013	0.0013	0.0011	<0.0015	<0.0025	0.0016	<0.0025	<0.0025	0.0011	0.0009	0.0014	<0.0025	0.0013	<0.0025	<0.0025	<0.0025	0.0010	
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0002	<0.0002	<0.0002	<0.0003	<0.0005	<0.0001	<0.0025	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010	
Copper	mg/L	0.0003		0.0018			0.0011			0.0008			0.0006	<0.0010	<0.0010	<0.0015	<0.0025	0.0007	<0.0025	<0.0025	0.0018	0.0021	0.0036	<0.0025	0.0030	<0.0025	0.0028	0.0032	0.0018	
Iron	mg/L	1.82		1.95			1.81			2.12			2.00	1.84	1.71	2.16	2.15	2.08	1.92	1.75	1.63	2.05	1.69	1.75	1.57	1.99	0.265	<0.250	0.251	
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010	<0.001	<0.0010	<0.0015	<0.0025	<0.0005	<0.0025	<0.0025	<0.0010	<0.0025	<0.0005	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	
Manganese	mg/L	3.72		4.49			4.01			4.22			4.76	4.86	3.63	4.49	4.42	5.22	4.21	4.39	4.66	4.48	4.58	4.61	4.75	4.69	4.22	4.46	4.40	
Mercury (dissolved)	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	<0.0002	<0.0002	<0.0002	
Mercury (dissolved low-level)	ng/L																													
Molybdenum	mg/L	0.0008		0.0011			0.0007			0.0009			<0.0010	0.001	<0.0010	<0.0015	<0.0025	0.0006	<0.0025	<0.0025	<0.0010	0.0007	0.0007	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010	
Selenium	mg/L	<0.0020		<0.0020			<0.0010			0.0011			<0.0020	<0.002	<0.0020	<0.0030	<0.0050	<0.0010	<0.0050	<0.0050	<0.0020	<0.0010	0.0012	<0.0050	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020	
Silica (SiO2)	mg/L	16.6		16.1			16.1			16.9			16.8	16.4	15.8	16.9	14.9	17.7	17.1	16.7	17.2	18.3	16.8	16.1	16.9	17.5	17.0	15.2	16.5	
Silicon	mg/L	7.75		7.52			7.55			7.90			7.83	7.67	7.37	7.91	6.96	8.28	7.97	7.81	8.03	8.57	7.86	7.54	7.92	8.16	7.95	7.11	7.72	
Uranium	mg/L	0.0021		0.0018			0.0017			0.0018			0.0020	0.0019	0.0016	0.0018	<0.0025	0.0018	<0.0025	<0.0025	0.0015	<0.0025	0.0018	<0.0025	0.0016	<0.0025	0.0018	<0.0025	0.0025	
Zinc	mg/L	<0.0050		<0.0040			0.0021			0.0020			<0.0040	<0.004	<0.0040	<0.0060	<0.0100	0.0022	<0.0100	<0.0100	<0.0040	<0.0020	0.0041	<0.0100	<0.0040	<0.0100	<0.0100	<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)
 - ng/L nanogram per liter
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				2021				2022				2023								
Quarter	Q4	Q1			Q2			Q3				Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Month	12	1	2	3	4	5	6	7	8	9	10	11	2	5	8	11	2	5	8	11	3	6	9	11	3	6	8	11				
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	5/27	8/25	11/11	2/16	5/24	8/24	11/30	3/23	6/7	9/8	11/28	3/18	6/14	8/8	11/13				
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				
Field Parameters:																																
Purge Flow Rate	gpm	0.85	1.10	0.50	3.00	0.50	0.75	1.00	1.00	0.75	0.50	1.00	0.25	1.00	0.25	0.13	0.13	0.13	0.13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.33	0.11	0.09	0.38
Total Purged	gal	18.0	14.0	15.0	3.0	15.0	17.0	15.3	15.3	18.0	15.3	15.5	15.0	15.2	15.0	16.0	15.0	15.0	16.0	15.0	14.0	15.0	15.0	16.0	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Depth to Water	ft bgs	40.00	39.95	40.10	43.45	40.44	40.05	39.94	40.10	40.08	40.25	40.31	40.22	40.40	40.45	34.50	40.83	41.22	41.00	40.98	48.04	40.95	41.00	41.30	41.30	41.50	37.19	37.40	37.40	34.90	34.90	34.90
Temperature	deg C	10.3	10.2	10.0	9.9	10.3	10.5	10.6	10.5	10.6	10.3	10.2	11.2	10.5	11.0	11.1	11.0	10.9	11.0	11.2	10.7	10.7	10.8	10.7	9.7	11.0	11.6	12.2	12.2	12.3	12.3	12.3
pH	SU	7.12	7.09	7.13	7.17	7.09	7.02	7.17	7.09	7.05	7.03	6.99	6.99	6.99	7.14	7.19	7.19	7.20	7.27	7.31	7.30	7.18	7.23	7.23	6.59	7.20	7.27	7.23	7.07	7.07	7.07	7.07
Specific Conductance	µS/cm	1781	1696	1720	1725	1729	1628	1676	1699	172	1739	1774	1739	1758	1760	1675	1716	1570	1642	1671	1746	1750	1763	1763	1793	1665	1766	1742	1761	1761	1761	1761
Oxygen Reduction Potential	mV	-65.0	-52.8	-51.8	-53.0	-59.7	11.0	-29.5	-46.6	-44.8	-33.5	-38.8	-39.2	-18.2	-72.4	1.4	-14.7	-20.2	-63.3	-57.4	-37.2	-156.9	-111.7	-230.9	-23.9	182.6	-81.5	-86.6	-103.6	-103.6	-103.6	-103.6
Lab Analytical Results:																																
Hardness as CaCO3	mg/L	870		861			864			883			867	861	907	937	810	914	838	859	859	937	867	831	871	940	932	887	901	901	901	
pH (Lab)	SU	7.28		7.36			7.13			7.05			7.01	7.11	6.96	7.18	7.1	7.03	6.97	7.06	6.81	7.19	7.16	7.27	7.25	7.05	7.03	7.33	7.33	7.43	7.43	
Total Dissolved Solids (Lab)	mg/L	1220		1290			1240			1280			1380	1290	1260	1280	1310	1400	1320	1320	1340	1380	1330	1360	1300	1320	1350	1400	1430	1430	1430	
Calcium	mg/L	152		151			148			154			143	149	153	160	134	156	146	146	149	158	150	143	149	163	159	152	156	156	156	
Magnesium	mg/L	119		118			120			121			124	119	127	130	115	127	115	120	118	131	119	115	121	130	130	123	125	125	125	
Sodium	mg/L	81.7		82.6			77.2			78.6			77.1	77.2	77.7	82.9	74.3	80.9	76.1	75.8	74.9	81.2	75.0	75.0	75.3	80.5	79.8	75.5	77.4	77.4	77.4	
Potassium	mg/L	3.80		3.27			3.55			3.18			3.52	3.8	<5.00	<5.00	3.63	3.49	<5.00	3.36	3.65	3.35	3.45	3.42	<5.00	3.73	<5.00	3.24	3.24	3.24	3.24	
Alkalinity, Total	mg/L	400		435			450			431			445	404	385	288	480	450	445	385	490	460	465	480	430	417	448	417	415	415	415	
Alkalinity, Bicarbonate	mg/L	400		435			450			431			445	404	385	288	480	450	445	385	490	460	465	480	430	417	448	417	415	415	415	
Alkalinity, Carbonate	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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
Chloride	mg/L	9.83		10.5			10.3			11.1			11.0	10.2	10.3	10.1	11.3	10.4	10.2	10.3	10.5	10.5	10.6	11.7	11.4	11.6	11.8	12.2	12.2	12.2	12.2	
Fluoride	mg/L	0.380		0.370			0.338			0.342			<0.500	0.33	0.346	0.336	0.334	0.292	0.306	0.35	0.272	0.304	0.204	0.332	0.316	0.358	0.284	<0.200	0.266	0.266	0.266	
Sulfate as SO4	mg/L	533		559			606			643			577	602	625	605	582	609	595	615	599	608	597	627	619	686	675	685	748	748	748	
Total Organic Carbon (TOC)	mg/L	3.77		3.59			3.77			3.68			3.52	3.49	3.56	3.82	3.54	3.04	3.65	3.71	3.48	3.49	3.56	3.64	1.82	3.63	3.25	5.64	3.64	3.64	3.64	
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.493	<0.020	<0.020	<0.020	<0.020		
Ammonia as N ^	mg/L	NA		NA			NA			NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aluminum	mg/L	<0.100		<0.100			<0.050			<0.100			<0.050	<0.100	<0.250	<0.250	<0.250	<0.150	<0.050	<0.250	<0.100	<0.050	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	<0.100	<0.100		
Arsenic	mg/L	0.0020		0.0018			0.0018			0.0021			0.0018	0.0017	0.0017	0.0018	<0.0025	0.0018	0.0018	<0.0025	0.0017	0.0015	0.0019	<0.0025	0.0020	0.0027	<0.0025	<0.0025	0.0020	0.0020		
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002	<0.0002	<0.0003	<0.0005	<0.0003	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	0.0010	
Copper	mg/L	0.0004		0.0024			0.0023			0.0008			0.0010	0.001	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	0.0017	0.0021	0.0031	<0.0025	0.0021	<0.0025	0.0084	<0.0025	0.0020	0.0020		
Iron	mg/L	2.12		2.13			2.42			2.46			2.30	2.28	2.29	2.31	0.762	2.33	2.25	2.2	2.22	2.52	2.22	2.28	2.27	2.43	2.43	2.19	2.24	2.24		
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.001	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	0.0010	
Manganese	mg/L	3.17		3.52			3.06			3.37			3.39	3.7	3.36	3.54	3.81	3.55	3.5	3.6	3.66	3.77	3.70	3.77	3.87	3.98	3.85	3.91	4.16	4.16	4.16	
Mercury (dissolved)	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							
Mercury (dissolved low-level)	ng/L																															
Molybdenum	mg/L	0.0009		0.0011			0.0008			0.0011			0.0008	<0.0010	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	0.0009	0.0009	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	0.0010	
Selenium	mg/L	<0.0020		<0.0020			0.0010			0.0013			<0.0010	<0.0020	<0.0020	<0.0030	<0.0050	0.0046	<0.0030	<0.0050	0.0035	<0.0010	0.0015	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	0.0020	
Silica (SiO2)	mg/L	16.3		15.3			15.7																									

GCC Energy Hydrologic Monitoring Data

MW-8-MI																													
Year	2018	2019										2020				2021				2022				2023					
Quarter	Q4	Q1			Q2			Q3			Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	12	1	2	3	4	5	6	7	8	9	10	11	2	5	8	11	2	5	8	11	3	6	9	11	3	6	8	11	
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	5/27	8/25	11/11	2/16	5/24	8/24	11/30	3/23	6/7	9/8	11/28	3/18	6/14	8/8	11/13	
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	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	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	0.13	0.10	0.25	0.25	0.13	0.25	0.25	0.25	0.13	0.15	0.50	0.12	0.13	0.23	0.19
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	2.0	1.0	2.0	3.0	1.0	1.0	1.0	0.8	0.5	0.5	0.6	0.6	0.6	0.6	
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	45.42	45.84	46.24	46.38	46.54	47.27	46.84	47.69	48.00	48.00	48.25	47.75	44.65	44.52	42.85
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	11.3	13.1	11.3	10.0	11.6	11.9	11.1	10.9	12.5	14.3	9.9	11.7	11.5	11.9	12.1
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	7.44	7.43	7.47	7.59	7.55	7.56	7.41	7.54	7.59	6.92	7.52	7.54	7.51	7.52	
Specific Conductance	µS/cm	1786	1667	1651	1658	1643	1595	1639	1645	1658	1637	1689	1642	1651	1659	1598	1628	1468	1616	1554	1629	1596	1575	1505	1631	1632	1607	1538	1544
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	-184.9	-107.0	-112.2	-72.0	-131.9	-123.1	-115.9	-195.3	-150.6	-262.2	-172.4	-79.7	-134.6	-148.3	-178.2
Lab Analytical Results:																													
Hardness as CaCO3	mg/L	167		249			273			253			267	254	309	355	339	376	288	377	317	406	378	374	390	405	388	363	361
pH (Lab)	SU	7.73		7.54			7.24			7.46			7.44	7.53	7.25	7.34	7.27	7.33	7.36	7.31	7.06	7.36	7.38	7.70	7.45	7.30	7.36	7.67	7.66
Total Dissolved Solids (Lab)	mg/L	1050		1030			1100			1110			1050	1060	1040	1010	1040	1060	1040	1000	1100	1050	1040	1050	990	1050	995	1060	1050
Calcium	mg/L	34.0		48.5			52.4			49.7			51.3	48.7	58.5	65.9	62.6	69.7	54	70.3	59.8	75.5	71.2	69.2	72.3	76.0	72.1	67.4	66.3
Magnesium	mg/L	19.9		31.0			34.5			31.4			33.8	32.1	39.6	46.2	44.4	49.1	37.2	48.9	40.8	52.7	48.7	48.8	50.8	52.3	50.4	47.1	47.5
Sodium	mg/L	344		312			289			289			275	269	272	260	232	237	256	229	238	226	220	213	210	230	236	216	215
Potassium	mg/L	4.47		5.25			<5.00			4.55			5.07	4.71	5.00	5.56	5.22	5.88	5.05	5.69	5.14	5.98	5.47	5.59	5.63	5.44	6.18	5.09	5.12
Alkalinity, Total	mg/L	500		565			560			573			585	543	545	448	590	590	575	570	605	590	590	500	540	550	568	553	560
Alkalinity, Bicarbonate	mg/L	500		565			560			573			585	543	545	448	590	590	575	570	605	590	590	500	540	550	568	553	560
Alkalinity, Carbonate	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	<10.0	<10.0	<10.0	<10.0	<10.0	<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	<10.0	<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	12.7		10.0			9.33			9.06			9.66	8.19	8.23	8.12	7.91	7.96	8.07	7.85	7.91	7.70	8.36	8.88	8.60	8.56	8.39	8.80	8.35
Fluoride	mg/L	<0.500		<0.200			<0.200			<0.200			<0.500	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Sulfate as SO4	mg/L	347		353			343			366			317	314	316	335	319	326	314	324	312	325	322	352	351	335	327	323	320
Total Organic Carbon (TOC)	mg/L	2.73		2.83			2.81			2.74			2.65	2.6	2.94	2.87	2.76	2.6	2.74	2.97	2.66	2.77	2.77	2.96	1.66	2.75	2.62	4.25	2.76
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<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	NA		NA			NA			NA			1.31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA			<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.100			<0.050	<0.100	<0.250	<0.250	<0.250	<0.150	<0.050	<0.250	<0.100	<0.050	<0.050	<0.100	<0.100	<0.250	<0.250	<0.250	<0.100
Arsenic	mg/L	0.0008		<0.0010			0.0006			0.0005			0.0005	<0.0010	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	<0.0005	0.0006	<0.0025	0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002	<0.0002	<0.0003	<0.0005	<0.0003	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Copper	mg/L	0.0031		0.0066			0.0036			0.0035			0.0037	0.0027	<0.0010	<0.0015	<0.0025	0.0015	0.0046	0.0047	0.0054	0.0055	0.0087	0.0038	0.0044	0.0025	0.0104	0.0031	0.0044
Iron	mg/L	0.137		0.162			<0.250			0.129			0.130	0.108	<0.250	<0.250	<0.250	<0.150	0.113	<0.250	0.168	0.113	0.090	<0.100	<0.100	<0.250	0.082	<0.250	<0.100
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.0010	<0.0025	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010
Manganese	mg/L	0.0495		0.0383			0.0327			0.0351			0.0377	0.0391	0.0393	0.0551	0.0546	0.0579	0.0412	0.0544	0.0443	0.0603	0.0553	0.0597	0.0693	0.0569	0.0560	0.0562	0.0562
Mercury (dissolved)	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	<0.0002	<0.0002	<0.0002
Mercury (dissolved low-level)	ng/L																						<5.00	<100	<100	<100	<100	<100	<100
Molybdenum	mg/L	0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.001	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Selenium	mg/L	<0.0020		<0.0020			0.0010			0.0010			<0.0010	<0.0020	0.0020	<0.0030	<0.0050	0.0425	0.0037	0.0072	0.0264	0.0016	0.0040	<0.0050	0.0183	0.0119	0.0049	0.0050	0.0076
Silica (SiO2)	mg/L	12.1		12.4			12.8			12.5			12.6	12.2	11.9	12.9	12.1	13.5	13.2	13.6	13.7	15.2	14.0	13.6	14.0	13.7	13.9	12.5	13.8
Silicon	mg/L	5.65		5.78			5.99			5.83			5.88	5.71	5.55	6.05	5.67	6.32	6.17	6.35	6.39	7.08	6.57	6.35	6.52	6.42	6.48	5.85	6.45
Uranium	mg/L	0.0002		0.0002			0.0002			0.0001			0.0001	<0.0010	<0.0025	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0010
Zinc	mg/L	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020	<0.0040	<0.0040	<0.0060	<0.0100	<0.0060	<0.0060	<0.0100	<0.0040	<0.0020	<0.0020	<0.0100	<0.0040	<0.0100	0.0047	<0.0100	<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)
- ng/L nanogram per liter

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-LM																													
Year	2018	2019										2020				2021				2022				2023					
Quarter	Q4	Q1			Q2			Q3			Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	12	1	2	3	4	5	6	7	8	9	10	11	2	5	8	11	2	5	8	11	3	6	9	11	3	6	8	11	
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	5/27	8/25	11/11	2/16	5/24	8/24	11/30	3/23	6/7	9/8	11/28	3/18	6/14	8/8	11/13	
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	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	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	0.13	0.13	0.13	0.13	0.25	0.25	0.25	0.25	0.15	NM	0.14	0.03	0.16	0.20	
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	1.0	2.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	NM	0.7	0.7	0.7	0.7	
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	129.70	127.90	125.75	126.72	126.13	125.25	123.55	124.10	123.75	126.81	NM	126.10	125.80	126.12	125.92
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	13.4	13.6	8.8	12.1	12.8	13.5	12.5	12.3	14.1	13.4	11.9	12.7	13.0	13.1	13.2
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	8.76	8.83	8.81	8.82	8.90	8.90	8.91	8.79	8.84	8.82	8.29	8.88	8.88	8.83	8.84
Specific Conductance	µS/cm	2306	1274	1265	1310	1262	1234	1264	1226	1269	1252	1299	1255	1294	1282	1055	1117	1132	1121	1196	1262	1260	1232	1255	1276	1233	1252	1241	1224
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	-204.5	-106.9	-93.6	-87.8	-164.1	-106.1	-99.3	-241.3	-149.4	-247.4	-66.9	-58.6	-137.0	-147.9	-210.0
Lab Analytical Results:																													
Hardness as CaCO3	mg/L	45.0		7.29			16.9			6.67			6.38	6.79	7.76	7.53	6.35	6.93	7.23	4.65	7.11	7.29	6.61	6.43	6.29	4.01	6.22	4.01	7.08
pH (Lab)	SU	8.57		8.63			8.02			8.56			8.52	8.55	8.41	8.45	8.48	8.54	8.57	8.48	8.31	8.61	8.63	8.99	8.59	8.47	8.51	8.71	8.84
Total Dissolved Solids (Lab)	mg/L	1420		770			780			785			780	840	730	740	700	795	720	740	760	740	795	755	685	765	745	805	755
Calcium	mg/L	10.8		1.93			3.84			1.78			1.68	1.77	2.09	2.05	1.71	1.87	1.92	1.86	1.88	1.96	1.77	1.70	1.65	1.61	1.71	1.61	1.87
Magnesium	mg/L	4.39		0.600			1.77			0.541			0.528	0.574	0.620	0.587	0.502	0.550	0.592	<0.500	0.587	0.580	0.530	0.532	0.524	<0.500	0.473	<0.500	0.583
Sodium	mg/L	382		341			317			306			305	309	315	337	304	319	315	308	291	316	298	298	301	287	315	289	299
Potassium	mg/L	45.7		3.49			<5.00			2.27			2.18	2.06	<5.00	<5.00	<5.00	<3.00	2.24	<5.00	2.12	2.31	2.06	<2.00	2.12	<5.00	1.85	<5.00	2.07
Alkalinity, Total	mg/L	615		720			745			731			745	685	630	675	780	730	755	750	770	780	765	760	750	714	732	714	700
Alkalinity, Bicarbonate	mg/L	535		610			645			645			685	595	530	585	680	630	645	650	620	640	655	580	510	666	732	646	620
Alkalinity, Carbonate	mg/L	80.0		110			100			86.0			60.0	90	100	90	100	100	110	100	150	140	110	180	240	48.0	<10.0	68.0	80.0
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	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	175		5.11			6.80			2.63			2.48	3.04	3.01	2.98	2.47	2.5	2.48	2.55	2.47	2.47	2.49	2.64	2.65	2.66	2.76	2.67	2.75
Fluoride	mg/L	2.06		3.91			3.95			3.97			3.88	3.61	3.63	3.53	3.66	3.58	3.48	3.67	3.40	3.44	3.25	3.79	3.73	3.84	3.65	3.15	3.42
Sulfate as SO4	mg/L	190		3.79			9.58			1.02			<1.00	<2.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	<2.00
Total Organic Carbon (TOC)	mg/L	2.80		1.80			3.33			1.94			1.69	1.69	1.92	1.82	1.66	1.2	1.71	1.79	1.60	1.70	1.72	1.77	1.13	1.73	1.43	1.89	1.70
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<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	NA		NA			NA			NA			0.282	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA			<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.100	<0.250	<0.250	<0.250	<0.150	<0.050	<0.250	<0.100	<0.050	<0.050	<0.100	<0.050	<0.250	<0.250	<0.250	<0.050
Arsenic	mg/L	0.0106		<0.0010			0.0006			0.0007			0.0006	<0.0005	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	0.0008	0.0008	<0.0025	<0.0005	<0.0025	<0.0015	<0.0025	<0.0010
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0001	<0.0002	<0.0003	<0.0005	<0.0003	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0005	<0.0025	<0.0015	<0.0025	<0.0010
Copper	mg/L	0.0337		0.0077			0.0047			0.0041			0.0051	0.0033	0.0012	0.0017	<0.0025	0.0025	0.0057	0.0068	0.0065	0.0075	0.0167	0.0052	0.0079	0.0043	0.0155	0.0040	0.0068
Iron	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.100	<0.250	<0.250	<0.250	<0.150	<0.050	<0.250	<0.100	<0.050	<0.100	<0.050	<0.100	<0.250	<0.250	<0.250	<0.050
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010	<0.0005	<0.0010	<0.0015	<0.0025	<0.0015	<0.0015	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0005	<0.0025	0.0002	<0.0025	<0.0010
Manganese	mg/L	0.0258		0.0038			0.0150			0.0020			0.0026	0.0025	0.0029	0.0026	0.0028	0.0024	0.0021	0.0025	0.0023	0.0022	0.0027	<0.0025	0.0027	0.0028	0.0027	0.0028	0.0027
Mercury (dissolved)	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	<0.0002	<0.0002	<0.0002
Mercury (dissolved low-level)	ng/L																												
Molybdenum	mg/L	0.0142		<0.0010			0.0009			<0.0005			<0.0005	<0.0005	<0.0010	<0.0015	<0.0025	<0.0015	<0.0025	<0.0010	<0.0005	<0.0005	<0.0025	<0.0005	<0.0025	<0.0005	<0.0015	<0.0025	<0.0010
Selenium	mg/L	0.0020		<0.0020			<0.0010			<0.0010			<0.0010	<0.0010	<0.0020	<0.0030	<0.0050	0.0031	<0.0030	<0.0050	<0.0020	<0.0010	<0.0010	<0.0050	<0.0010	<0.0050	<0.0030	<0.0050	<0.0020
Silica (SiO2)	mg/L	9.09																											

GCC Energy Hydrologic Monitoring Data

MW-8-PL																													
Year	2018	2019										2020				2021				2022				2023					
Quarter	Q4	Q1			Q2			Q3			Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Month	12	1	2	3	4	5	6	7	8	9	10	11	2	5	8	11	2	5	8	11	3	6	9	11	3	6	8	11	
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	5/27	8/25	11/11	2/16	5/24	8/24	11/30	3/23	6/7	9/8	11/28	3/18	6/14	8/8	11/13	
Lab Analysis (Y/N)	Y	N	Y	N	N	Y	N	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	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	0.25	0.25	0.75	0.25	0.25	0.25	0.25	0.25	0.25	0.13	1.00	0.22	0.18	0.13	0.16
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	2.0	2.3	2.0	2.0	2.0	2.0	2.0	2.0	1.8	1.0	1.0	1.0	1.0	1.0	1.0
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	127.34	128.00	127.31	127.50	127.83	127.89	127.90	128.30	128.40	128.53	128.75	128.10	128.05	128.48	128.50
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	14.8	14.9	14.1	12.9	14.6	14.8	13.4	14.1	14.1	14.3	12.8	13.2	14.2	13.4	13.3
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	7.47	7.52	7.52	7.53	7.58	7.55	7.57	7.43	7.49	7.44	7.67	7.61	7.56	7.53	7.57
Specific Conductance	µS/cm	1690	1531	1571	1558	1554	1411	1326	1165	1083	947	940	900	862	844	792	827	760	813	816	836	817	826	822	848	853	825	814	815
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	-101.9	-38.0	-37.3	-11.5	-76.6	-64.4	-53.5	-161.9	-94.6	-215.9	-104.0	-36.3	-87.6	-113.8	-140.3
Lab Analytical Results:																													
Hardness as CaCO3	mg/L	617		644			596			411			294	278	298	292	268	281	283	280	272	292	276	275	274	303	282	274	269
pH (Lab)	SU	7.28		7.40			7.26			7.22			7.39	7.47	7.19	7.16	7.41	7.36	7.41	7.29	7.16	7.42	7.47	7.88	7.39	7.33	7.36	7.51	7.70
Total Dissolved Solids (Lab)	mg/L	1150		1090			995			705			620	500	490	525	465	525	505	475	465	485	505	500	430	500	465	540	505
Calcium	mg/L	112		120			105			73.1			52.1	49.3	53.8	53.3	49.1	52.2	53.3	53	51.1	55.7	53.1	52.4	52.0	57.9	53.3	52.4	51.4
Magnesium	mg/L	82.1		83.8			81.4			55.4			39.7	37.6	39.7	38.5	35.4	36.6	36.5	35.9	35.0	37.1	34.9	35.1	34.9	38.4	36.1	34.8	34.1
Sodium	mg/L	106		124			102			91.7			83.3	78.5	80.4	81.6	77.2	78.6	79.7	77.8	73.7	80.8	75.4	76.3	75.0	81.7	77.4	75.3	75.1
Potassium	mg/L	5.14		5.62			<5.00			2.80			2.35	2.32	2.11	<2.00	<2.00	1.78	1.73	<2.00	1.54	1.71	1.48	1.53	1.55	<2.00	1.59	<2.00	1.46
Alkalinity, Total	mg/L	370		415			435			393			390	339	340	315	410	370	385	360	385	362	380	356	410	350	388	350	335
Alkalinity, Bicarbonate	mg/L	370		415			435			393			390	339	340	315	410	370	385	360	385	362	380	340	410	338	388	350	335
Alkalinity, Carbonate	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	<10.0	<10.0	16.0	<10.0	12.0	<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	<10.0	<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	18.8		18.5			9.03			5.61			5.66	3.51	3.38	3.33	3.32	3.39	3.30	3.33	3.38	3.33	3.34	3.66	3.51	3.70	3.61	3.67	3.58
Fluoride	mg/L	0.505		0.474			0.290			0.291			<0.500	0.258	0.240	0.233	0.224	0.219	0.200	0.222	0.196	0.195	0.159	0.198	0.187	0.218	0.175	0.126	0.159
Sulfate as SO4	mg/L	478		471			390			232			127	109	103	99.2	99	101	96.3	102	98.4	100	94.7	106	107	107	106	104	104
Total Organic Carbon (TOC)	mg/L	4.17		4.02			2.92			2.21			1.75	1.63	1.63	1.61	1.44	0.928	1.42	1.54	1.40	1.54	1.36	1.60	0.774	1.44	1.15	1.59	<1.00
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020	<0.020	<0.020	<0.020	<0.020	<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	NA		NA			NA			NA			0.199	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-Phosphate as P ^	mg/L	NA		NA			NA			NA			<0.0500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050	<0.050	<0.100	<0.100	<0.100	<0.050	<0.050	<0.100	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.050	<0.100	<0.050
Arsenic	mg/L	0.0074		0.0124			0.0190			0.0156			0.0104	0.0073	0.0075	0.0064	0.0058	0.0074	0.0055	0.0017	0.0051	0.0046	0.0047	0.0042	0.0037	0.0033	0.0036	0.0029	0.0030
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001	<0.0002	<0.0001	<0.0002	<0.0002	<0.0001	<0.0010	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0005	<0.0010	<0.0005
Copper	mg/L	0.0016		0.0025			0.0017			0.0011			0.0004	0.001	<0.0025	<0.001	0.0014	0.0005	0.0013	<0.0010	0.0015	0.0023	0.0040	0.0014	0.0015	0.0028	0.0027	0.0020	0.0026
Iron	mg/L	<0.050		0.352			<0.250			0.129			0.075	0.054	<0.100	<0.100	<0.100	<0.050	<0.050	<0.100	0.070	0.079	<0.050	0.063	0.057	<0.100	0.062	<0.100	0.051
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0025	<0.0010	<0.0025	<0.0025	<0.0005	<0.0010	<0.0005
Manganese	mg/L	1.31		1.22			0.697			0.505			0.313	0.303	0.307	0.259	0.219	0.196	0.175	0.0772	0.161	0.163	0.150	0.145	0.134	0.122	0.111	0.120	0.105
Mercury (dissolved)	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	<0.0002	<0.0002	<0.0002
Mercury (dissolved low-level)	ng/L																												
Molybdenum	mg/L	0.0090		0.0068			0.0020			0.0021			0.0017	0.0008	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0005	<0.0010	<0.0005
Selenium	mg/L	0.0012		<0.0020			<0.0010			<0.0010			<0.0010	<0.001	<0.0010	<0.0020	<0.0020	0.0038	<0.0020	<0.0020	0.0031	<0.0010	0.0014	<0.0020	0.0012	<0.0050	0.0006	<0.0020	<0.0010
Silica (SiO2)	mg/L</																												