



ANNEX F5

GROUNDWATER MONITORING RESULTS

**TABLE F5.1 GROUNDWATER MONITORING RESULTS (APRIL 2024)**

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.73	2.79	2.68	2.55	2.65	2.48	2.38	3.14	2.8	2.58	3.07	11.86	34.96	41.17
Bicarbonate Alkalinity as CaCO <sub>3</sub>	mg/L	166	266	149	<1	2	<1	80	<1	165	201	162	57	15	12
Carbonate Alkalinity as CaCO <sub>3</sub>	mg/L	<1	<1	<1	63	31	122	12	81	<1	<1	<1	<1	<1	<1
Total Alkalinity as CaCO <sub>3</sub>	mg/L	166	266	149	76	33	175	91	119	165	201	162	57	15	12
pH Value	pH Unit	7.6	8	8	10.4	9.8	11.2	8.7	10.7	7.9	7.8	7.9	7	5.7	5.7
Electrical Conductivity	µS/cm	1520	934	1080	1010	3080	1210	2140	3660	2480	1130	1510	286	91	99
Ammonia	mg/L	0.49	0.02	1.44	5.3	2.69	4.86	5.38	15.7	0.54	0.02	0.08	0.03	0.02	0.03
Chloride	mg/L	336	42	216	241	828	226	591	1210	633	187	340	20	14	18
Nitrite	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus	mg/L	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.02	0.02	0.01	0.04	0.01	<0.01
Sulphate	mg/L	75	173	65	67	186	70	50	35	150	80	80	51	3	4
Sulphide	mg/L	<0.1	<0.1	<0.1	3.3	3.9	13.8	1.3	11	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.8	0.5	1.7	6.6	3.4	6.6	6.1	16.6	0.9	0.1	0.2	<0.1	0.2	0.3
Nitrate	mg/L	0.15	2.94	0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	0.02	<0.01	0.09	0.07
Total Nitrogen	mg/L	0.9	3.4	1.7	6.6	3.4	6.6	6.1	16.6	0.9	0.1	0.2	<0.1	0.3	0.4
Boron	µg/L	230	240	220	180	240	180	680	510	610	170	120	20	20	10
Calcium	mg/L	62.8	65	61.3	40.3	82.4	38.1	25	93.2	94.9	81.1	107	24.5	0.74	1.08

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium	mg/L	14.5	50.4	4.95	0.06	4.95	<0.05	10.6	<0.05	18.9	10.9	9.83	4.3	1.05	0.97
Sodium	mg/L	178	53.6	110	130	441	140	335	603	341	122	152	25.8	14.2	14.6
Iron	mg/L	<0.04	<0.04	0.1	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	0.35	<0.04	<0.04
Potassium	mg/L	22.8	13.5	25.8	32.9	76.3	52.6	43	65.4	40.3	12	10.7	2.99	4.07	3.9
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	4	2
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	2100	208	859	1	<1	<1	4	<1	264	2920	861	639	17	7
Nickel	µg/L	<1	<1	<1	1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	12	23	13
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	7	<2	6	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	7	6	18	26	28	47	15	46	18	3	4	3	3	2
Total Organic Carbon	mg/L	2	<1	6	6	<1	7	2	6	6	<1	<1	<1	<1	<1

TABLE F5.2 GROUNDWATER MONITORING RESULTS (MAY 2024)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	2.97	2.97	2.92	3.13	2.42	2.69	2.58	2.82	3.61	3.26	3.5	6.8	36.9	N/A <sup>(a)</sup>
Bicarbonate Alkalinity as CaCO <sub>3</sub>	mg/L	168	208	233	186	<1	<1	84	<1	157	207	232	58	14	N/A
Carbonate Alkalinity as CaCO <sub>3</sub>	mg/L	<1	<1	<1	<1	53	117	10	73	<1	<1	<1	<1	<1	N/A
Total Alkalinity as CaCO <sub>3</sub>	mg/L	168	208	233	186	79	184	94	112	157	207	232	58	14	N/A
pH Value	pH Unit	7.6	7.9	7.7	8	10.5	11.3	8.6	10.7	7.9	7.7	8	6.7	5.6	N/A
Electrical Conductivity	µS/cm	1540	4820	780	899	1740	1270	2160	3650	1120	1110	697	302	93	N/A
Ammonia	mg/L	0.29	1.05	0.05	0.09	6.59	3.92	4.66	14.5	0.02	0.01	0.03	0.04	0.03	N/A
Chloride	mg/L	346	1380	56	96	428	198	618	1070	145	150	45	20	14	N/A
Nitrite	mg/L	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	N/A
Phosphorus	mg/L	<0.01	0.01	0.02	<0.01	<0.01	<0.01	0.03	<0.01	0.02	0.02	<0.01	0.02	0.01	N/A
Sulphate	mg/L	75	262	84	129	129	89	45	40	224	117	67	60	3	N/A
Sulphide	mg/L	<0.1	<0.1	<0.1	<0.1	5.5	7.3	1.6	10.9	<0.1	<0.1	<0.1	<0.1	<0.1	N/A
Total Kjeldahl Nitrogen	mg/L	0.4	1	0.3	0.4	9.3	4.4	5.9	15.4	0.4	0.2	0.2	0.1	0.1	N/A
Nitrate	mg/L	0.01	0.17	0.32	0.04	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.24	0.04	0.12	N/A
Total Nitrogen	mg/L	220	700	160	170	220	160	690	500	260	280	100	0.2	0.2	N/A
Boron	µg/L	68.9	84.1	92.8	98.6	35.1	38.1	22.9	88	113	90.9	88.6	20	10	N/A

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Calcium	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	24.8	0.82	N/A
Mercury	µg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	24.2	13	N/A
Magnesium	mg/L	24.2	42.8	18	17.3	63.7	56.8	40.5	61.9	20.1	15.6	8.51	<0.04	<0.04	N/A
Sodium	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.3	3.77	N/A
Iron	mg/L	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	N/A
Potassium	mg/L	<1	<1	3	2	<1	<1	<1	<1	4	2	2	<1	<1	N/A
Cadmium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	4	N/A
Chromium	µg/L	1660	242	52	12	<1	<1	4	<1	4	984	300	<1	<1	N/A
Copper	µg/L	<1	<1	<1	<1	2	2	<1	<1	<1	<1	<1	620	16	N/A
Lead	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<1	N/A
Manganese	µg/L	220	700	160	170	220	160	690	500	260	280	100	16	306	N/A
Nickel	µg/L	<2	<2	<2	<2	<2	7	<2	13	<2	<2	<2	<2	<2	N/A
Zinc	µg/L	11	21	14	15	42	47	12	49	22	10	7	3	3	N/A
Biochemical Oxygen Demand	mg/L	3	3	5	6	9	8	2	8	8	3	4	1	1	N/A
Chemical Oxygen Demand	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	24.2	13	N/A
Total Organic Carbon	mg/L	24.2	42.8	18	17.3	63.7	56.8	40.5	61.9	20.1	15.6	8.51	<0.04	<0.04	N/A

Note:

(a) MWX-14 is not accessible due to safety considerations.

TABLE F5.3 GROUNDWATER MONITORING RESULTS (JUNE 2024)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.66	3.54	3.68	3.59	2.58	2.6	3.22	4.16	4.76	N/A <sup>(a)</sup>	4.63	7	38.22	N/A <sup>(b)</sup>
Bicarbonate Alkalinity as CaCO <sub>3</sub>	mg/L	143	226	214	143	106	<1	12	16	199	N/A	232	58	14	N/A
Carbonate Alkalinity as CaCO <sub>3</sub>	mg/L	<1	<1	<1	<1	4	139	100	37	<1	N/A	<1	<1	<1	N/A
Total Alkalinity as CaCO <sub>3</sub>	mg/L	143	226	214	143	110	161	112	54	199	N/A	232	58	14	N/A
pH Value	pH Unit	7.6	8	7.8	8.1	8.5	11.1	10.4	9.6	7.8	N/A	8	6.7	5.6	N/A
Electrical Conductivity	µS/cm	1120	3690	1080	769	729	1150	1180	2510	1240	N/A	697	302	93	N/A
Ammonia	mg/L	0.14	0.47	0.4	0.42	0.19	3.49	5.59	10	0.01	N/A	0.03	0.04	0.03	N/A
Chloride	mg/L	217	878	142	98	83	191	239	705	146	N/A	45	20	14	N/A
Nitrite	mg/L	<0.01	0.02	<0.01	0.02	0.02	0.02	0.02	0.02	0.02	N/A	0.02	<0.01	<0.01	N/A
Phosphorus	mg/L	<0.01	0.02	0.01	0.01	0.01	<0.01	<0.01	<0.01	0.01	N/A	<0.01	0.02	0.01	N/A
Sulphate	mg/L	64	268	105	81	81	88	102	115	150	N/A	67	60	3	N/A
Sulphide	mg/L	<0.1	<0.1	<0.1	0.2	0.4	9.4	5.1	5.6	<0.1	N/A	<0.1	<0.1	<0.1	N/A
Total Kjeldahl Nitrogen	mg/L	0.3	0.5	0.6	0.7	0.5	4.3	6.7	10.6	0.3	N/A	0.2	0.1	0.1	N/A
Nitrate	mg/L	0.56	1.38	0.02	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	N/A	0.24	0.04	0.12	N/A
Total Nitrogen	mg/L	0.8	1.9	0.6	0.7	0.5	4.3	6.7	10.6	0.3	N/A	100	0.2	0.2	N/A
Boron	µg/L	170	510	170	180	240	200	240	350	360	N/A	88.6	20	10	N/A

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Calcium	mg/L	137	514	89.1	71.2	90.7	156	173	371	116	N/A	<0.04	24.2	13	N/A
Mercury	µg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	8.51	<0.04	<0.04	N/A
Magnesium	mg/L	18.6	34.5	22.4	18	41	54.8	46.4	59	18.4	N/A	<0.2	3.3	3.77	N/A
Sodium	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	<1	<0.2	<0.2	N/A
Iron	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	2	<1	<1	N/A
Potassium	mg/L	<1	1	2	<1	1	1	1	<1	3	N/A	<1	2	4	N/A
Cadmium	µg/L	<1	<1	<1	<1	<1	2	<1	<1	<1	N/A	300	<1	<1	N/A
Chromium	µg/L	210	218	715	26	9	<1	<1	2	17	N/A	<1	620	16	N/A
Copper	µg/L	<1	<1	<1	<1	<1	1	2	1	<1	N/A	<10	<1	<1	N/A
Lead	µg/L	<10	<10	<10	<10	<10	<10	11	<10	<10	N/A	100	16	306	N/A
Manganese	µg/L	<2	<2	<2	<2	<2	5	4	3	<2	N/A	<2	<2	<2	N/A
Nickel	µg/L	6	6	10	10	13	45	47	35	19	N/A	7	3	3	N/A
Zinc	µg/L	2	1	3	4	6	12	14	11	6	N/A	4	1	1	N/A
Biochemical Oxygen Demand	mg/L	137	514	89.1	71.2	90.7	156	173	371	116	N/A	<0.04	24.2	13	N/A
Chemical Oxygen Demand	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	8.51	<0.04	<0.04	N/A
Total Organic Carbon	mg/L	18.6	34.5	22.4	18	41	54.8	46.4	59	18.4	N/A	<0.2	3.3	3.77	N/A

**Note:**

- (a) Monitoring well MWX-10 was under maintenance.
- (b) Monitoring well MWX-14 is not accessible due to safety considerations.

FIGURE F5.1 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-1)

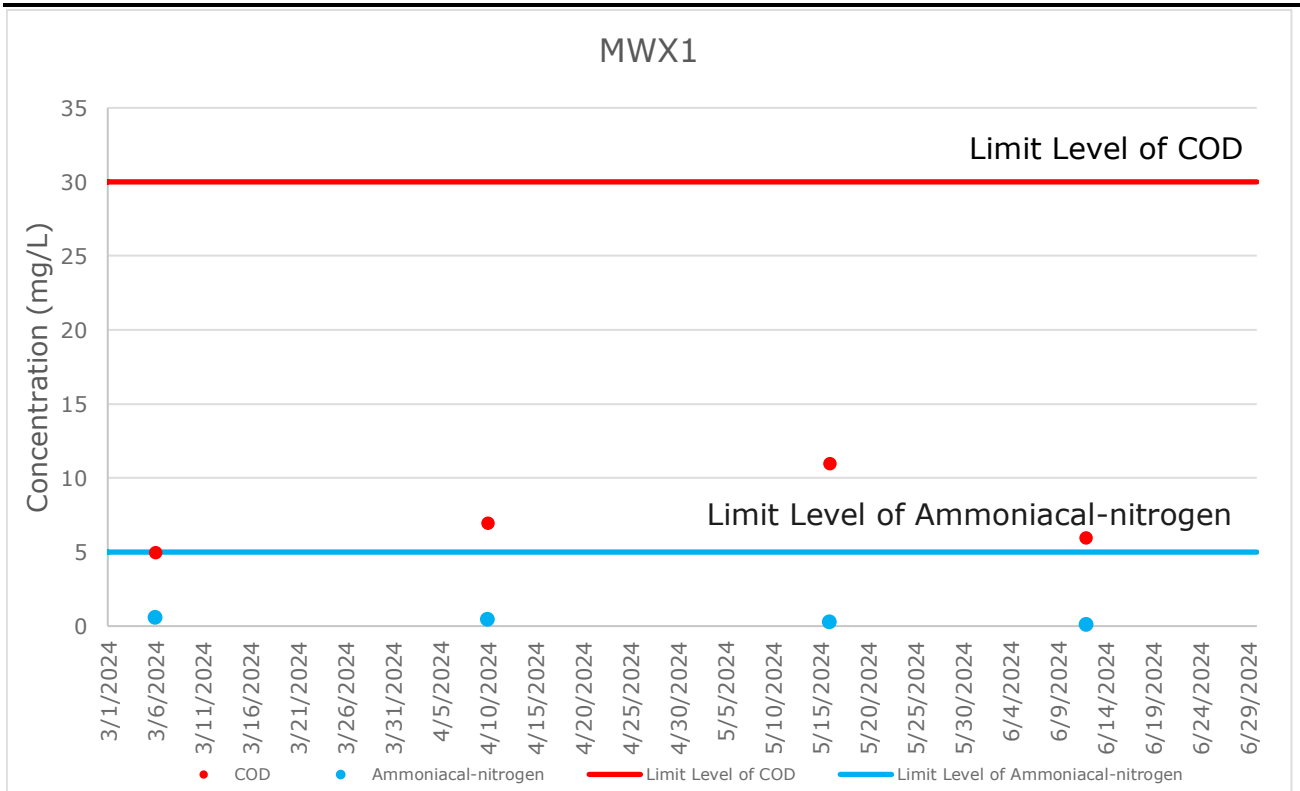


FIGURE F5.2 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-2)

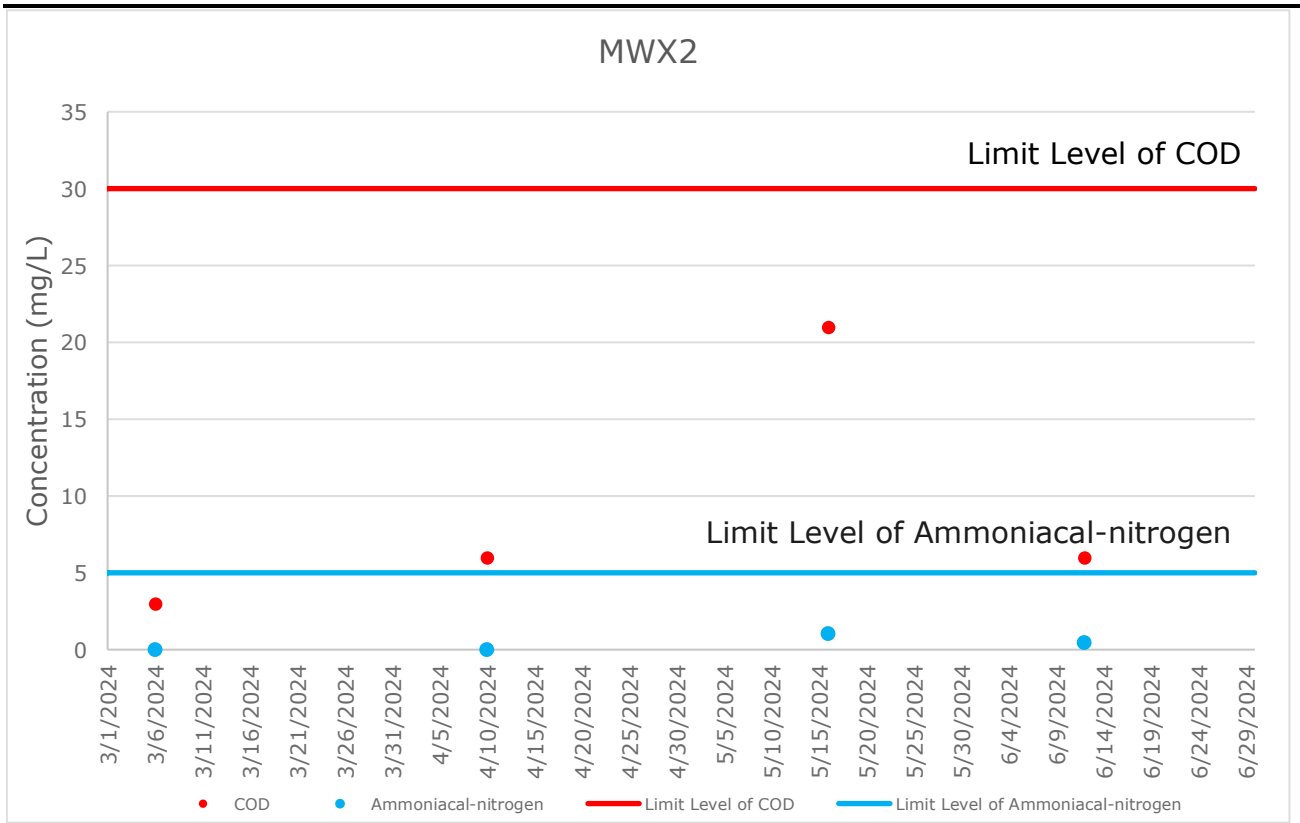




FIGURE F5.3 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-3)

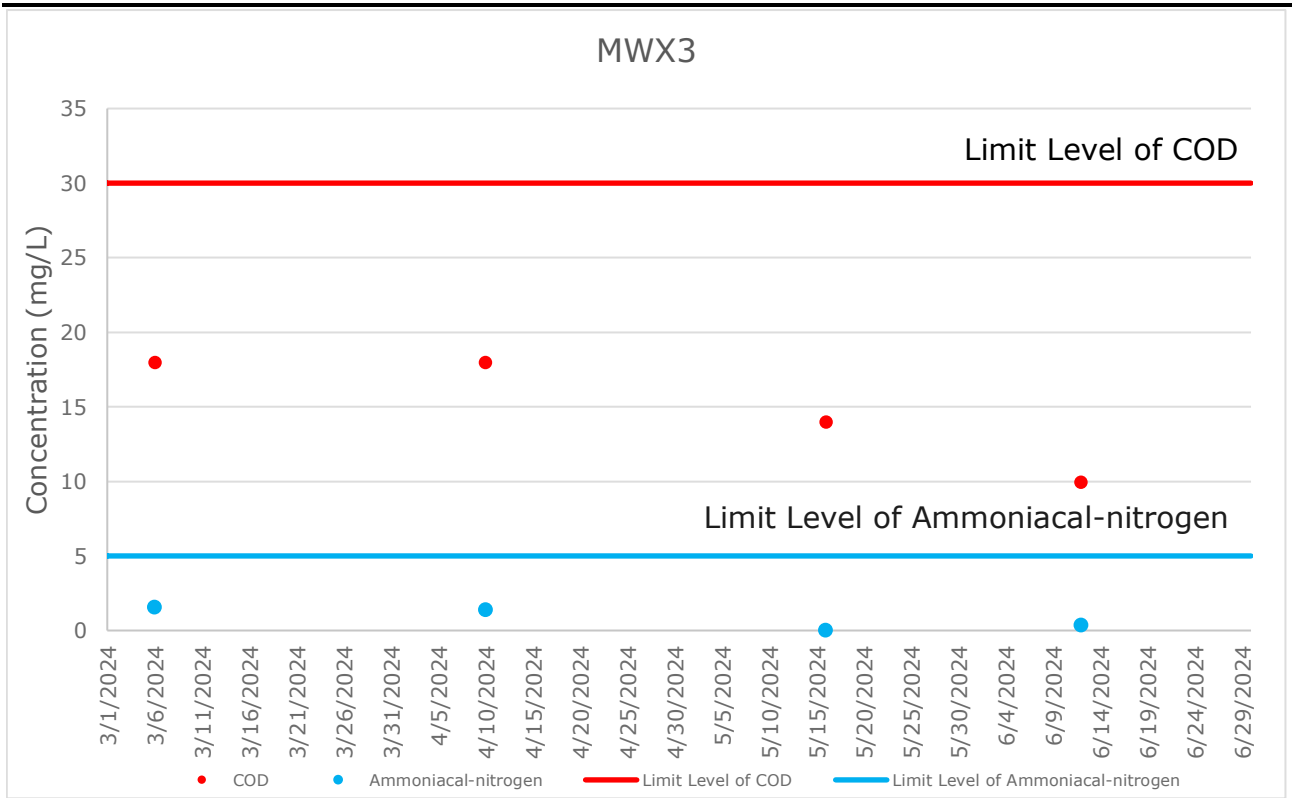


FIGURE F5.4 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-4)

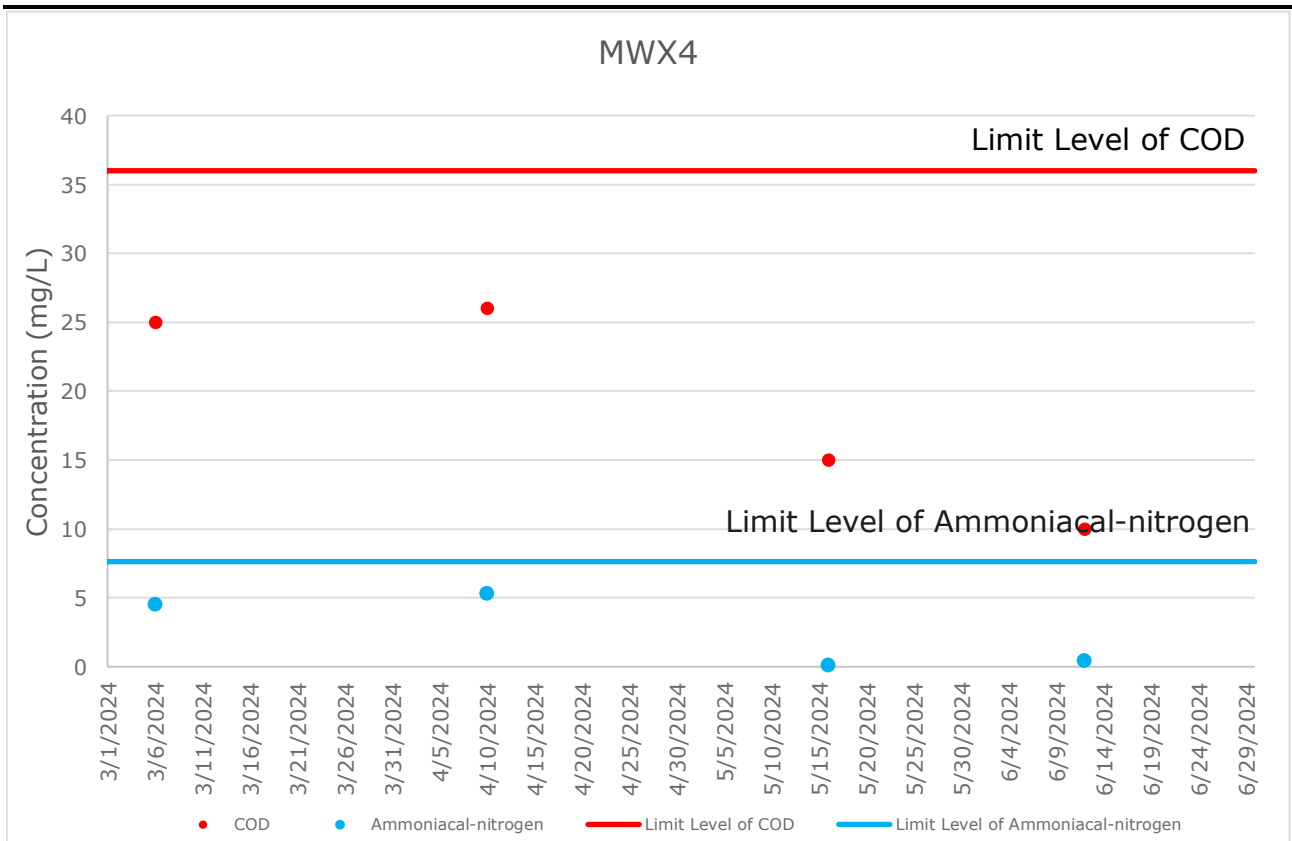


FIGURE F5.5 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-5)

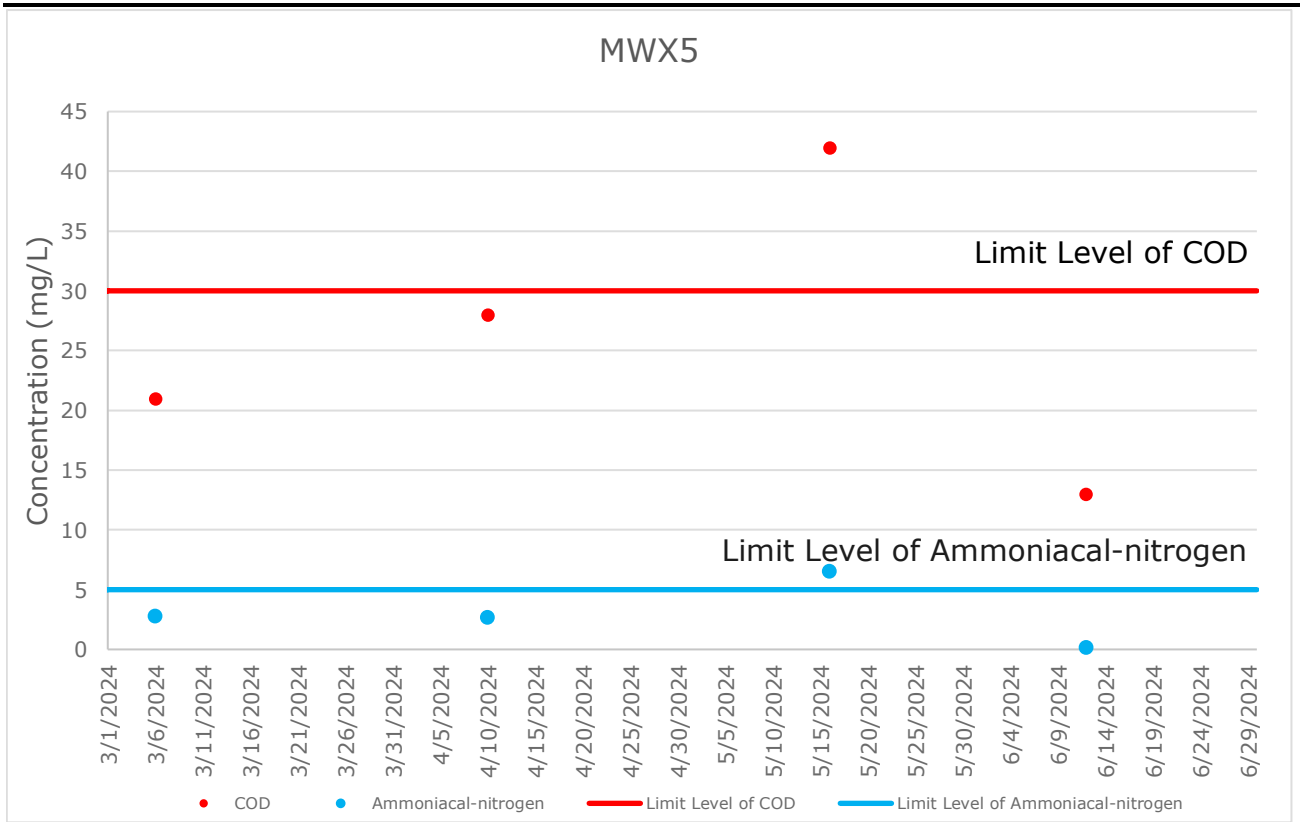


FIGURE F5.6 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-6)

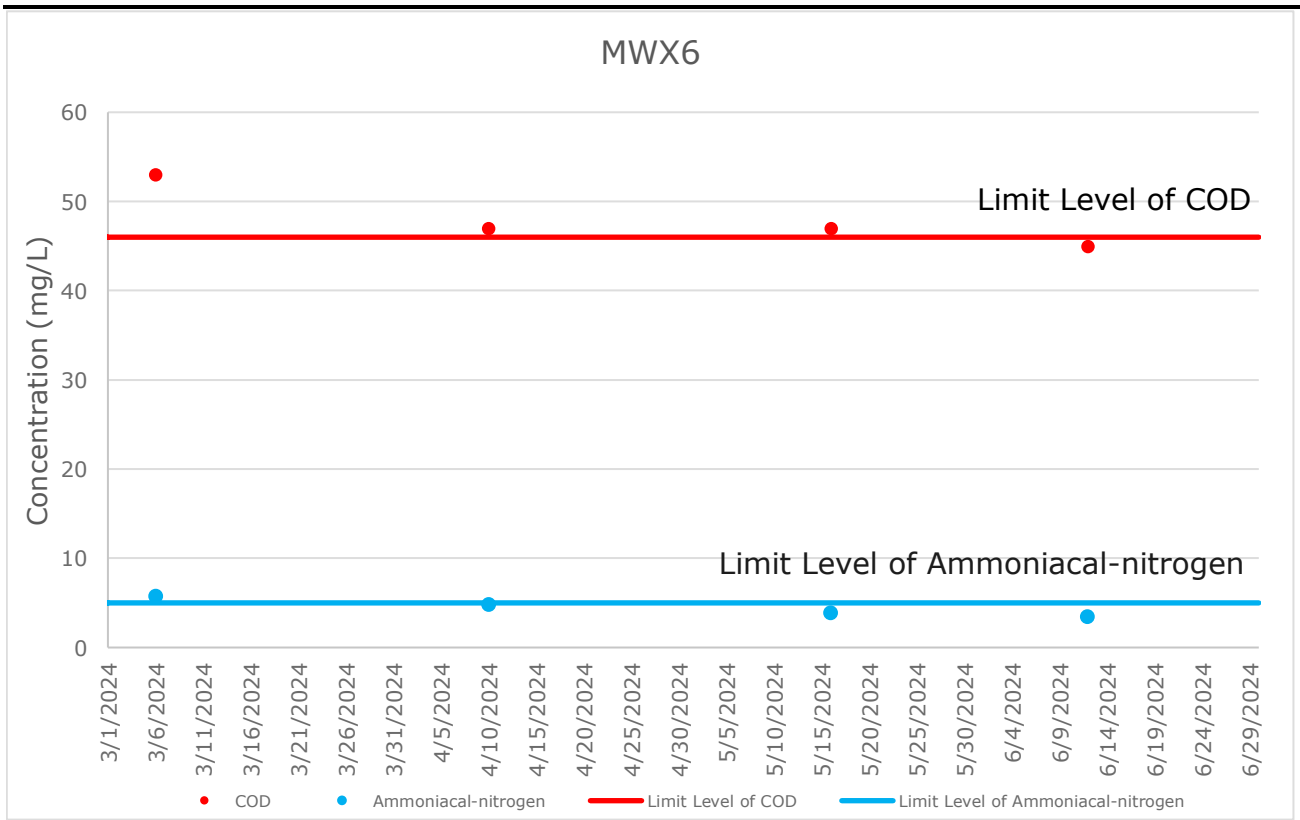


FIGURE F5.7 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-7)

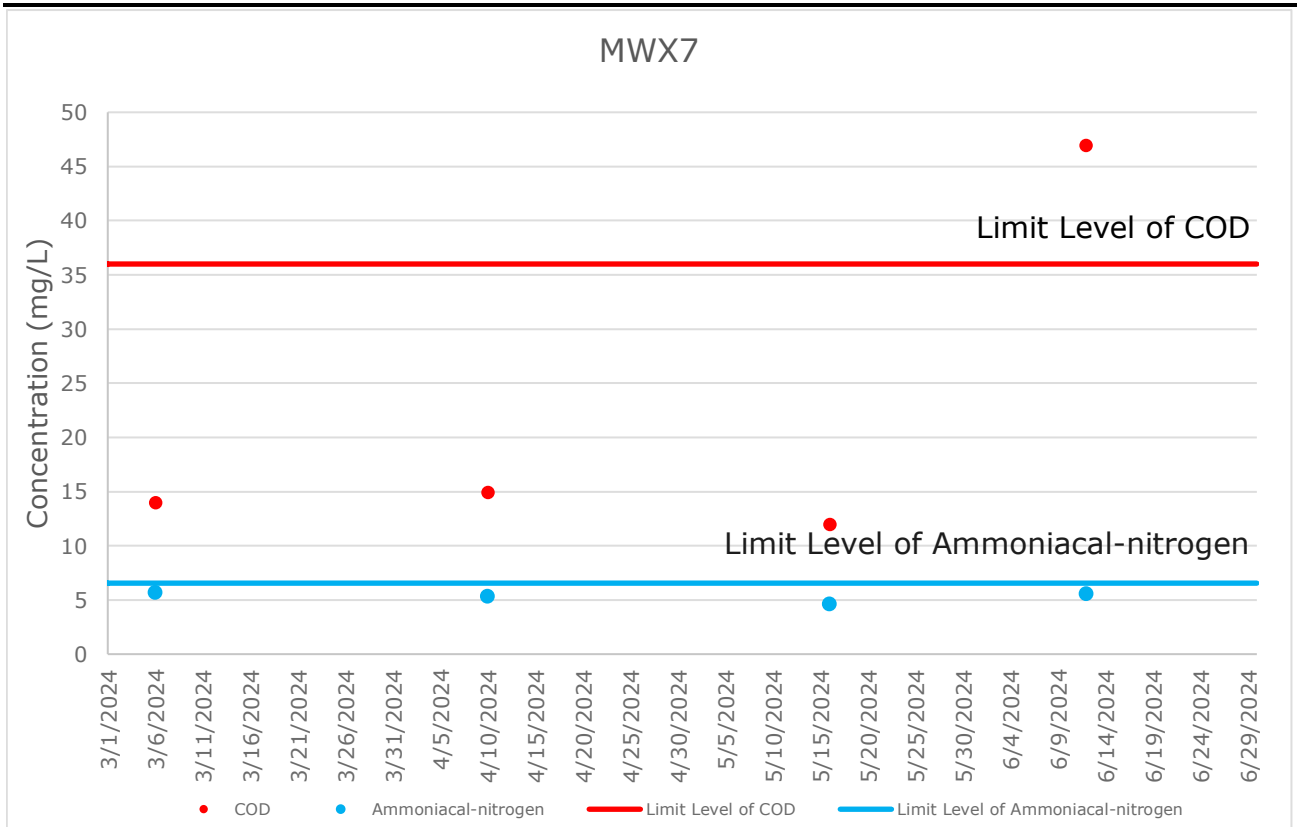


FIGURE F5.8 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-8)

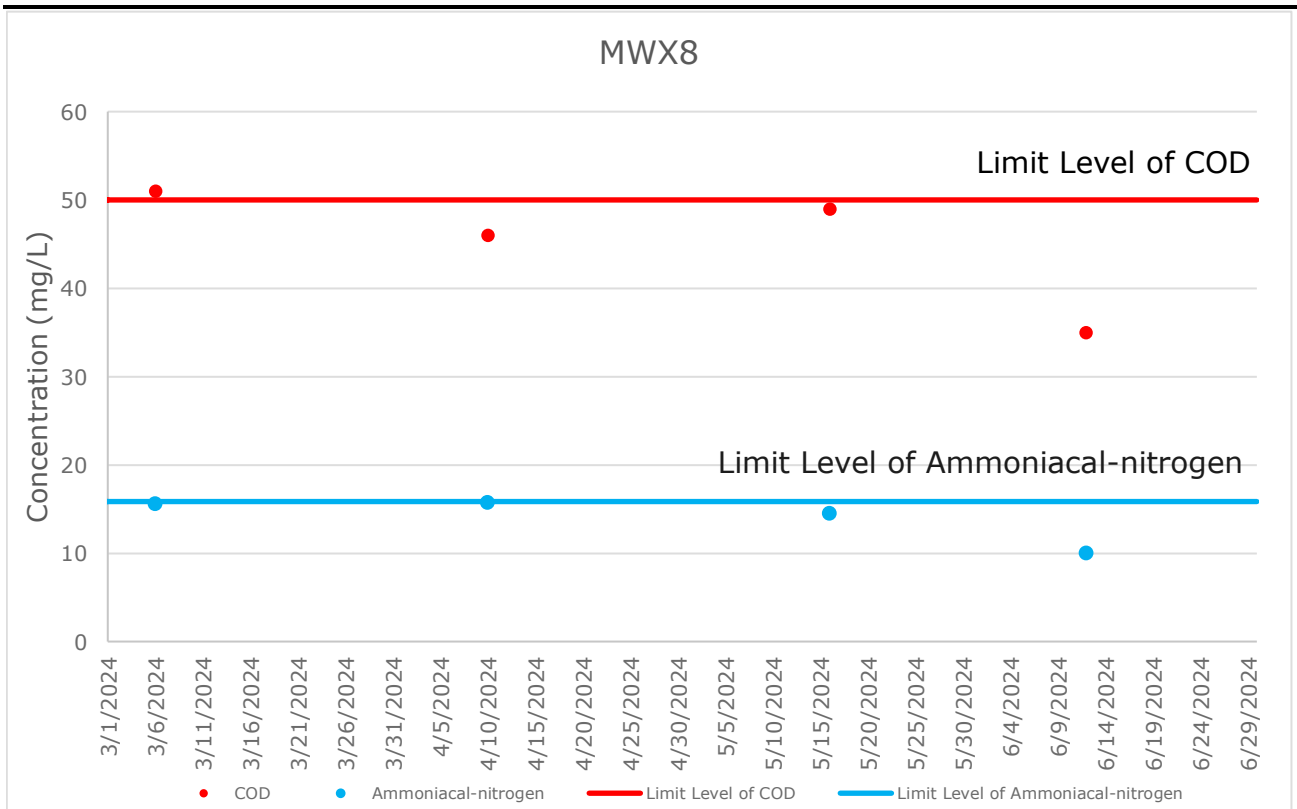


FIGURE F5.9 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-9)

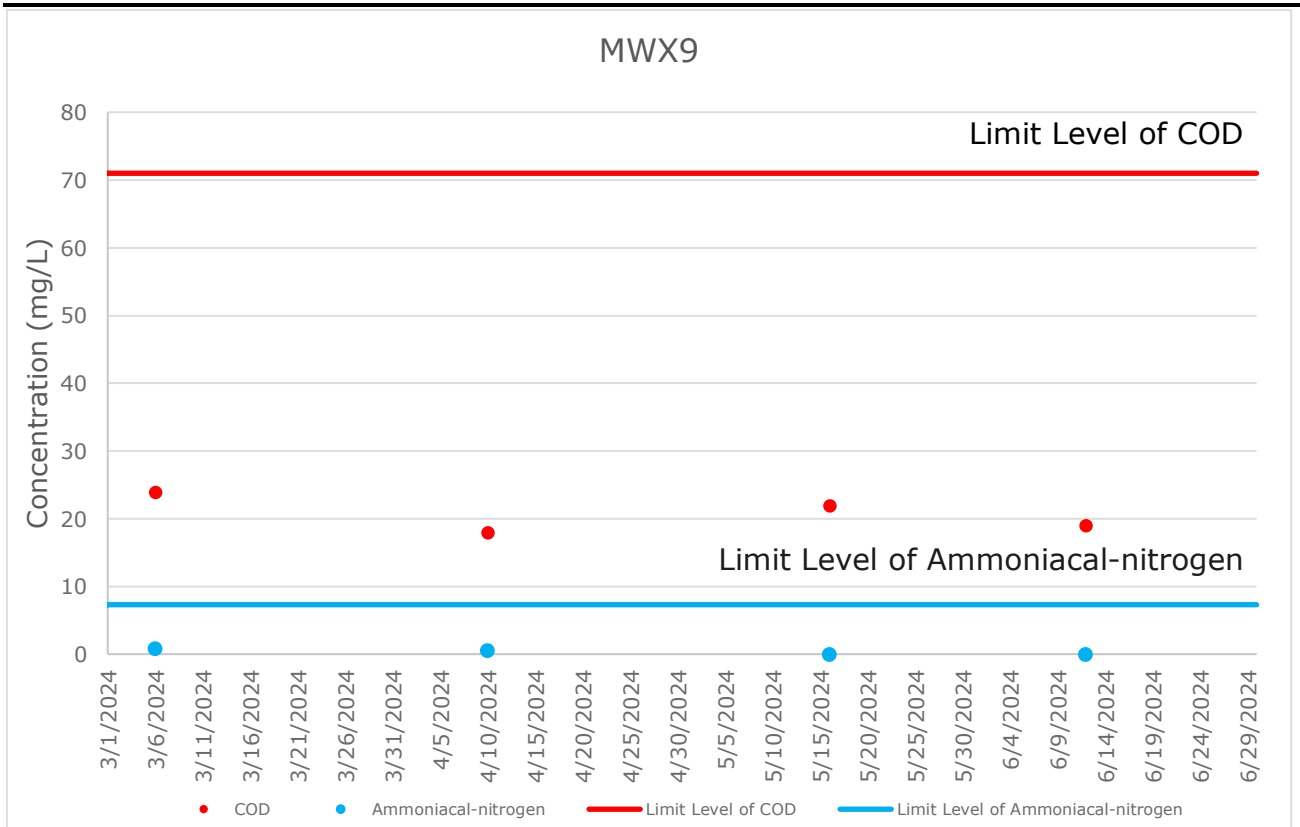


FIGURE F5.10 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-10)

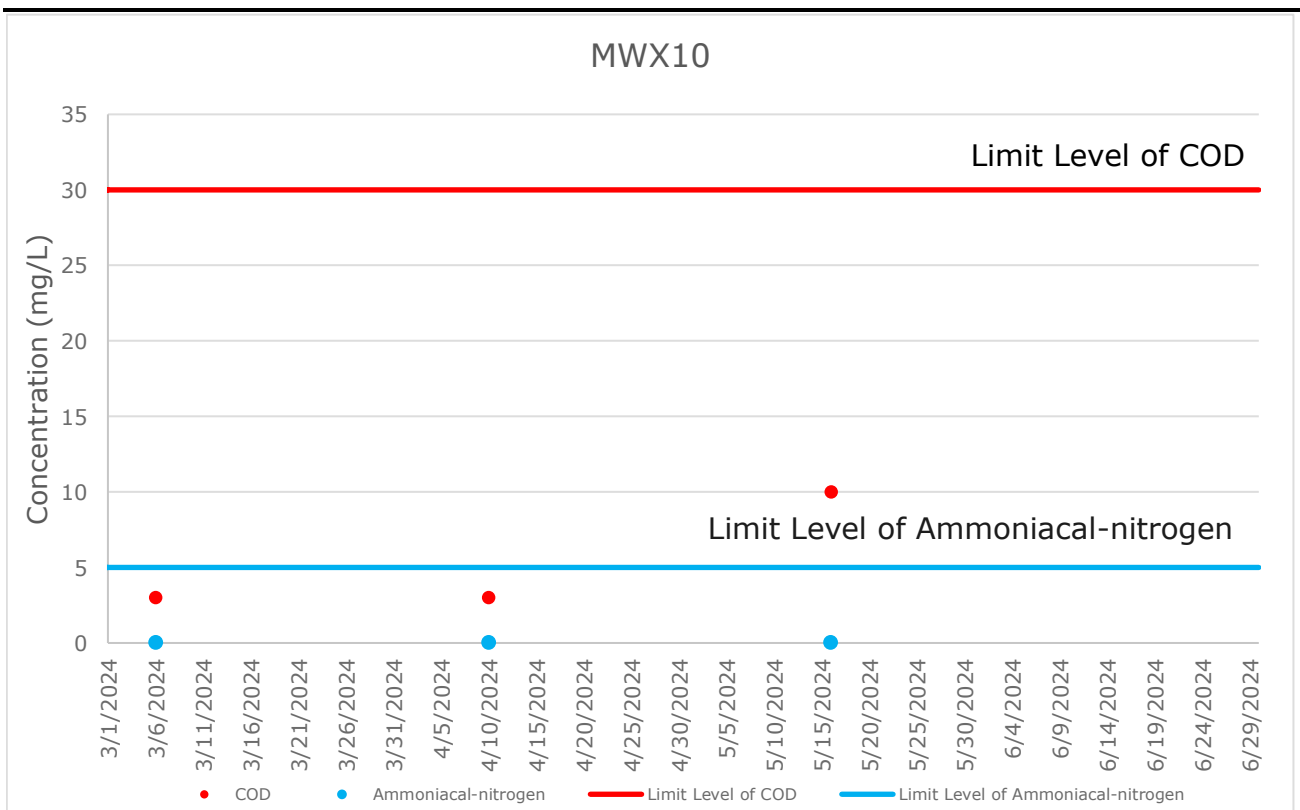


FIGURE F5.11 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-11)

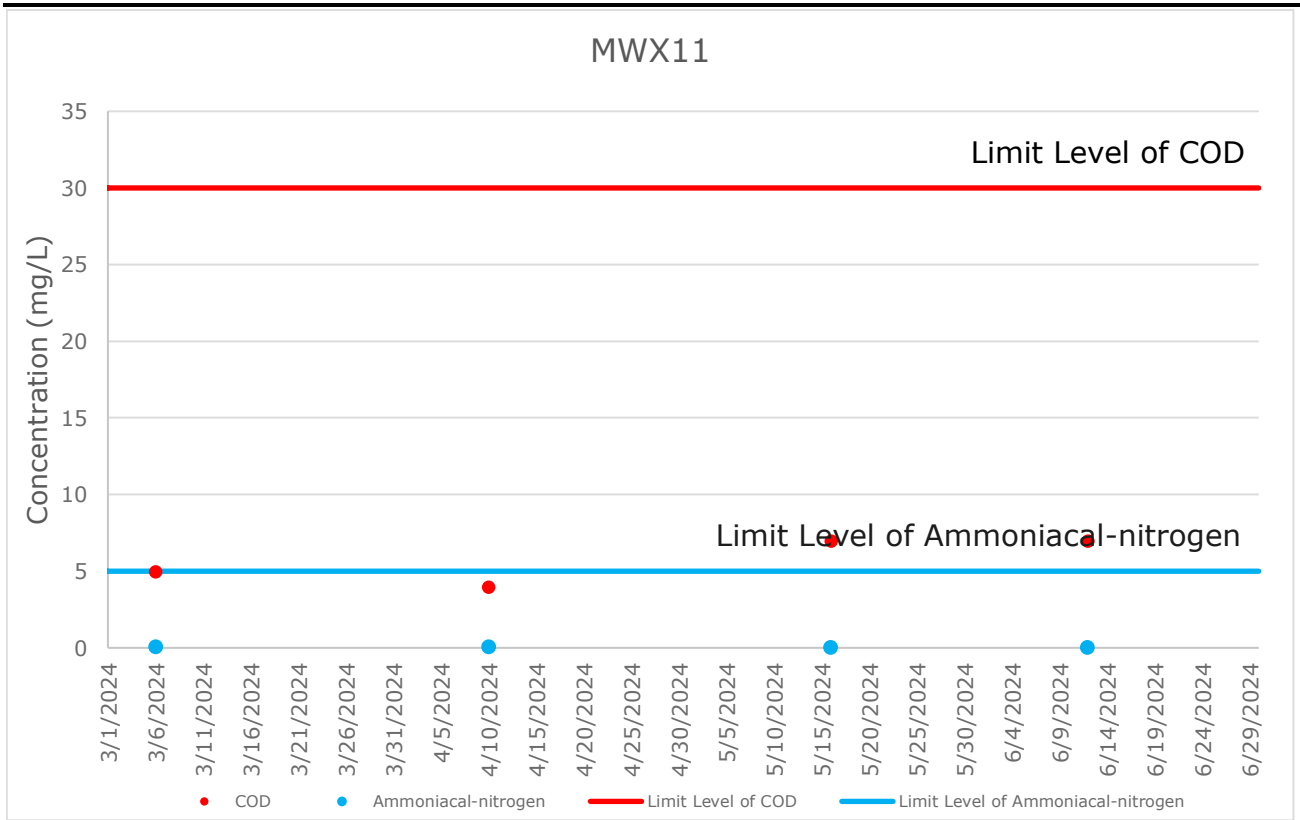


FIGURE F5.12 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-12)

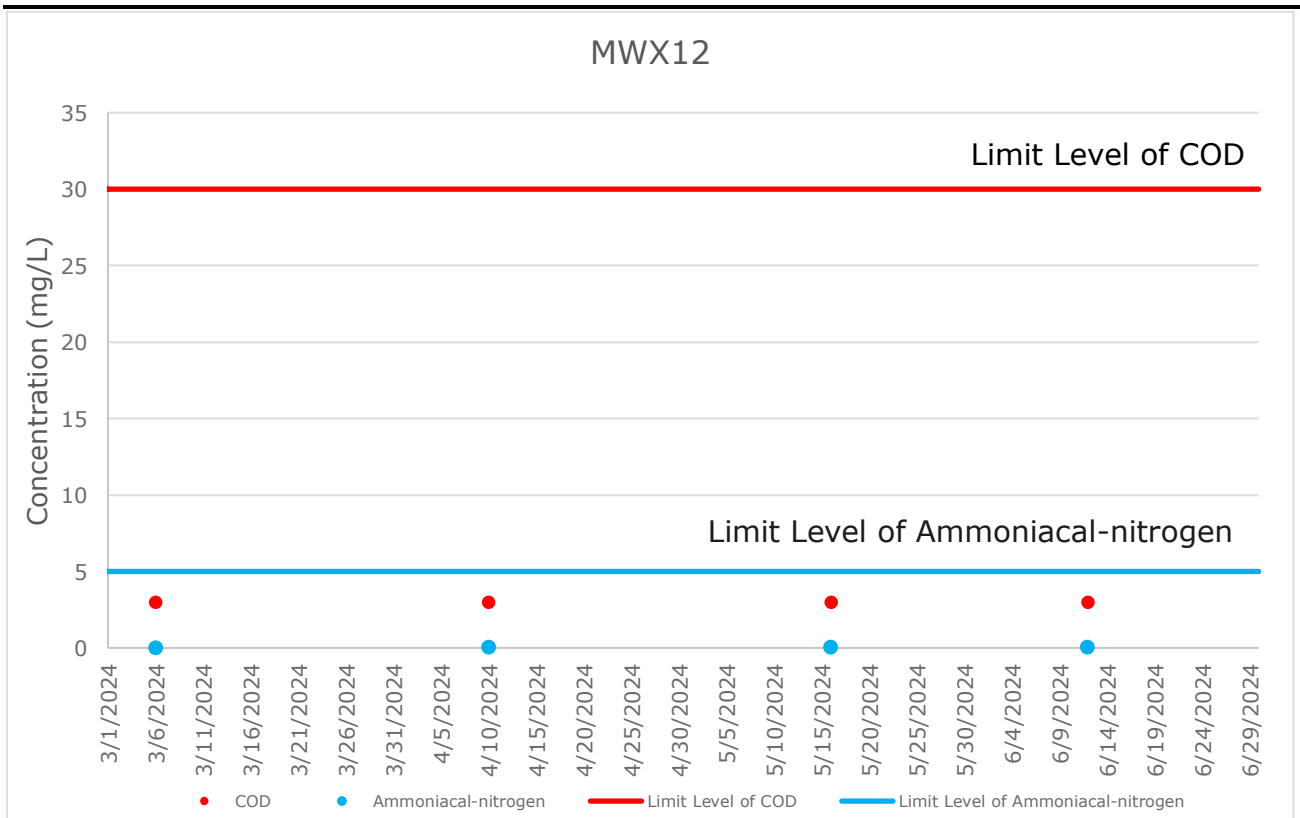


FIGURE F5.13 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-13)

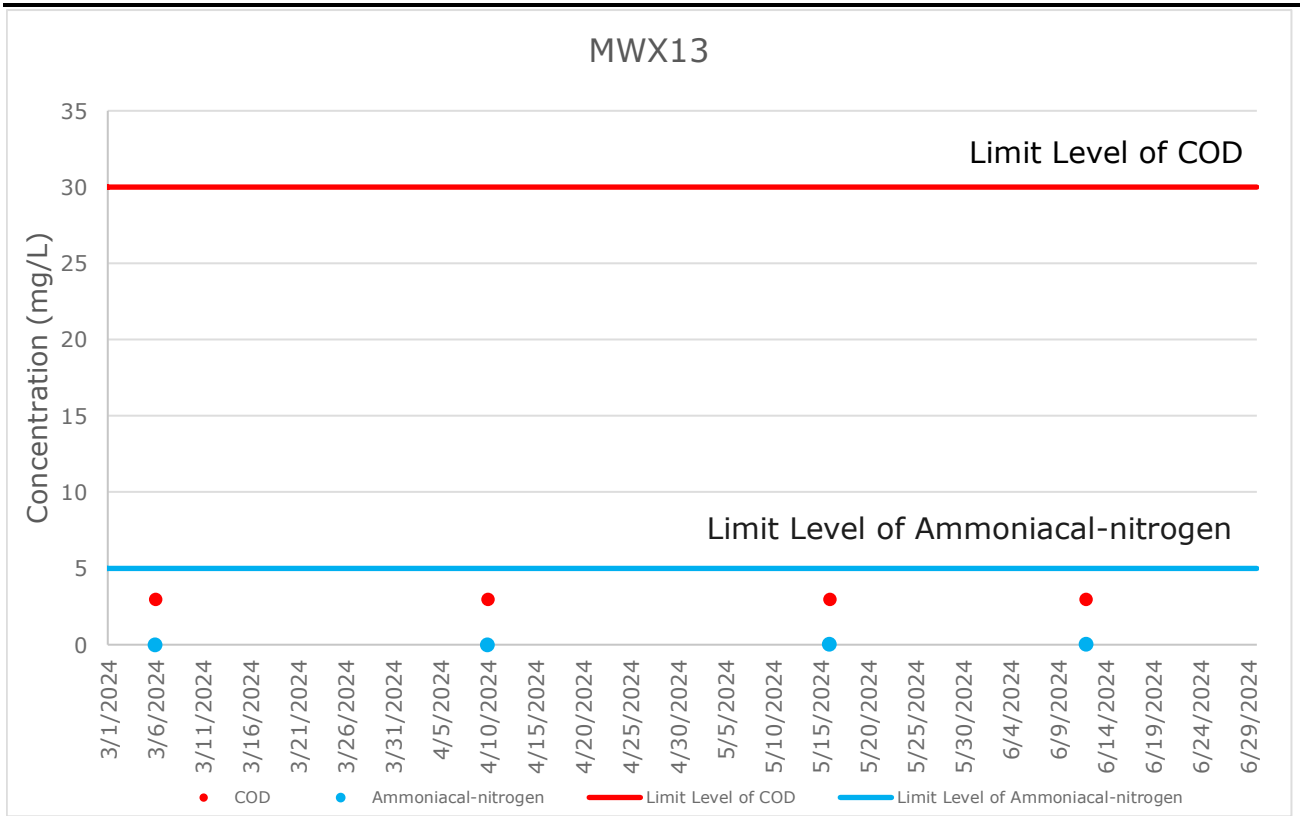


FIGURE F5.14 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-14)

