



January 21, 2021

Reference No. 11225022-00

Mr. Bruce Bernard
Manager of Field Operations
Calvin, Giordano & Associates, Inc.
1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316

Dear Mr. Bernard:

Re: **Water Quality Sampling Report – October 2021**
Lakes 3 and 6 – Miromar Lakes
Fort Myers, Lee County, Florida

GHD Services Inc. (GHD) is pleased to present the results of our water quality sampling services for Lakes 3 and 6 – Miromar Lakes.

1. Water Quality Sampling - October 2021

The October 2021 sampling event consisted of the collection of surface water samples from a total of five (5) test locations (WQ #1 through #4 and #6) from Lake 6 – Miromar Lakes, and one (1) location (WQ #5) at the outfall of Lake 3 within the Miromar Lakes Golf Club as identified on **Figure 1**. As discussed in May 2019, due to limitations of the lake depth at the weir location (i.e. WQ #3) and the potential for disturbance of sediments impacting the sample results, the sample collected at a depth of 36 inches was moved to a deeper area of the lake, at the west entrance to the east-west canal that discharges at the weir, and renamed to WQ Location #6. The October 2021 sampling event represents the seventh sampling event for the new WQ Location #6.

The sampling plan includes sample collection at the following locations and depths:

Sample Identification	Sampling Location	Sample Depth
WQ Location #1	Rip Rap in front of the Miromar Lakes Pkwy Bridge	18 inches
WQ Location #2	Mouth of Canal (west of Via Portofino Way)	18 inches
WQ Location #3A	Back of Weir (southeast of Via Navona Way)	18 inches
WQ Location #4	Beach front (east of the Miromar Lakes Pkwy & Montlelago Ct.)	18 inches
WQ Location #5	Lake 3 Outfall within the Miromar Lakes Golf Club	18 inches
WQ Location #6	Front of Weir (southeast of Via Navona Way)	36 inches

Conductivity, dissolved oxygen, pH, and temperature were measured in the field with a calibrated YSI Model 556 multi-parameter water quality meter. Turbidity and total water depth were measured. Water clarity/transparency (i.e. Secchi depth) was also observed using a Secchi disk. Surface Water Field Sheets are attached. Field data is summarized in **Table 1**.



Samples are collected using direct-dip sampling methods. The samples are capped, labeled, packed on ice, and transported to Benchmark EnviroAnalytical, Inc., in North Port, Florida. Benchmark EnviroAnalytical, Inc. is certified by the State of Florida and NELAP (National Environmental Laboratory Accreditation Conference). Laboratory analysis are conducted for 5-Day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Total Nitrogen, nitrogen speciation (ammonia, TKN, and nitrate + nitrite), Total Phosphorus, Ortho Phosphorus (Field Filtered) and Chlorophyll-a.

All samples collected during the October 2021 sampling event were prepared and analyzed within the method required holding times. The laboratory data have been reviewed with respect to authenticity, precision, limits of detection, and accuracy of the data. The laboratory analytical results are summarized in the attached **Table 1**. The laboratory report and data compliance memorandum are also attached.

Trend graphs have been prepared for each monitor location for laboratory analytical results and select field measurements. The trend graphs include water quality action levels for select parameters as developed and presented in the Lake Management Plan for Miromar Lakes. GHD recommends that if a single measurement exceeds an action level the District notify their lake maintenance contractor to inspect the lake(s) for evidence of potential algal blooms and treat as needed. If a subsequent measurement exceeds an action level, it is recommended the District investigate potential reasons behind the change and take appropriate action(s) as applicable based on the findings.

2. Analytical Summary

It appears that between the prior sampling event in August 2021 and the recent sampling event conducted on October 26, 2021:

- BOD5 levels remained consistent except for at WQL #1 and #3A which slightly decreased;
- Dissolved Oxygen and DO% results varied, but remained relatively constant according to historical trends;
- TKN and Total Nitrogen remained constant at all 6 sampling locations;
- Orthophosphorus and Total Phosphorous remained relatively constant at all locations;
- Total Suspended Solids and turbidity remained relatively constant at all locations;
- Chlorophyll-a results remained constant except at WQL #5 which decreased to 16.5 mg/L, a decrease back under the action level from last sampling event;
- pH at almost all locations increased, except for WQL #5, which slightly decreased;

The dissolved oxygen readings at the monitoring locations fluctuate throughout the year as anticipated given the temperature of the water and biological activity. In general, the dissolved oxygen remains well above the action level for dissolved oxygen percent (%) of a minimum of 38%. All sample locations had relatively consistent dissolved oxygen levels as the last sampling event except for WQL #3A, which increased. WQL #2 has held a slightly upward trend over the last 4 sampling events. We will monitoring future trends at this location. The dissolved oxygen fluctuates throughout the year with apparent lows during the latter part of the year (e.g. September to December months). GHD recommends the District



notify their lake maintenance contractor to continue to watch for evidence of algal blooms during these time periods.

The pH at the monitoring locations generally remains consistent over time. Although the pH fluctuates, the pH typically remains within the upper and lower action levels. The pH during this month's sampling event increased at all locations, except for WQL #5, which slightly decreased, but remained consistent with historical levels.

The concentrations of chlorophyll-a were below the action level at all sample locations this month. It appears chlorophyll-a is elevated in Lake 3 during the monitor events conducted in warmer months of the year. This month's results were consistent with historical levels.

During the October 2021 monitoring event, the concentrations of total phosphorous varied, but remained consistent with historical levels, all being below the action level limit.

During the October 2021 sampling event, the concentrations of orthophosphate remained mostly consistent with historical levels, all below the action level limit. There has been a downward trend at WQL #2, #3A, and #5 over this year's events.

While the total nitrogen has fluctuated in the past, it has remained below the action levels. Total nitrogen remained consistent at all sample locations during the October 2021 monitoring event.

While turbidity has fluctuated in the past, the observed turbidity generally has stayed well below the action level and remained consistent, except for WQL #5, which was 420% higher than the last sampling events level.

Of note for future months prior to the next sampling event, based on historical data, it appears the BOD tends to be elevated during April/May. While the BOD fluctuates, including detections above the action level, the BOD generally does not remain above its action level for more than one monitoring event.

During the months of April/May, particularly at Lake 3, the lake maintenance contractor may need to inspect the lakes more often for evidence of potential algal blooms and treat as needed.

The conductivity at the monitoring locations fluctuates throughout the year but generally remain similar to other monitoring locations with the exception of WQL #5. The WQL #5 location is at the weir of the Lake 3 on the golf course, whereas the other sample locations are from Lake 6 in the residential development area. Therefore, the variation from WQL #5 to the other locations is not unexpected. The conductivity at WQL #5 is generally higher than the conductivity at the other monitoring locations. This may be caused by high levels of recent rain diluting the isolated water.

While the total suspended solids (TSS) have fluctuated, it generally remains below the action level. The results from October 2021 were consistent with historical trends and below the action level.



3. Annual Review

Throughout the sampling events conducted in 2021, water quality conditions have remained relatively stable through the year, with notable trends highlighted below. Considering the climate of the Site, typically water quality is expected to dilute in the warmer, wetter months, and concentrate in the drier, cooler months.

The parameters measured during the sampling events in February, August and October showed stable conditions at most Lakes for BOD, DO, Total Nitrogen, Total Phosphorus, TSS, Chlorophyl A, Orthophosphate, Total kjeldahl nitrogen, pH, Turbidity, Conductivity, Water Depth and Temperature.

Specifically, a notable downward trend was seen over the last 3 sampling events for DO at WQL #1 and #4.

4. Conclusions and Recommendations

It appears water quality conditions have improved between October 2020 and October 2021, particularly at location WQ#3A (outlet weir location).

Even with a slightly downward trend of DO, there do not appear to be water quality concerns at this time.

The next tri-annual sampling event is planned for February 2022.

Please call if you have questions or need additional information.

Sincerely,

GHD

Connor Haydon
Environmental Engineer

Lori Coolidge, P.G.
Principal Geologist

Encl: Attachments: Table 1
Figure 1
Trend Graphs
Laboratory Analytical Reports
Surface Water Field Sheets
Laboratory Data Compliance Memo

Table

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #1 / WQL1																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	7.66	NS	6.1	5.83	3.5	6.2	4.89	2.90	5.7	4.96	6.83	7.2	4.2	3.9	6.5	5.4	6.0	6.0	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	406	353	387	369.3	405	413.1	348.2	407.3	354.6	312.7	387.3	348.4	369	689	300	292	358	304	
Dissolved oxygen (DO), field	mg/L	8.03	5.91	7.53	8.13	7.95	5.91	6.95	6.89	7.39	6.54	6.49	6.1	8.02	6.05	7.07	7.51	7.0	5.74	
Dissolved oxygen (DO), field	%	100.9*	79.3	89.4	88.5	101.6	79.6	83.0	87.6	98.9	96.0	80.9	78.1	94.5	77.0	87.1	90.6	93.1	72.3	
pH, field	s.u.	8.44	8.19	7.92	8.13	7.97	8.23	8.06	8.37	8.24	8.31	8.13	8.36	8.26	8.29	8.57	8.82	8.10	8.32	
Temperature, field	Deg C	27.08	30.8	24	19.5	28.0	31	24.3	27.7	30.6	21.1	26.6	28.1	23.44	29.1	26.6	25.0	29.91	27.4	
Turbidity, field	NTU	2.41	3.44	3.55	4.64	8.16	5.05	3.02	2.90	5.53	4.39	3.32	3.71	1.66	3.63	2.42	1.58	1.87	1.82	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.80	4.20	3.90	6.0	5.4	6.0	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.026	U	0.035	0.008 U	0.008 U	0.026	0.008 U	0.022	0.008 U	0.008 U	0.017	0.008 U	0.008 U	0.008 U	0.008 U	0.008	0.008 U	
TAN criteria calculation	mg/L	0.24	0.29	0.67	0.66	0.48	0.27	0.52	0.26	0.27	0.45	0.42	0.26	0.42	0.28	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.626	0.878	0.911	0.968	0.611	0.580	0.629	0.551	0.565	0.632	0.619	0.588	0.632	0.591	0.05 U	0.480	0.474	0.531	
Total nitrogen	mg/L	0.626	0.878	0.911	0.974	0.816	0.592	0.629	0.565	0.574	0.639	0.619	0.588	0.639	0.591	0.05 U	0.480	0.474	0.531	
Nitrite/Nitrate	mg/L	U	U	U	0.006	0.005	0.012	0.004 U	0.014	0.009	0.007	0.006 U	0.006 U	0.007	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.074	0.071	0.030	0.012	0.027	0.038	0.026	0.014	0.017	0.014	0.024	0.026	0.028	0.051	0.0126	0.024	0.011	0.014	
Total phosphorus	mg/L	0.087	0.091	0.068	0.038	0.027	0.041	0.121	0.017	0.018	0.028	0.034	0.063	0.035	0.053	0.011	0.059	0.022	0.030	
Chlorophyll	mg/m3	5.91	7.32	7.86	11.1	8.42	9.27	5.25	10.1	10.1	6.92	3.72	7.81	3.71	3.96	5.76	3.55	7.44	7.06	
Total suspended solids (TSS)	mg/L	2.35	3.49	4.80	7.00	7.80	6.15	3.67	3.67	4.00	4.20	1.20	2.20	3.50	3.20	2.40	2.00	2.80	0.667	
Biochemical oxygen demand (total BOD5)	mg/L	0.706	U	U	1.06	1.40	1.05	1 U	1.16	2.72	1.85	1.24	1.03	1 U	1 U	1 U	1 U	1 U	1 U	

Sample Location/Sample ID:		WQ Location #2 / WQL2																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	7.43	NS	9.2	8.56	6	6.2	8.01	6.00	10.2	8.65	8.31	10.4	7.8	6.35	9.0	8.8	10.25	7.5	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	422	359	384	385.7	414	435.0	638.9	417.0	363.7	321.2	411.8	346.4	373	701	300	303	346	305	
Dissolved oxygen (DO), field	mg/L	7.67	5.55	7.12	8.05	7.87	6.21	6.58	6.95	7.52	9.90	6.88	6.27	8.12	5.86	4.64	7.04	7.09	8.64	
Dissolved oxygen (DO), field	%	97.4	74.0	84.7	87.6	101.8	82.9	77.7	88.0	100.2	110.0	85.9	81.0	96.2	77.2	51.1	86.9	93.7	99.9	
pH, field	s.u.	8.37	8.07	7.68	7.97	8.21	8.11	7.89	8.31	8.03	8.06	8.25	8.27	8.49	8.31	8.26	8.72	8.0	8.22	
Temperature, field	Deg C	27.62	30.4	24.1	19.5	28.7	30.5	23.7	27.5	30.4	20.5	26.7	28.5	23.9	30.1	27.1	25.5	29.87	27.4	
Turbidity, field	NTU	3.97	31.71	4.38	4.66	7.15	3.12	3.20	8.22	3.75	5.76	3.37	3.55	2.18	3.49	2.40	3.41	2.44	2.13	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.30	NS	5.5	6.5	7.0	7.0	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.019	U	0.071	0.008 U	0.008 U	0.036	0.008 U	0.008 U	0.008 U	0.027	0.008 U	0.008 U	0.008 U	0.009	0.008 U	0.017	0.008 U	
TAN criteria calculation	mg/L	0.26	0.36	0.90	0.84	0.32	0.34	0.71	0.30	0.38	0.69	0.34	0.30	0.28	0.25	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.745	1.15	0.888	1.04	0.507	0.641	0.710	0.675	0.613	0.693	0.606	0.605	0.403	0.556	0.500	0.450	0.469	0.542	
Total nitrogen	mg/L	0.745	1.15	0.900	1.04	0.514	0.645	0.710	0.690	0.618	0.698	0.606	0.605	0.403	0.556	0.500	0.450	0.469	0.542	
Nitrite/Nitrate	mg/L	U	U	0.012	U	0.007	0.004	0.004 U	0.015	0.005	0.006	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.077	0.070	0.064	0.015	0.028	0.050	0.025	0.015	0.020	0.008	0.002 U	0.055	0.035	0.053	0.0288	0.026	0.016	0.015	
Total phosphorus	mg/L	0.079	0.087	0.066	0.031	0.054	0.065	0.042	0.023	0.008 U	0.009	0.008 U	0.073	0.069	0.062	0.012	0.032	0.017	0.036	
Chlorophyll	mg/m3	6.59	7.28	8.08	11.7	7.76	7.13	5.42	8.35	9.06	8.80	5.28	9.11	4.34	5.11	6.13	2.04	5.95	7.37	
Total suspended solids (TSS)	mg/L	4.21	3.90	4.60	7.20	6.60	2.60	3.60	8.00	1.00	4.67	3.80	2.40	3.00	2.40	2.40	2.80	2.80	2.00	
Biochemical oxygen demand (total BOD5)	mg/L	0.778	U	U	1.33	1.13	1 U	1 U	1.36	1.89	1.10	1.40	1.50	1 U	1 U	1 U	1 U	1 U	1 U	

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #3A / WQL3A																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021
Field Parameters	Units																		
Total Water Depth	Feet	3.78	3.64	3.52	2.98	1.5	4.6	3.35	3.2	3.6	5.87	2.96	4.5	3	1.5	4.0	3.0	3.33	3.75
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	406	329	255	375.7	430	200.4	339	418.9	365.1	323	391.9	373.2	381	690	293	297	363	313
Dissolved oxygen (DO), field	mg/L	7.31	4.78	2.93	7.40	14.02	1.38	6.49	6.16	7.33	8.44	5.82	2.05	5.77	6.49	6.41	5.62	3.15	8.43
Dissolved oxygen (DO), field	%	91.8	62.9	34.3	81.5	198	17.42	76.4	78.2	97.9	94.3	72.7	25.7	68.5	85.4	80.5	70.2	39.0	98.9
pH, field	s.u.	8.44	8.0	6.99	7.96	9.32	6.91	7.97	8.15	8.13	7.53	8.21	7.34	7.93	8.44	8.38	8.49	7.16	7.97
Temperature, field	Deg C	27.0	29.7	23.2	20.1	33.7	27.3	23.5	27.6	30.5	20.8	26.7	26.8	23.77	29.3	27.0	25.4	26.24	27.6
Turbidity, field	NTU	7.64	78.77	3.48	5.42	86.9	2.99	3.05	3.94	3.63	4.20	2.20	2.79	1.31	3.49	2.76	4.13	1.77	2.70
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	4.0	3.0	3.33	NS
Wet Parameters		Units																	
Ammonia-N	mg/L	U	0.029	0.044	0.027	0.008 U	0.008 U	0.009	U	0.023	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009	0.008 U	0.035	0.008 U
TAN criteria calculation	mg/L	0.25	0.42	1.54	0.82	0.04	1.22	0.65	0.38	0.32	1.29	0.37	1.02	0.67	0.21	NS	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.581	0.949	1.11	1.06	3.73	0.642	0.634	0.645	0.621	0.949	0.598	0.635	0.451	0.510	0.216	0.526	0.546	0.565
Total nitrogen	mg/L	0.581	0.949	1.13	1.06	3.73	0.650	0.634	0.658	0.626	0.954	0.598	0.635	0.451	0.510	0.216	0.526	0.546	0.585
Nitrite/Nitrate	mg/L	U	U	0.021	U	0.008	0.008	0.004 U	0.013	0.005	0.006	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.073	0.012	0.051	0.012	0.018	0.029	0.031	0.016	0.020	0.025	0.014	0.060	0.043	0.048	0.0199	0.030	0.017	0.012
Total phosphorus	mg/L	0.088	0.026	0.052	0.033	0.090	0.039	0.048	0.024	0.008 U	0.019	0.018	0.066	0.069	0.064	0.012	0.046	0.021	0.017
Chlorophyll	mg/m3	5.76	8.71	10.1	10.4	249	10.1	4.83	7.85	10.6	8.15	4.60	7.88	3.79	5.10	5.52	4.00	7.06	7.99
Total suspended solids (TSS)	mg/L	7.06	6.42	5.11	7.20	95.0	3.80	4.00	3.60	6.00	4.33	2.60	2.40	1.50	4.80	2.40	4.20	2.00	3
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.11	10.6	1.39	1 U	1.12	1.66	1.19	2.32	1.27	1 U	1 U	1 U	1.30	1.32	1 U

Sample Location/Sample ID:		WQ Location #3B / WQL3B											WQL6	WQL6	WQL6	WQL6	WQL6	WQL6	WQL6
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021
Field Parameters	Units																		
Total Water Depth	Feet	3.78	4	3.52	2.98	2	4.6	6.94	3.2	3.6	5.87	3.50	12.5	17.6	15.5	10.5	14.4	12.3	10.5
Sample Depth	Feet	3	3	3	2.5	1.5	3	3.0	NS	3	3	3	3	3	3	1.5	3	3	3.0
Conductivity, field	umhos/cm	405	341	369	313.1	406	384.1	338.6	NS	354.5	322.4	391.3	340.8	362	688	290	295	365	305
Dissolved oxygen (DO), field	mg/L	7.32	6.22	6.82	6.58	8.46	5.59	5.87	NS	7.39	6.32	5.7	5.63	8.44	6.49	6.66	7.43	6.82	8.25
Dissolved oxygen (DO), field	%	91.1	82.8	81.2	67.9	109.3	74.0	68.8	NS	98.8	70.6	71.2	72.4	99.2	85.7	83.4	90.4	90.3	85.4
pH, field	s.u.	8.46	8.14	7.68	7.77	8.12	8.10	8.00	NS	8.18	8.08	8.22	8.16	8.5	8.51	8.63	8.74	7.59	8.25
Temperature, field	Deg C	26.55	30.3	24.1	16.9	28.6	30.0	23.3	NS	30.6	20.8	26.7	28.3	23.28	29.4	29.3	25.2	30.07	27.6
Turbidity, field	NTU	7.98	10.03	3.15	21.38	3.93	4.15	2.84	NS	26.26	7.10	2.17	4.85	1.48	2.83	2.13	1.75	2.19	1.79
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.80	8.00	7.20	7.0	7.5	6.4	NS
Wet Parameters		Units																	
Ammonia-N	mg/L	U	0.15	U	0.097	0.008 U	0.008 U	0.028	NS	0.015	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009	0.008 U	0.012	0.008 U
TAN criteria calculation	mg/L	0.24	0.32	0.90	1.29	0.37	0.35	0.63	NS	0.30	0.66	0.36	0.36	0.28	0.19	NS	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.736	0.880	1.04	2.90	0.462	0.715	0.731	NS	0.757	0.722	0.683	0.612	0.414	0.490	0.05 U	0.569	0.448	0.496
Total nitrogen	mg/L	0.744	0.880	1.05	2.90	0.472	0.715	0.731	NS	0.763	0.727	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448	0.496
Nitrite/Nitrate	mg/L	0.008	U	0.012	U	0.010	0.004 U	0.004 U	NS	0.006	0.006	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.088	0.064	0.029	0.012	0.029	0.226	0.272	NS	0.020	0.022	0.027	0.063	0.032	0.059	0.0155	0.026	0.002	0.014
Total phosphorus	mg/L	0.092	0.098	0.031	0.168	0.054	1.08	0.501	NS	0.013	0.033	0.029	0.067	0.035	0.064	0.016	0.055	0.023	0.038
Chlorophyll	mg/m3	5.99	7.05	7.57	64.5	5.44	9.14	3.94	NS	10.8	7.61	5.38	8.86	3.18	4.95	4.80	2.48	7.62	6.69
Total suspended solids (TSS)	mg/L	7.11	5.78	3.80	44.7	4.20	4.80	3.20	NS	26.0	3.33	6.20	2.60	1.25	3.20	2.60	1.80	1.20	3
Biochemical oxygen demand (total BOD5)	mg/L	0.556	U	U	6.47	1 U	1.45	1 U	NS	2.01	1 U	1.16	1.04	1 U	1 U	1.39	1 U	1 U	1 U

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #4 / WQL4																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021
Field Parameters	Units																		
Total Water Depth	Feet	12	7.77	14.88	7.91	5.0	10.7	7.9	6.90	11.8	10.7	14.20	15.4	13.55	12.55	13.0	8.01	7.2	7.0
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	403	340	373	361.8	405	404.8	342.0	399.7	342	310.3	382.1	337.0	363	682	286	291	349	302
Dissolved oxygen (DO), field	mg/L	7.72	6.55	7.14	8.06	8.33	5.02	5.73	7.13	6.96	7.84	7.28	6.42	8.45	6.42	1.41	7.75	7.31	6.69
Dissolved oxygen (DO), field	%	96.4	88.3	85.6	88.3	106.6	66.8	68.2	89.2	92.9	87.8	90.2	82.8	99.4	83.4	17.0	93.5	94.2	89.1
pH, field	s.u.	8.58	8.31	7.59	8.10	7.65	8.16	8.08	8.39	8.34	7.99	7.97	8.38	8.58	8.57	8.66	8.80	6.62	8.21
Temperature, field	Deg C	26.71	31.1	24.5	19.8	28.1	30.3	24.1	26.8	30.5	20.9	26.3	28.5	23.49	29.9	27.5	24.8	29.95	27.6
Turbidity, field	NTU	1.87	2.04	4.44	3.02	3.11	1.81	2.48	3.38	3.56	4.10	2.72	2.58	1.04	2.48	1.85	2.28	1.76	3.19
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.50	8.50	7.00	6.5	8.01	7.2	NS
Wet Parameters	Units																		
Ammonia-N	mg/L	U	0.023 I	U	0.012 I	0.008 U	0.008 U	0.026 I	0.008 U	0.014 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.025 I	0.008 U
TAN criteria calculation	mg/L	0.20	0.23	0.96	0.68	0.72	0.31	0.53	0.27	0.23	0.74	0.54	0.25	0.24	0.16	NS	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.868	0.887	0.780	0.976	0.518	0.570	0.612	0.610	0.640	0.885	0.615	0.126 I	0.371	0.633	0.05 U	0.538	0.469	0.555
Total nitrogen	mg/L	0.868	0.887	0.808	0.976	0.524	0.570	0.612	0.623	0.645	0.885	0.615	0.126	0.371	0.633	0.05 U	0.538	0.469	0.555
Nitrite/Nitrate	mg/L	U	U	0.028	U	0.006 I	0.004 U	0.004 U	0.013 I	0.005 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.094	0.017	0.024	0.017	0.030	0.044	0.027	0.019	0.017	0.022	0.026	0.065	0.042	0.0180	0.021	0.012	0.012	0.016
Total phosphorus	mg/L	0.101	0.021 I	0.027 I	0.038	0.048	0.067	0.038	0.030 I	0.044	0.043	0.038	0.070	0.064	0.064	0.014 I	0.043	0.032	0.043
Chlorophyll	mg/m3	4.92	7.11	7.78	9.09	3.94	9.31	4.62	8.66	10.5	8.43	3.43	7.38	2.75	3.78	5.05	1.74	5.39	7.27
Total suspended solids (TSS)	mg/L	2.33	2.84	3.60	5.20	3.26	2.60	1.60 I	2.00 I	5.50	2.33	3.40	3.20	1.25 I	3.40	1.80 I	0.570 U	3.60	2.00 I
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.09 I	1 U	1 U	1 U	1.16 I	1.47 I	1 U	1 U	1.07 I	1 U	1 U	1.51 I	1 U	1 U	1 U

Sample Location/Sample ID:		WQ Location #5 / WQL5																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021
Field Parameters	Units																		
Total Water Depth	Feet	NS	2	2.03	1.42	2.5	4.32	2.84	S	2.7	1.10	1.50	1.98	1.72	<1	2.0	2.5	NM	4.0
Sample Depth	Feet	NS	1.5	1.5	0.5	1.5	1.5	1.5	S	1.5	0.5	0.75	1.0	1	<1	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	NS	411	515	462.0	464	478.4	447.9	464.1	405.1	427.2	475.8	465.0	480	802	373	409	82.9	423
Dissolved oxygen (DO), field	mg/L	NS	4.84	6.22	6.88	8.50	8.03	4.21	5.47	6.09	4.21	5.00	3.20	7.6	5.18	7.65	3.06	6.07	4.69
Dissolved oxygen (DO), field	%	NS	64.7	77.2	72.2	111.1	109.1	49.6	68.2	81.2	46.1	61.0	41.3	89.3	69.0	96.5	37.5	80.6	60.1
pH, field	s.u.	NS	7.83	7.77	7.65	7.77	8.10	7.58	7.61	7.80	6.38	6.44	7.99	8.35	8.28	8.18	8.04	8.12	8.01
Temperature, field	Deg C	NS	30.6	26.4	17.7	29.3	31.5	23.6	26.6	30.4	19.8	25.4	28.4	23.42	30.3	27.4	25.3	30.19	27.9
Turbidity, field	NTU	NS	2.08	3.62	3.60	5.77	4.65	1.99	4.93	3.40	4.18	4.98	4.71	2.45	5.74	2.96	2.27	4.05	17.12
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	NS	NS	NS	NS
Wet Parameters	Units																		
Ammonia-N	mg/L	NS	0.033	U	0.008 I	0.008 U	0.008 U	0.034	0.008 U	0.010 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.023 I	0.008 U	0.008 U
TAN criteria calculation	mg/L	NS	0.49	0.70	1.40	0.58	0.32	1.03	0.82	0.52	2.19	1.51	0.46	0.36	0.26	NS	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	NS	0.845	0.796	0.962	0.754	0.766	0.838	1.11	0.857	0.944	0.902	0.807	0.688	1.08	0.137 I	0.755	0.720	0.668
Total nitrogen	mg/L	NS	0.845	0.794	0.962	0.762	0.760	0.854	1.13	0.863	0.957	0.902	0.807	0.688	1.08	0.137	0.755	0.720	0.668
Nitrite/Nitrate	mg/L	NS	U	0.008 I	U	0.008 I	0.004 I	0.016	0.016	0.006 I	0.013 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	NS	0.022	0.042	0.017	0.027	0.019	0.022	0.016	0.015	0.019	0.023	0.050	0.038	0.055	0.075	0.029	0.014	0.008
Total phosphorus	mg/L	NS	0.065	0.042	0.036	0.035	0.067	0.046	0.027 I	0.025 I	0.024 I	0.028 I	0.081	0.049	0.102	0.084	0.067	0.035	0.027 I
Chlorophyll	mg/m3	NS	15.1	12.5	13.9	16.0	25.0	17.3	27.6	19.8	15.4	23.4	15.7	12.6	30.4	22.7	4.93	22.9	16.5
Total suspended solids (TSS)	mg/L	NS	4.10	4.80	5.00	8.11	11.0	0.570 U	6.20	4.00	3.00	7.60	2.40	3.25	9.00	4.20	3.00	5.40	2.33
Biochemical oxygen demand (total BOD5)	mg/L	NS	1.31 I	1.56 I	1.36 I	2.41 I	2.14 I	1.64 I	3.38 I	1.15 I	1.38 I	3.39 I	1.54 I	1.32 I	3.01 I	1.73 I	1 U	1.55 I	1 U

Notes:
 S - Sample collected from edge of lake
 U - Not detected at the associated reporting limit
 * - DO values at or above 100% are possible super-saturation conditions due to high water temperatures and/or high volume of algae.
 NS - Not sampled during noted event
 I - Reported value is between method detection limit and the practical quantitation limit

Figure



SITE:
Water Quality Sampling Report
 - February 2020
 Lakes 3 and 6 - Miramar Lakes
 Fort Myers, Lee County,
 Florida

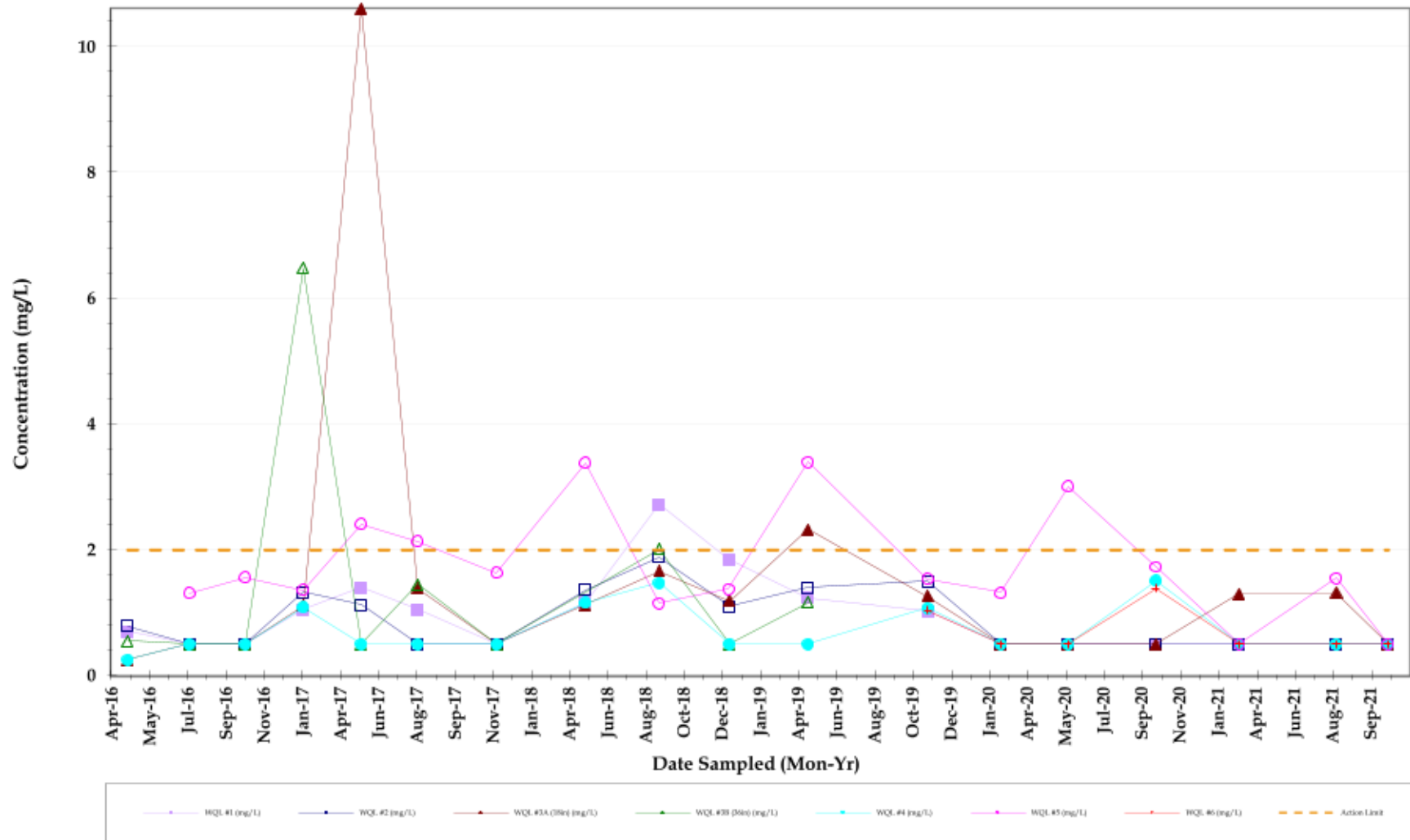


PROJECT #:	11147356
DATE:	Feb 2020
CAD FILE:	

DESIGNED:	JR
DRAWN:	JR
CHECKED:	

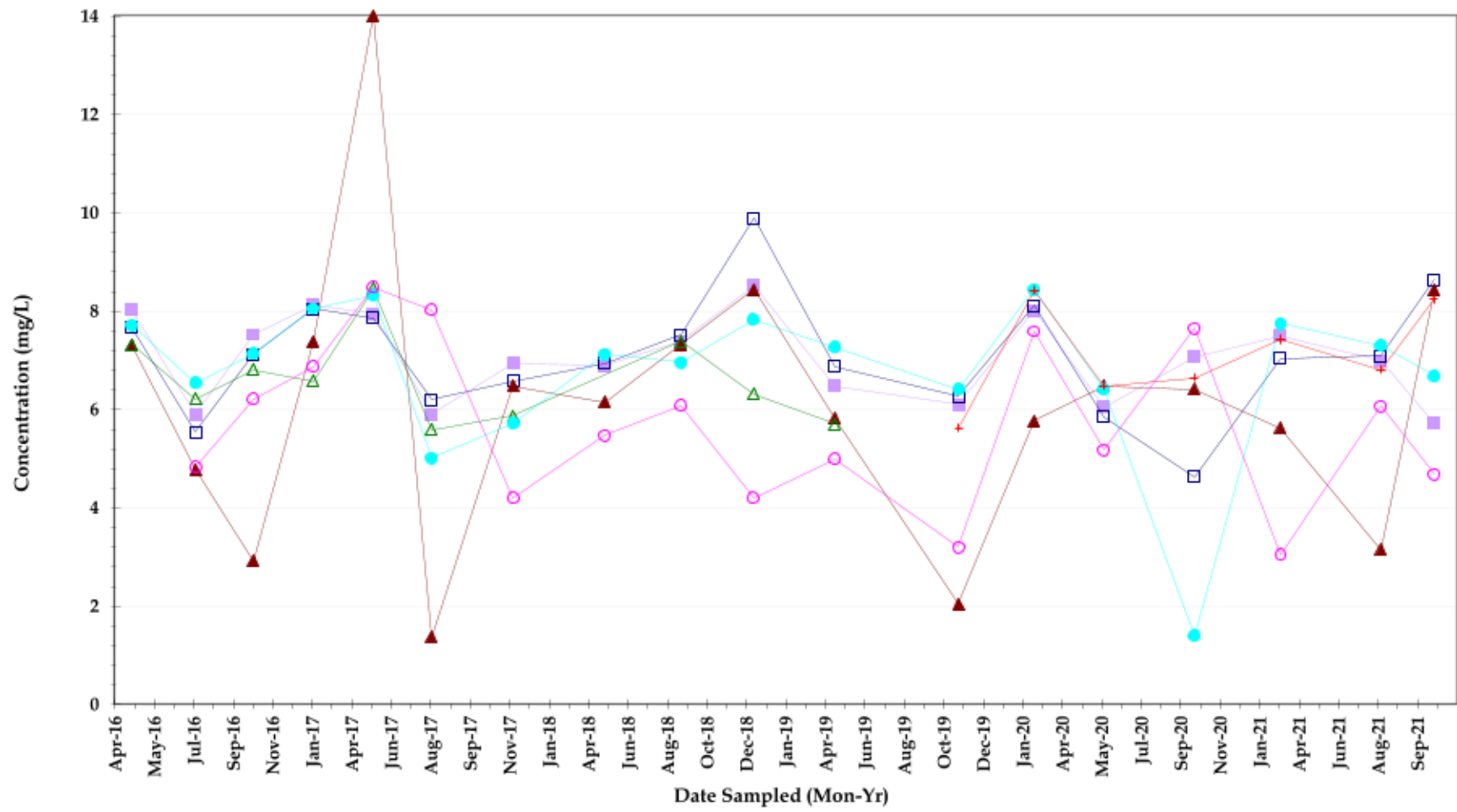
SHEET TITLE:	
Location Map	
FIGURE:	1

Trend Graphs



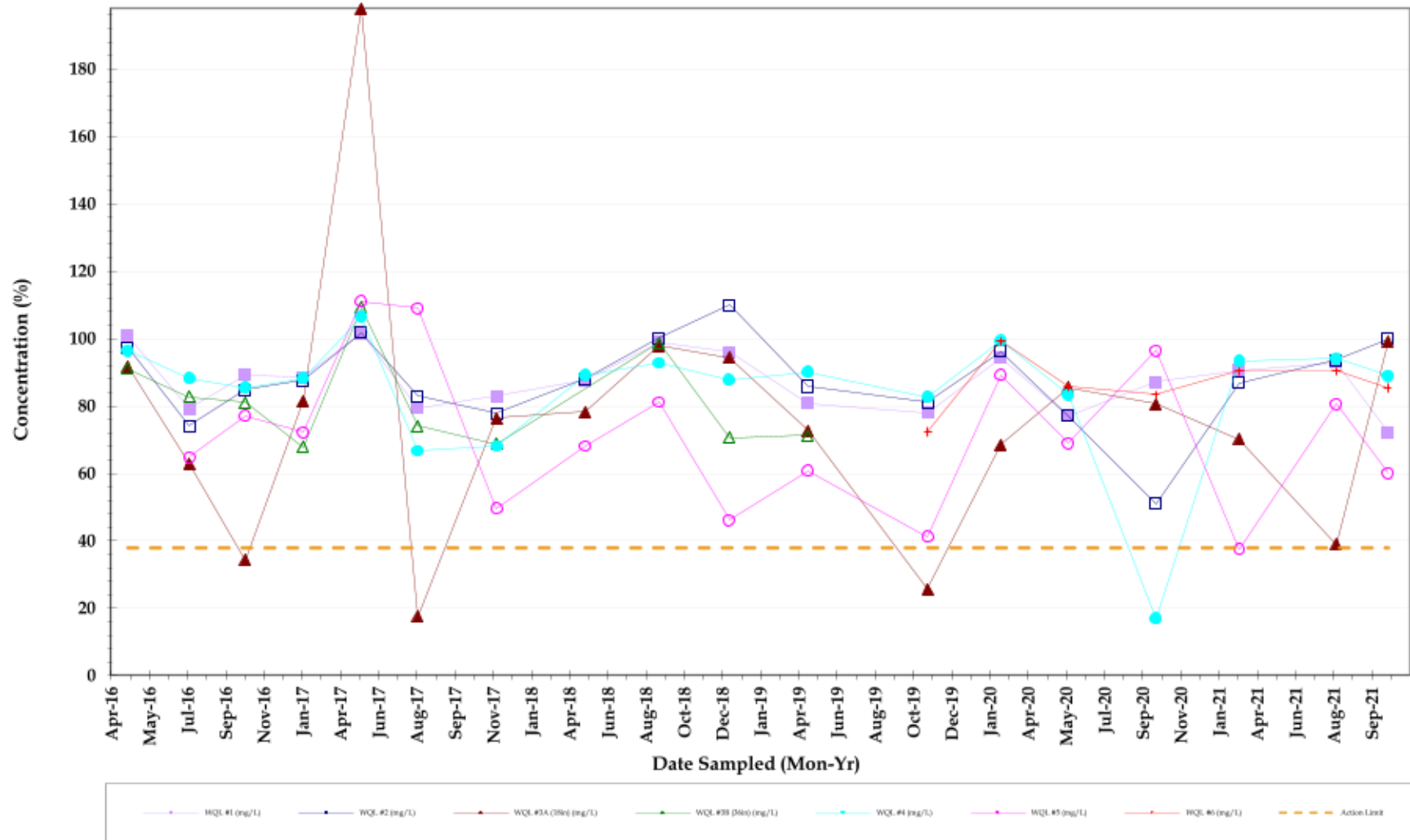
Biochemical Oxygen Demand





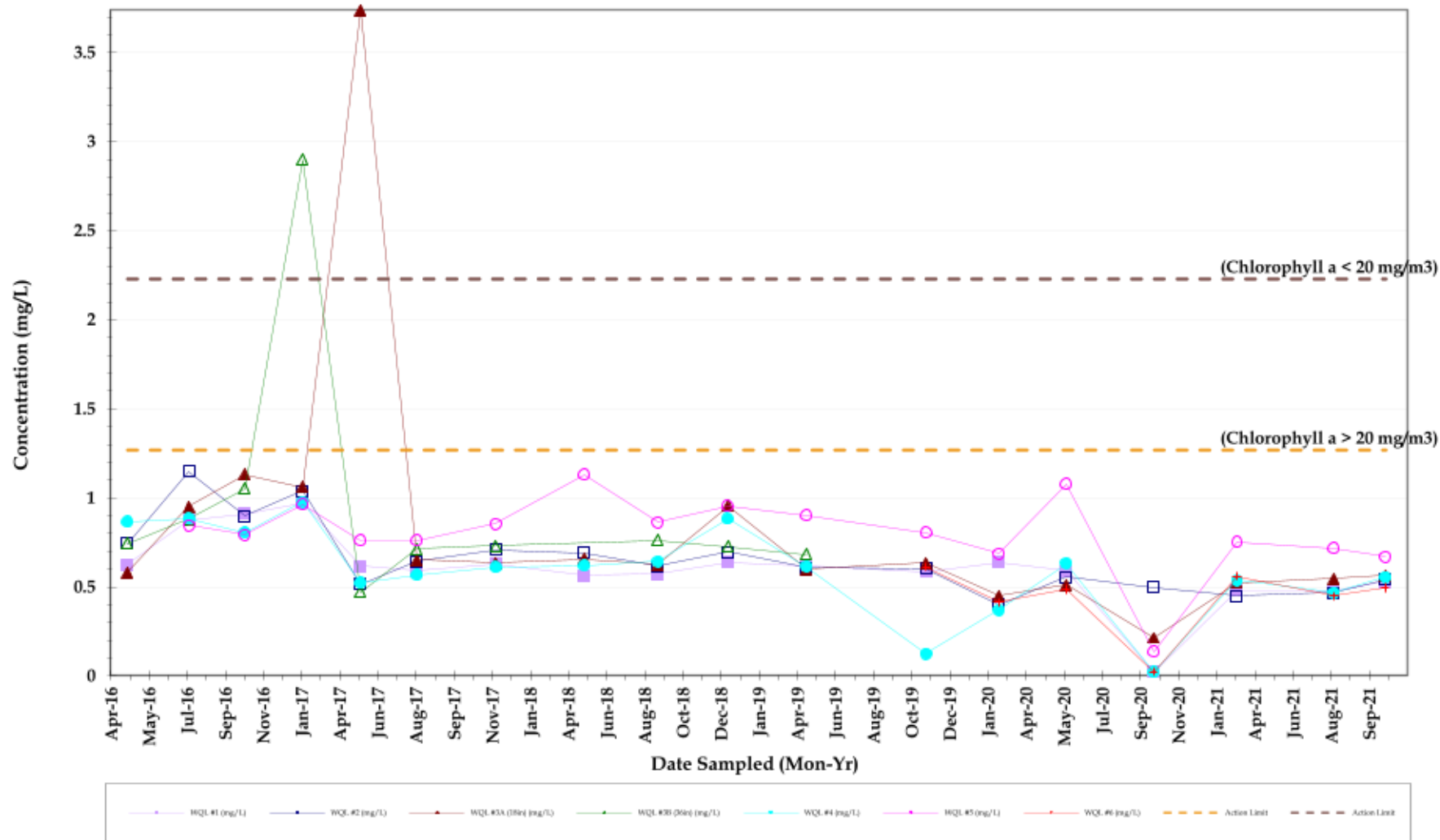
Dissolved Oxygen (mg/L)

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



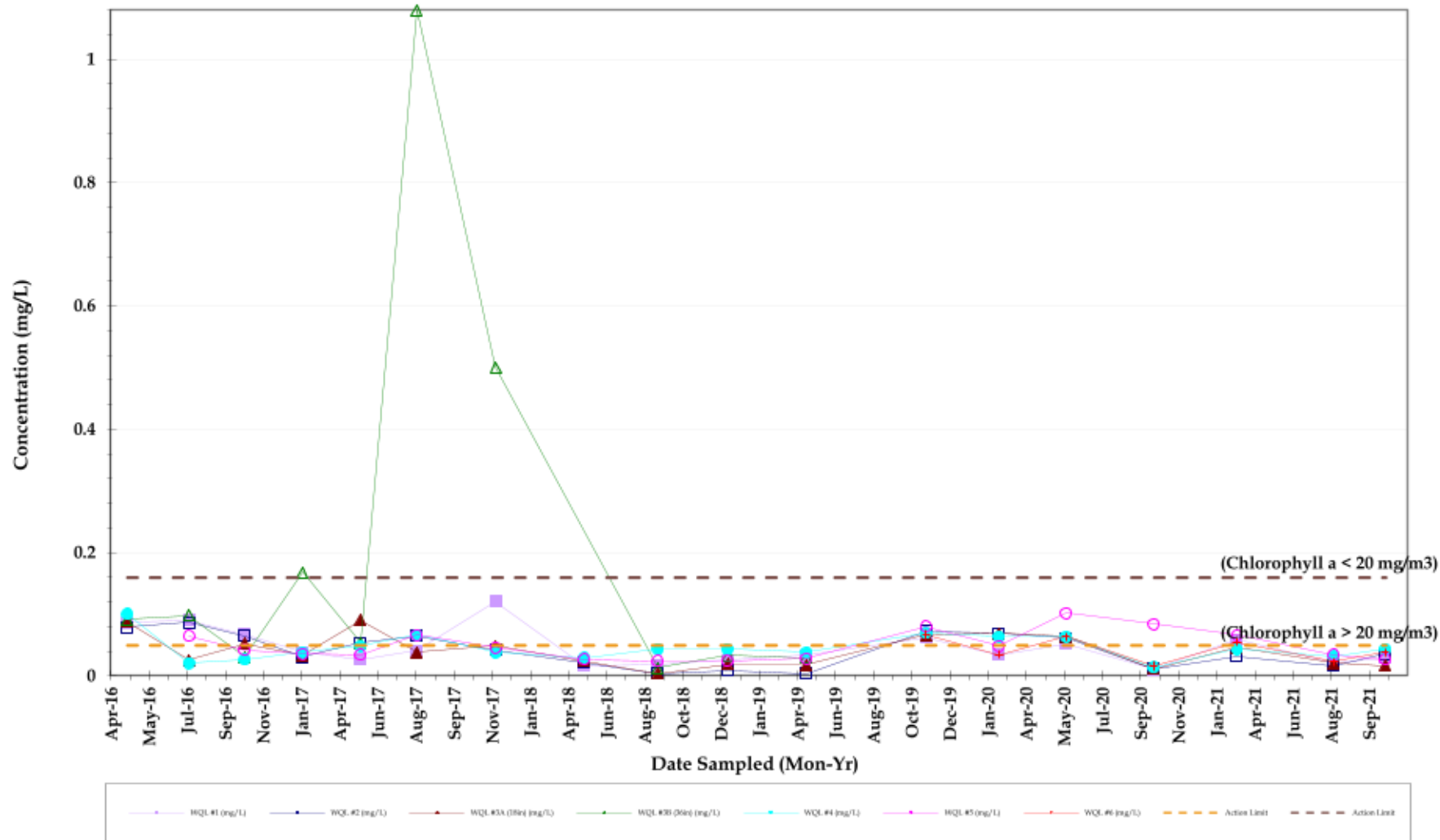
Dissolved Oxygen (%)





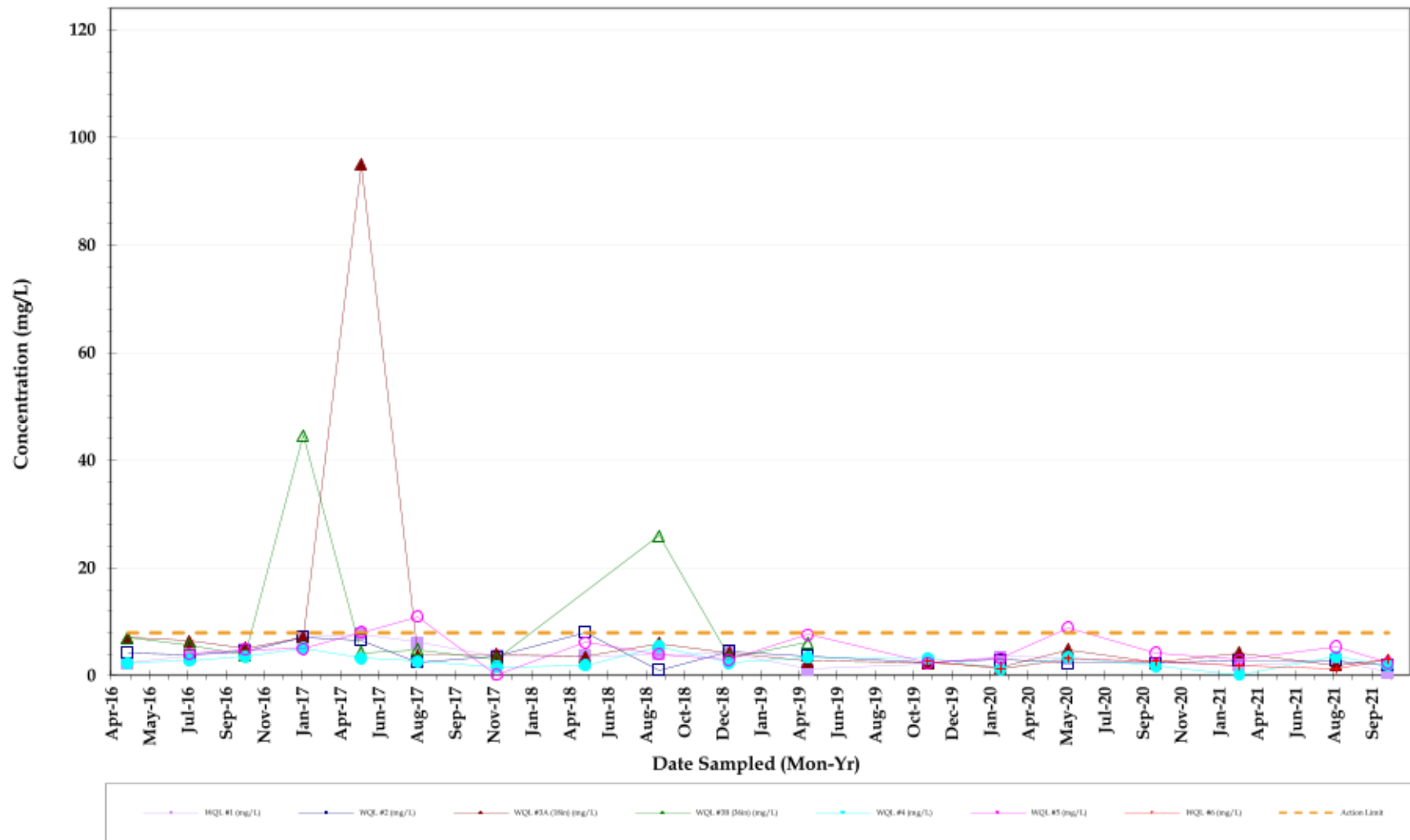
Total Nitrogen

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



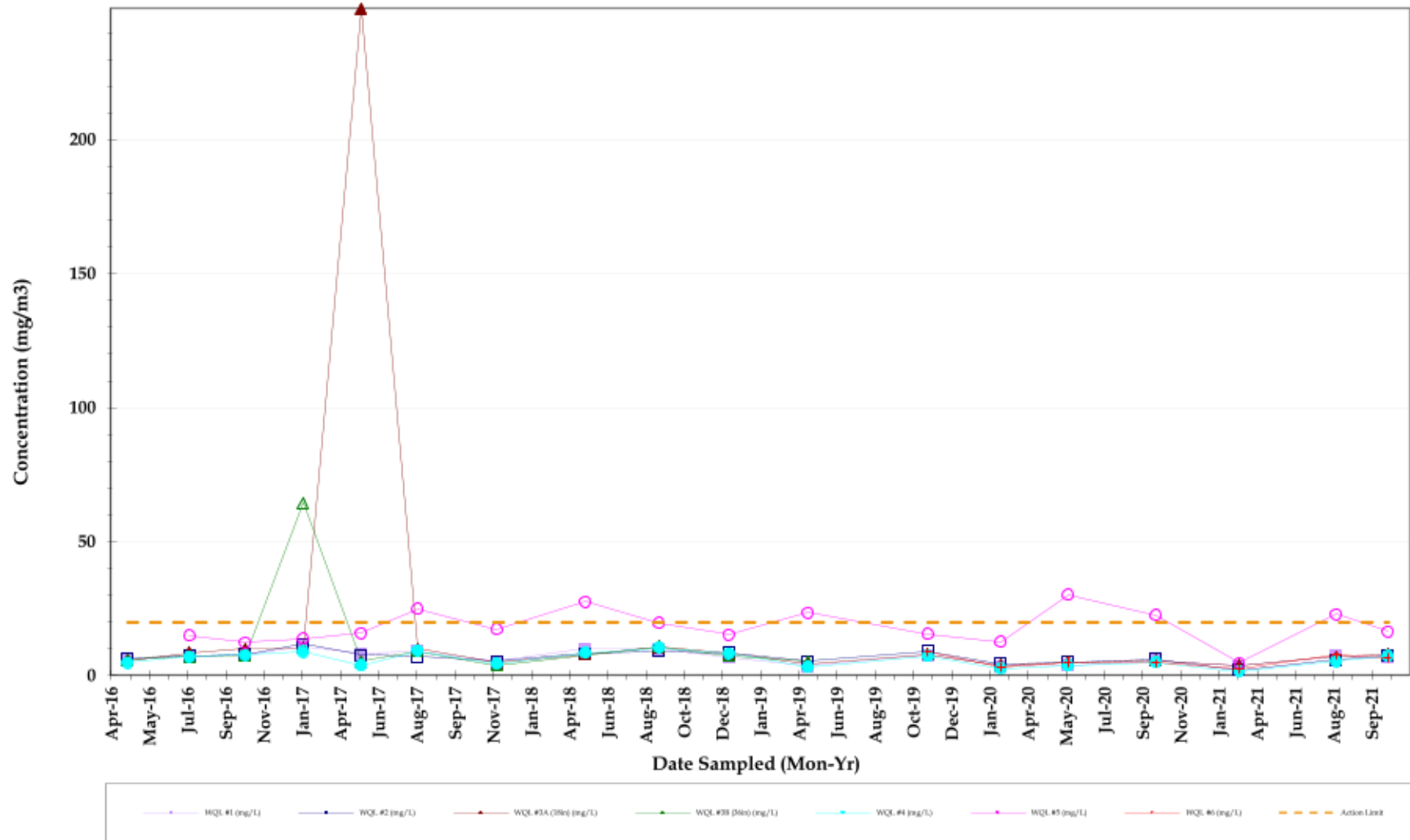
Total Phosphorus

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



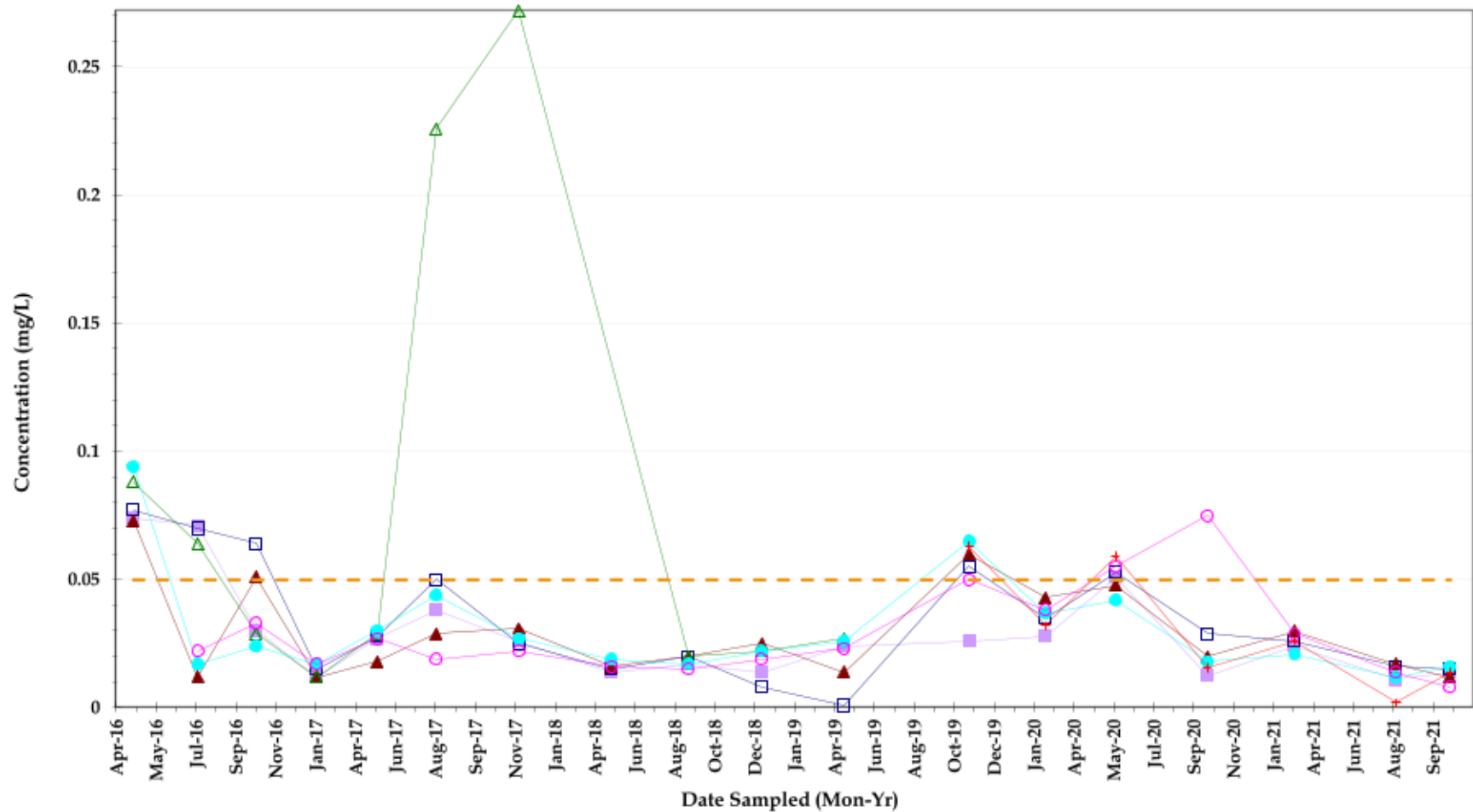
Total Suspended Solids





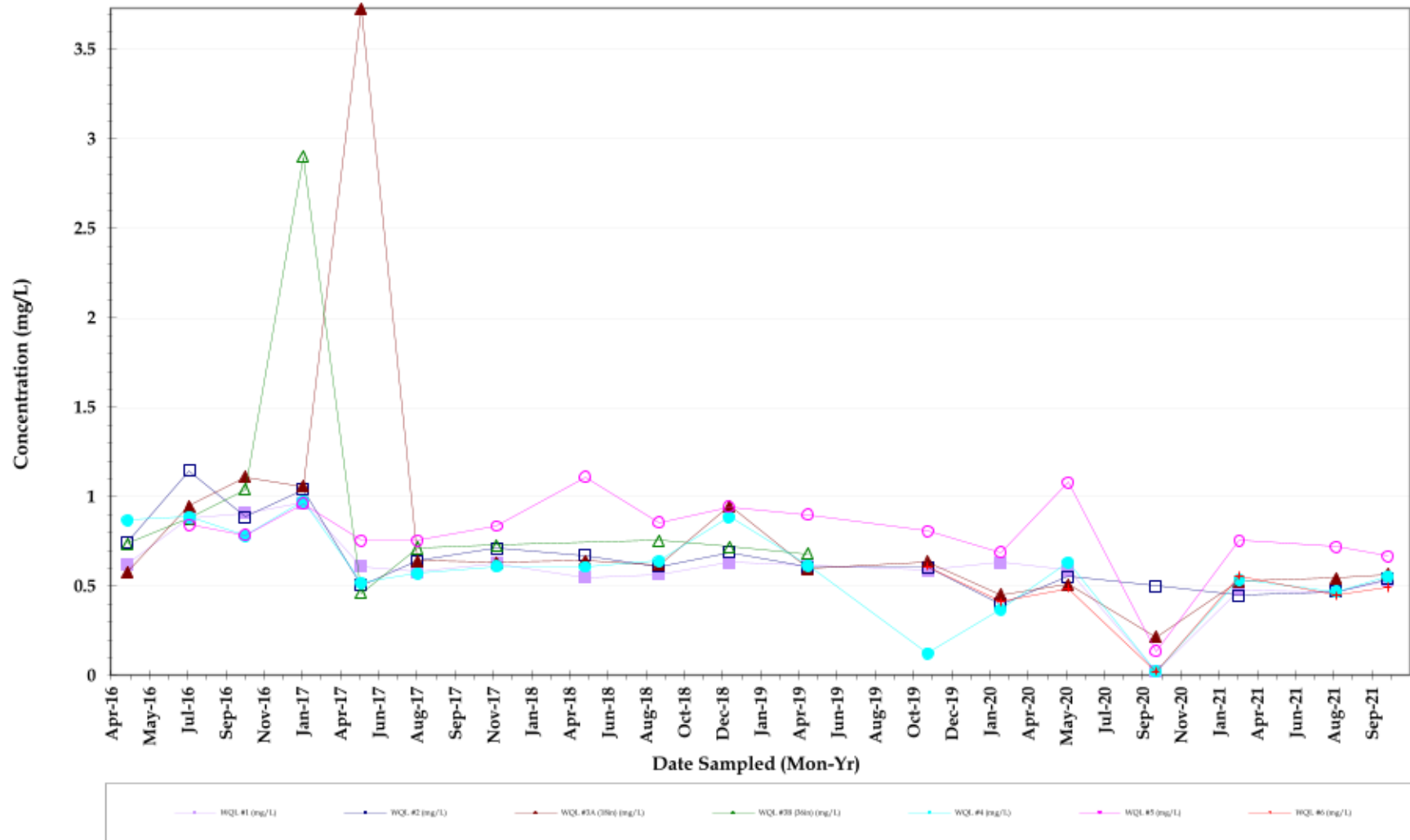
Chlorophyll a

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



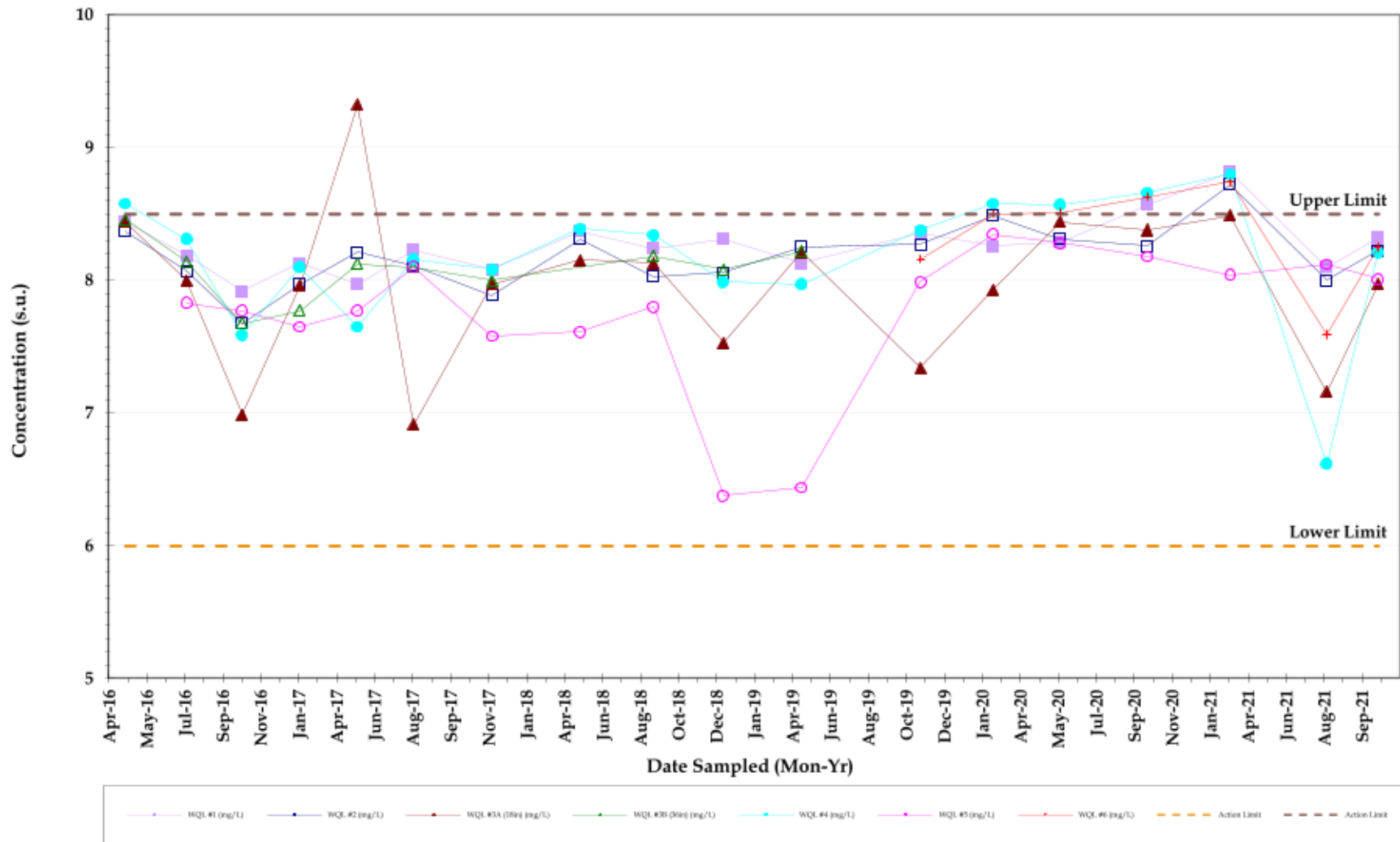
Orthophosphate

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



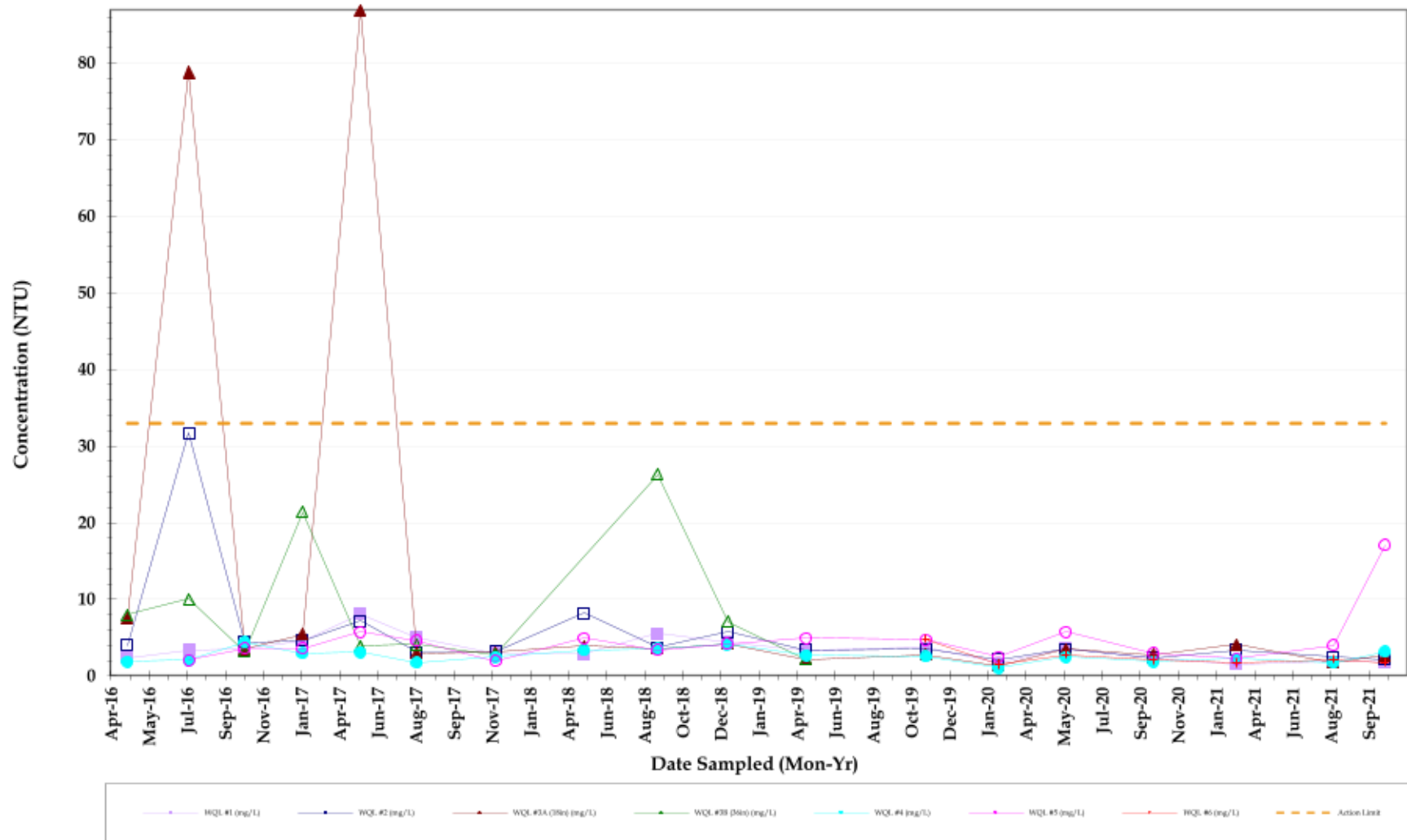
Total kjeldahl nitrogen (TKN)





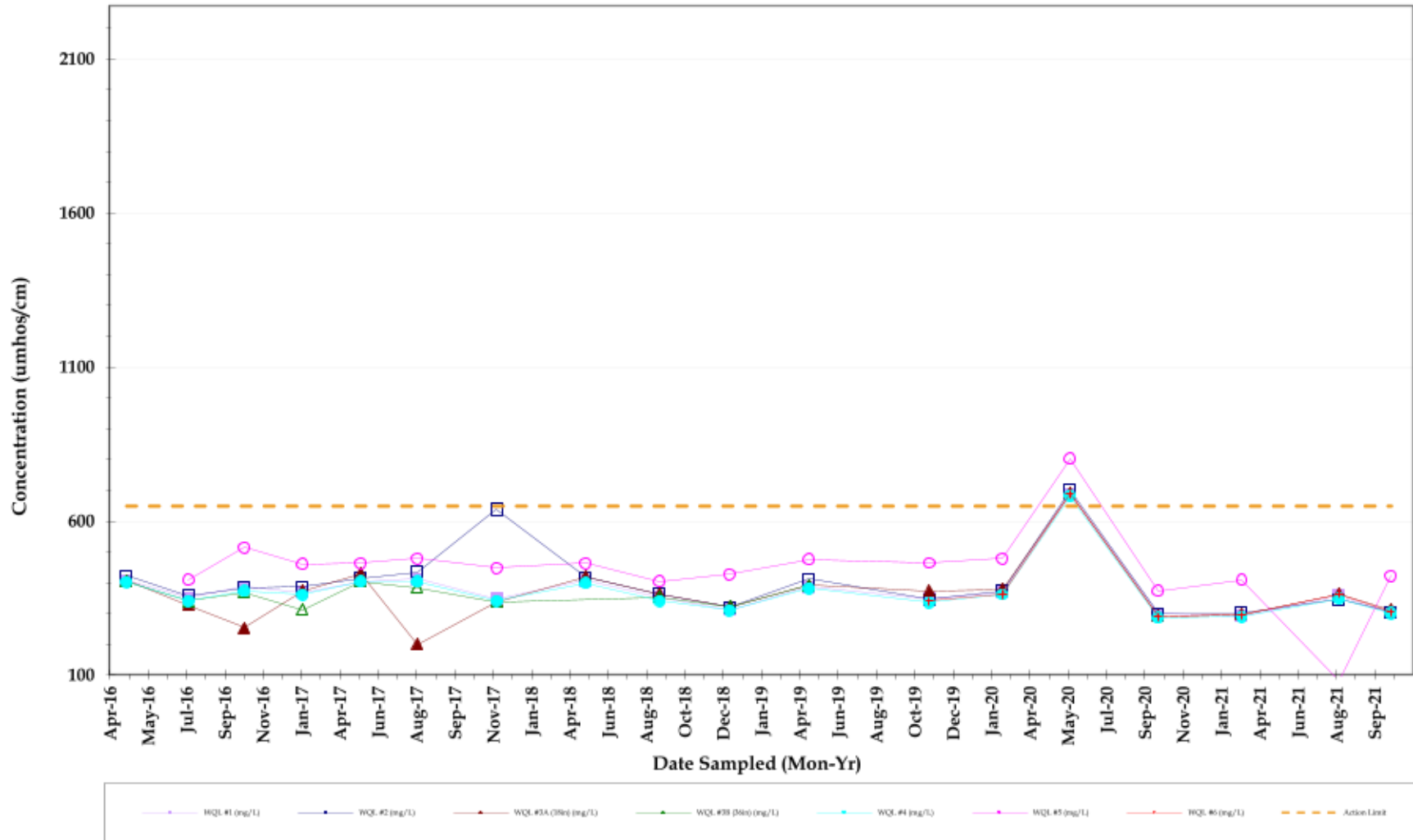
pH, Field

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



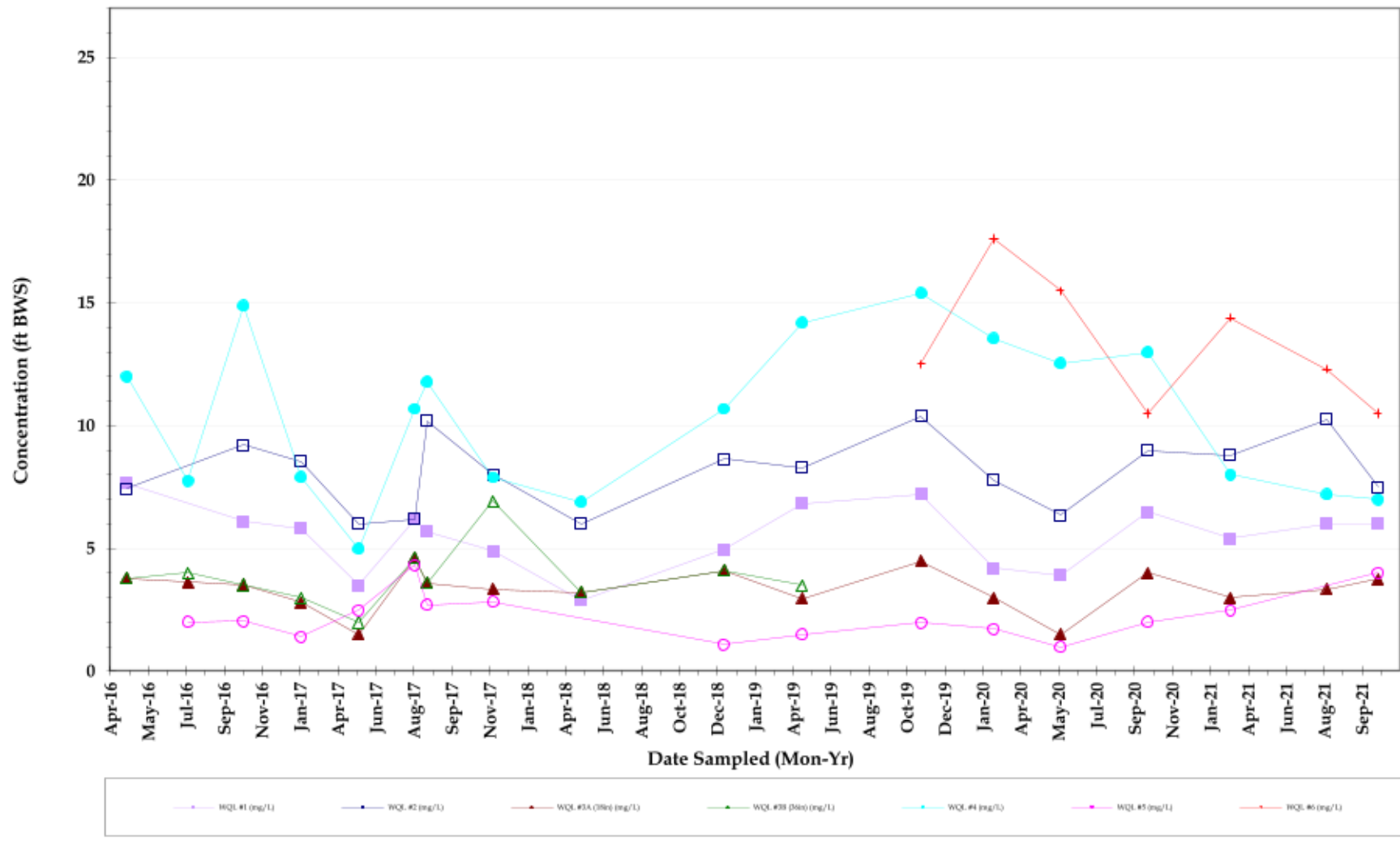
Turbidity

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



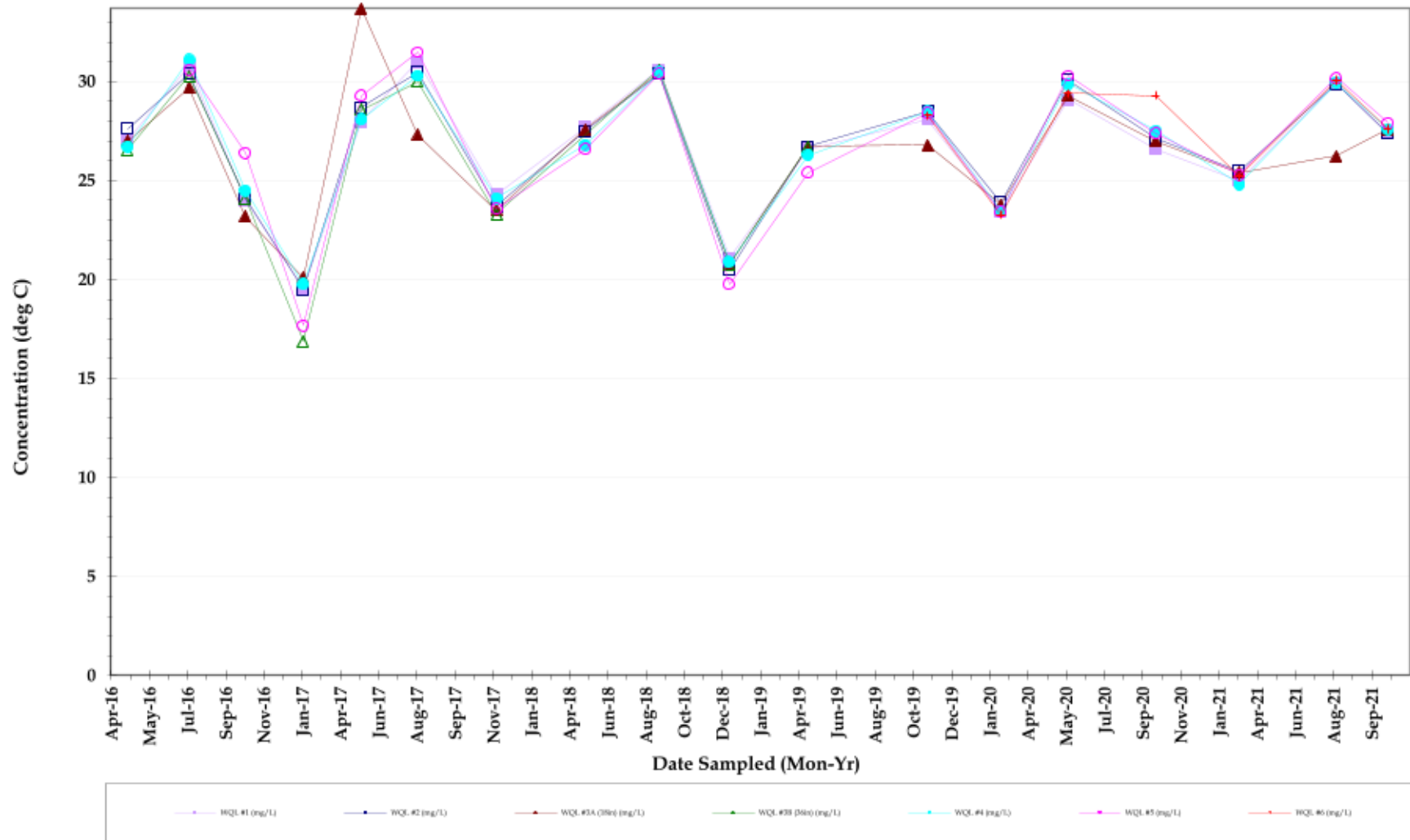
Conductivity





Water Depth

Miromar Lakes
 Water Quality Surface Water Sample results
 OCTOBER 2021



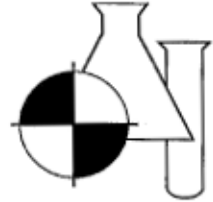
Temperature, sample



Laboratory Analytical Report

BENCHMARK

EnviroAnalytical Inc.



NELAC Certification #E84167

ANALYTICAL TEST REPORT

THESE RESULTS MEET NELAC STANDARDS

Submission Number : 21101507

G H D Services, Inc.
2675 Winkler Ave., Ste.180
Fort Myers, FL 33901

Project Name : MIROMAR LAKES WQM QTLY

Project #: 11225022-00

Date Received : 10/26/2021

Time Received : 1525

Submission Number: 21101507
Sample Number: 001
Sample Description: WQL #1

Sample Date: 10/26/2021
Sample Time: 0926
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:38	CW
TOTAL KJELDAHL NITROGEN	0.531	MG/L	0.05	0.20	351.2	11/08/2021 15:17	HR
ORTHO PHOSPHORUS AS P	0.014	MG/L	0.002	0.008	365.3	10/26/2021 18:05	KA
TOTAL PHOSPHORUS AS P	0.030 I	MG/L	0.008	0.032	365.3	11/03/2021 14:07	KA
CHLOROPHYLL A	7.06	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN
TOTAL SUSPENDED SOLIDS	0.667 I	MG/L	0.570	2.280	SM2540D	10/27/2021 13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021 10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021 13:04	CW
TOTAL NITROGEN	0.531	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021 15:17	HR/CW

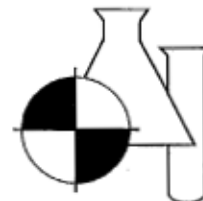
Submission Number: 21101507
Sample Number: 002
Sample Description: WQL #2

Sample Date: 10/26/2021
Sample Time: 0916
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:40	CW
TOTAL KJELDAHL NITROGEN	0.542	MG/L	0.05	0.20	351.2	11/08/2021 15:19	HR
ORTHO PHOSPHORUS AS P	0.015	MG/L	0.002	0.008	365.3	10/26/2021 18:06	KA
TOTAL PHOSPHORUS AS P	0.036	MG/L	0.008	0.032	365.3	11/03/2021 13:41	KA
CHLOROPHYLL A	7.37	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN
TOTAL SUSPENDED SOLIDS	2.00 I	MG/L	0.570	2.280	SM2540D	10/27/2021 13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021 10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021 13:04	CW
TOTAL NITROGEN	0.542	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021 15:19	HR/CW

BENCHMARK

EnviroAnalytical Inc.



NELAC Certification #E84167

Submission Number: 21101507
Sample Number: 003
Sample Description: WQL #3A

Sample Date: 10/26/2021
Sample Time: 0900
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:42	CW
TOTAL KJELDAHL NITROGEN	0.565	MG/L	0.05	0.20	351.2	11/08/2021 15:20	HR
ORTHO PHOSPHORUS AS P	0.012	MG/L	0.002	0.008	365.3	10/26/2021 18:09	KA
TOTAL PHOSPHORUS AS P	0.017 I	MG/L	0.008	0.032	365.3	11/03/2021 13:42	KA
CHLOROPHYLL A	7.99	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN
TOTAL SUSPENDED SOLIDS	3.00	MG/L	0.570	2.280	SM2540D	10/27/2021 13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021 10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021 13:05	CW
TOTAL NITROGEN	0.565	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021 15:20	HR/CW

Submission Number: 21101507
Sample Number: 004
Sample Description: WQL #4

Sample Date: 10/26/2021
Sample Time: 0830
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:44	CW
TOTAL KJELDAHL NITROGEN	0.555	MG/L	0.05	0.20	351.2	11/08/2021 15:21	HR
ORTHO PHOSPHORUS AS P	0.016	MG/L	0.002	0.008	365.3	10/26/2021 18:10	KA
TOTAL PHOSPHORUS AS P	0.043	MG/L	0.008	0.032	365.3	11/03/2021 14:08	KA
CHLOROPHYLL A	7.27	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN
TOTAL SUSPENDED SOLIDS	2.00 I	MG/L	0.570	2.280	SM2540D	10/27/2021 13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021 10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021 13:06	CW
TOTAL NITROGEN	0.555	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021 15:21	HR/CW

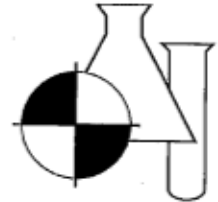
Submission Number: 21101507
Sample Number: 005
Sample Description: WQL #5

Sample Date: 10/26/2021
Sample Time: 1015
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:46	CW
TOTAL KJELDAHL NITROGEN	0.668	MG/L	0.05	0.20	351.2	11/08/2021 15:24	HR
ORTHO PHOSPHORUS AS P	0.008	MG/L	0.002	0.008	365.3	10/26/2021 18:12	KA
TOTAL PHOSPHORUS AS P	0.027 I	MG/L	0.008	0.032	365.3	11/03/2021 13:44	KA
CHLOROPHYLL A	16.5	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN

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NELAC Certification #E84167

TOTAL SUSPENDED SOLIDS	2.33	MG/L	0.570	2.280	SM2540D	10/27/2021	13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021	10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021	13:08	CW
TOTAL NITROGEN	0.668	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021	15:24	HR/CW

Submission Number: 21101507

Sample Date: 10/26/2021

Sample Number: 006

Sample Time: 0847

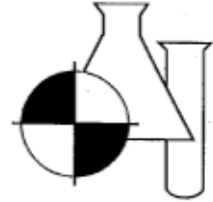
Sample Description: WQL #6

Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	10/27/2021 12:48	CW
TOTAL KJELDAHL NITROGEN	0.496	MG/L	0.05	0.20	351.2	11/08/2021 14:42	HR
ORTHO PHOSPHORUS AS P	0.014	MG/L	0.002	0.008	365.3	10/26/2021 18:14	KA
TOTAL PHOSPHORUS AS P	0.038	MG/L	0.008	0.032	365.3	11/03/2021 13:45	KA
CHLOROPHYLL A	6.89	MG/M3	0.25	1.00	445.0	11/03/2021 13:22	PN
TOTAL SUSPENDED SOLIDS	3.00	MG/L	0.570	2.280	SM2540D	10/27/2021 13:20	PG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/27/2021 10:31	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEAS EASY	10/27/2021 13:08	CW
TOTAL NITROGEN	0.496	MG/L	0.05	0.20	SYSTEAS+351	11/08/2021 14:42	HR/CW

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EnviroAnalytical Inc.



NELAC Certification #E84167


Dale D. Dixon / Laboratory Director

11/09/2021

Date

Tülay Tanrısever - Technical Director/QC Officer

Kara Peterson - QA Officer

DATA QUALIFIERS THAT MAY APPLY:

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the ideal range.
H = Value based on field kit determination. Results may not be accurate.
I = Reported value is between the laboratory MDL and the PQL.
J1 = Estimated value. Surrogate recovery limits exceeded.
J2 = Estimated value. No quality control criteria exists for component.
J3 = Estimated value. Quality control criteria for precision or accuracy not met.
J4 = Estimated value. Sample matrix interference suspected.
J5 = Estimated value. Data questionable due to improper lab or field protocols.
K = Off-scale low. Value is known to be < the value reported.
L = Off-scale high. Value is known to be > the value reported.
N = Presumptive evidence of presence of material.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.

T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.

U = Analyte analyzed but not detected at the value indicated.

V = Analyte detected in sample and method blank. Results for this analyte in associated samples may be biased high. Standard, Duplicate and Spike values are within control limits. Reported data are usable.

Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.

Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.

I = Data deviate from historically established concentration ranges.

? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the presence or absence of the analyte cannot be determined from the data.

* = Not reported due to interference.

Oil & Grease - If client does not send sufficient sample quantity for spike evaluation surface water samples are supplied by the laboratory.

NOTES:

MBAS calculated as LAS; molecular weight = 340.

PQL = 4xMDL.

ND = Not detected at or above the adjusted reporting limit.

G1 = Accuracy standard does not meet method control limits, but does meet lab control limits that are in agreement with USEPA generated data. USEPA letter available upon request.

G2 = Accuracy standard exceeds acceptable control limits. Duplicate and spike values are within control limits. Reported data are usable.

COMMENTS:

Chlorophyll A lab filtered on 10/27/21 at 0846.

For questions or comments regarding these results, please contact us at (941) 723-9986.

Results relate only to the samples.

Benchmark EA South
 1001 Corporate Avenue, Suite 102
 North Port, FL 34289
 (941) 625-3137 / (800) 736-9986
 (941) 423-7336 fax
 Sample Temperature checked upon receipt at BEAS
 with Temperature Gun ID #7

Benchmark EA, Inc.
 1711 12th St. East
 Palmetto, FL 34221
 (941) 723-9986 / (800) 736-9986
 (941) 723-6061-fax
 Sample Temperature checked upon receipt at BEA with
 Temperature Gun ID #RAYL000570277

Client: GHD Services, Inc. (HSA ENG)
 2675 Winkler Ave. Suite 180
 Ft. Myers Fl 33901
 Erik Isern (239) 215-3914 Shannon Tucker 239-210-8653
 Email EDD Reports to: Andrew Wyatt (Andrew.Wyatt@ghd.com)
 Connor. Haydon @ GHD. com

Kit Shipped to client via UPS Standard in 1 large cooler

2020 PO# 34043123

Chain of Custody Form: Miromar Lakes WQM
 Project Number: 11225022-00

Profile: 840, QC Report

Laboratory Submission #: **21101507**

Station ID	Sample Type ¹	Sample Matrix ²	NO ₃ -NO ₂ (353.2) TKN (351.2) NH ₃ (350.1) TP (365.3) T-N (Calc.)				BOD5 (50452108)	Ortho-Phos (Laboratory Filtered) (365.3)	TSS (50425400)	Chlorophyll a (445.0)	Laboratory Submission #
			1:4 H ₂ SO ₄ pH < 2 ✓	Plain	Plain	Plain	Plain				
			1 x 1/2 Pint Plastic	1 x 1 Quart Plastic	1 x 1/2 Pint Plastic	1 x 1 Quart Plastic	1 x 500mL Opaque Plastic				
WQ Location 1	Grab	SW	Date/Time: 10/26/21 926						10/27 0846	1	
WQ Location 2	Grab	SW	Date/Time:							2	
WQ Location 3A	Grab	SW	Date/Time:							3	
WQ Location 4	Grab	SW	Date/Time:							4	
WQ Location 5	Grab	SW	Date/Time:							5	
WQ Location 6	Grab	SW	Date/Time:							6	

¹ "Sample Type" is used to indicate whether the sample was a grab (G) or whether it was a composite (C).
² "Sample Matrix" is used to indicate whether the sample is being discharged to drinking water (DW), groundwater (GW), surface water (SW), soil, sediment (SDMNT), or sludge (SLDGI).
³ "Container Type" is used to indicate whether the container is plastic (P) or glass (G).
⁴ Sample must be refrigerated or stored in wet ice after collection. The maximum temperature during storage should be 6°C (42.8°F).
 Under "Preservative," list any preservatives that were added to the sample container.

Instructions:
 1. Each bottle has a label identifying sample ID, preservative contained in the bottle, sample type, client ID, and parameters for analysis.
 2. The following information should be added to each bottle label after collection with permanent black ink: date and time of collection, sampler's name or initials, and any field number or ID.
 3. All bottles not containing preservative may be rinsed with appropriate sample prior to collection.
 4. The client is responsible for documentation of the sampling event. Please note special sampling events on the sample custody form.

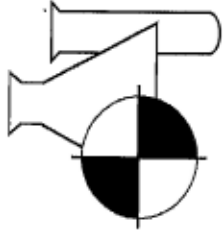
Laboratory Sample Acceptability: pH < 2 ✓
 BEAS Temperature:
 BEA Temperature: 2.4°C

1	Collector: J.M.K.	Date & Time: 10/26/21 12:00	2	Received By: [Signature]	Date & Time: 10/26/21 12:10
3	Relinquished By: [Signature]	Date & Time: 10/26/21 12:30	4	Received By: [Signature]	Date & Time: 10/26/21 12:30
5	Relinquished By: [Signature]	Date & Time: 10/26/21 1525	6	Received By: [Signature] BEA	Date & Time: 10/26/21 1525
7	Relinquished By:	Date & Time:	8	Received By:	Date & Time:

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QC REPORT



NELAC CERTIFICATION #E84167

Submission Number: 21101507
Project Name: MIROMAR LAKES WOM QTLY

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
21101243	002	AMMONIA NITROGEN	599035	10/27/2021 11:37	LR		-0.187	-0.223	0.00		
21101444	002	AMMONIA NITROGEN	599399	10/27/2021 12:30	LR		0.133	0.118	8.23		
	350.1	AMMONIA NITROGEN		10/27/2021 11:25	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 11:27	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 11:56	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 13:46	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 12:50	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 13:12	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		10/27/2021 13:39	PQL	0.03	0.030				100.0
21101243	001	AMMONIA NITROGEN	599034	10/27/2021 11:33	SPK	1.00	1.030			0.949	91.7
21101243	010	AMMONIA NITROGEN	599043	10/27/2021 13:41	SPK	1.00	1.000			0.756	75.6
21101452	001	AMMONIA NITROGEN	599409	10/27/2021 12:26	SPK	1.00	1.000			1.040	104.0
21101452	002	AMMONIA NITROGEN	599410	10/27/2021 12:54	SPK	1.00	1.000			1.090	109.0
	350.1	AMMONIA NITROGEN		10/27/2021 11:29	STD	1.00	0.915				91.5
	350.1	AMMONIA NITROGEN		10/27/2021 11:58	STD	1.00	0.920				92.0
	350.1	AMMONIA NITROGEN		10/27/2021 12:24	STD	1.00	0.920				92.0
	350.1	AMMONIA NITROGEN		10/27/2021 12:52	STD	1.00	0.906				90.6
	350.1	AMMONIA NITROGEN		10/27/2021 13:13	STD	1.00	0.932				93.2
	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 10:17	LCS	2.00	2.140				107.0
	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 10:38	LCS	2.00	2.040				102.0
	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 11:02	LCS	2.00	2.090				105.0
	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 11:30	LCS	2.00	2.100				105.0
	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 14:37	LCS	2.00	2.050				103.0

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:54	LCS	2.00	2.060				103.0
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:12	LCS	2.00	2.060				103.0
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:33	LCS	2.00	2.110				106.0
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:50	LCS	2.00	2.120				106.0
21101435 001	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 14:28	LR		1.130	1.130	0.00		
21101707 001	351.2	TOTAL KJELDAHL NITROGEN	599871	11/08/2021 15:01	LR		52.100	54.300	2.92		
21101707 002	351.2	TOTAL KJELDAHL NITROGEN	599872	11/08/2021 15:41	LR		52.700	55.000	3.02		
21110073 001	351.2	TOTAL KJELDAHL NITROGEN	600108	11/08/2021 10:03	LR		41.500	37.700	6.79		
21110319 001	351.2	TOTAL KJELDAHL NITROGEN	600591	11/08/2021 10:50	LR		69.200	67.300	1.97		
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 09:59	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 10:16	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 10:37	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 11:01	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 11:28	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:22	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:36	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:53	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:11	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:32	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 15:49	MB	0.00	0.000				
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 09:55	PQL	0.25	0.226				90.4
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:19	PQL	0.25	0.269				108.0
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 09:49	QCS	2.50	2.440				97.6
351.2		TOTAL KJELDAHL NITROGEN		11/08/2021 14:12	QCS	2.50	2.290				91.6
21101507 006	351.2	TOTAL KJELDAHL NITROGEN	599486	11/08/2021 14:42	SPK	2.00	2.500			2.640	107.0
21101516 01B	351.2	TOTAL KJELDAHL NITROGEN		11/08/2021 14:59	SPK	2.00	2.550			2.630	104.0
21101623 001	351.2	TOTAL KJELDAHL NITROGEN	599732	11/08/2021 14:24	SPK	2.00	3.190			3.120	96.5
21101650 001	351.2	TOTAL KJELDAHL NITROGEN	599768	11/08/2021 15:16	SPK	2.00	8.750			8.720	98.5
21101650 001	351.2	TOTAL KJELDAHL NITROGEN	599768	11/08/2021 15:23	SPK	2.00	9.200			9.280	104.0
21101115 001	351.2	TOTAL KJELDAHL NITROGEN	600190	11/08/2021 15:38	SPK	2.00	2.570			2.710	107.0
21110270 002	351.2	TOTAL KJELDAHL NITROGEN	600509	11/08/2021 10:24	SPK	2.00	2.920			2.710	89.5
21110322 001	351.2	TOTAL KJELDAHL NITROGEN	600596	11/08/2021 10:48	SPK	2.00	3.340			3.430	105.0
21110322 002	351.2	TOTAL KJELDAHL NITROGEN	600597	11/08/2021 11:06	SPK	2.00	3.370			3.440	104.0

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
21101435	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:37	LR		0.122	0.121	0.53		
21101435	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:37	LR		0.122	0.121	0.53		
21101435	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:37	LR		0.122	0.121	0.53		
21101507	005	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:12	LR		0.009	0.008	4.93		
21101507	005	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:12	LR		0.009	0.008	4.93		
21101507	005	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:12	LR		0.009	0.008	4.93		
21101507	005	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:12	LR		0.009	0.008	4.93		
21101392	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:35	PQL	0.01	0.008			0.375	83.0
21101392	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:38	SPK	0.20	0.337			0.375	119.0
21101392	001	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 17:38	SPK	0.20	0.337			0.375	119.0
21101507	006	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:14	SPK	0.20	0.215			0.192	88.8
21101507	006	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:14	SPK	0.20	0.215			0.192	88.8
21101507	006	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:14	SPK	0.20	0.215			0.192	88.8
21101507	006	365.3	ORTHO PHOSPHORUS AS P	10/26/2021 18:14	SPK	0.20	0.215			0.192	88.8
21101284	001	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 13:33	LR		0.592	0.599	0.80		
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 12:25	LR		0.313	0.313	0.00		
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 11:56	MB	0.00	0.000				
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 11:57	MB	0.00	0.000				
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 12:11	MB	0.00	0.000				
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 12:23	MB	0.00	0.000				
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 12:36	MB	0.00	0.000				
21101488	002	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 12:45	MB	0.00	0.000				
21101218	001	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 11:59	PQL	0.02	0.016			9.720	81.5
21101218	001	365.3	TOTAL PHOSPHORUS AS P	11/03/2021 14:37	SPK	0.10	9.760			9.720	62.5

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
21110024	002 365.3	TOTAL PHOSPHORUS AS P	600016	11/03/2021 12:02	SPK	0.20	0.295			0.277	91.1
21110047	002 365.3	TOTAL PHOSPHORUS AS P	600052	11/03/2021 14:09	SPK	0.20	0.409			0.446	119.0
	365.3	TOTAL PHOSPHORUS AS P		11/03/2021 11:58	STD	0.20	0.171				85.5
	365.3	TOTAL PHOSPHORUS AS P		11/03/2021 12:12	STD	0.20	0.218				109.0
	365.3	TOTAL PHOSPHORUS AS P		11/03/2021 12:24	STD	0.20	0.218				109.0
	365.3	TOTAL PHOSPHORUS AS P		11/03/2021 12:37	STD	0.20	0.220				110.0
	365.3	TOTAL PHOSPHORUS AS P		11/03/2021 12:46	STD	0.20	0.215				107.0
21101344	007 445.0	CHLOROPHYLL A	599234	11/03/2021 13:22	LR		6.515 6.200		3.52		
21101358	007 445.0	CHLOROPHYLL A	599258	11/03/2021 13:22	LR		16.302 17.030		3.09		
21101487	004 445.0	CHLOROPHYLL A	599455	11/03/2021 13:22	LR		7.057 6.880		1.75		
21101507	005 445.0	CHLOROPHYLL A	599485	11/03/2021 13:22	LR		16.465 14.700		8.01		
	445.0	CHLOROPHYLL A, CORRECTED		11/03/2021 13:22	MB	0.00	-0.130				
	445.0	CHLOROPHYLL A, CORRECTED		11/03/2021 13:22	STD	42.93	40.197				93.6
21101358	007 445.0	PHEOPHYTIN	599258	11/03/2021 13:22	LR		7.937 9.410		12.04		
21101460	001 SM2540D	TOTAL SUSPENDED SOLIDS	599418	10/27/2021 13:20	LR		826500.000 905300.000		6.43		
21101460	002 SM2540D	TOTAL SUSPENDED SOLIDS	599419	10/27/2021 13:20	LR		947600.000 1033400.000		6.13		
21101478	001 SM2540D	TOTAL SUSPENDED SOLIDS	599439	10/27/2021 13:20	LR		264.000 248.000		4.42		
21101482	001 SM2540D	TOTAL SUSPENDED SOLIDS	599446	10/27/2021 13:20	LR		180.000 196.000		6.02		
21101485	001 SM2540D	TOTAL SUSPENDED SOLIDS	599449	10/27/2021 13:20	LR		180.000 180.000		0.00		
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	MB	0.00	0.000				
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	MB	0.00	0.000				
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	MB	0.00	0.000				
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	MB	0.00	0.000				
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	STD	951.00	880.000				92.5
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	STD	951.00	912.000				95.9
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	STD	951.00	920.000				96.7
	SM2540D	TOTAL SUSPENDED SOLIDS		10/27/2021 13:20	STD	951.00	888.000				93.4
21101546	001 SM5210B	BIOCHEMICAL OXYGEN DEMAND	599555	10/27/2021 10:31	LR		2380.000 2430.000		1.47		
21101563	001 SM5210B	BIOCHEMICAL OXYGEN DEMAND	599578	10/27/2021 10:31	LR		923.000 1070.000		10.43		
21101605	004 SM5210B	BIOCHEMICAL OXYGEN DEMAND	599675	10/27/2021 10:31	LR		0.775 1.130		26.35		
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	MB	0.00	0.360				
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	258.250				130.4
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	233.250				117.8

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	219.250				110.7
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	199.750				100.9
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	229.750				116.0
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		10/27/2021 10:31	STD	198.00	186.750				94.3
21101452	001	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:38	LR		0.000 2.370		0.00		
21101452	002	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:48	LR		0.000 2.370		0.00		
21101452	001	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:38	LR		0.000 2.370		0.00		
21101452	002	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:48	LR		0.000 2.370		0.00		
21101489	002	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:58	LR		0.000 2.960		0.00		
21101489	002	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:58	LR		0.000 2.960		0.00		
21101507	006	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:09	LR		0.000 1.980		0.00		
21101507	006	SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:09	LR		0.000 1.980		0.00		
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:34	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:35	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:46	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:57	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:07	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:15	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:34	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:35	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:46	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:46	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:57	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:07	MB	0.00	0.000				
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 13:15	MB	0.00	0.000				
21101452	001	SYSTEMEAS NITRATE+NITRITE AS N	599409	10/27/2021 12:38	SPK	2.00	2.300			2.380	104.0
21101452	002	SYSTEMEAS NITRATE+NITRITE AS N	599410	10/27/2021 12:48	SPK	2.00	2.330			2.340	100.0
21101452	001	SYSTEMEAS NITRATE+NITRITE AS N	599409	10/27/2021 12:38	SPK	2.00	2.300			2.380	104.0
21101452	002	SYSTEMEAS NITRATE+NITRITE AS N	599410	10/27/2021 12:48	SPK	2.00	2.330			2.340	100.0
21101489	002	SYSTEMEAS NITRATE+NITRITE AS N	599462	10/27/2021 12:58	SPK	2.00	2.960			2.970	101.0
21101489	002	SYSTEMEAS NITRATE+NITRITE AS N	599462	10/27/2021 12:58	SPK	2.00	2.960			2.970	101.0
21101507	006	SYSTEMEAS NITRATE+NITRITE AS N	599486	10/27/2021 13:09	SPK	2.00	1.990			1.970	99.1
21101507	006	SYSTEMEAS NITRATE+NITRITE AS N	599486	10/27/2021 13:09	SPK	2.00	1.990			1.970	99.1
		SYSTEMEAS NITRATE+NITRITE AS N		10/27/2021 12:35	STD	0.25	0.237				94.6

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:37	STD	0.25	0.235				94.0
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:47	STD	0.25	0.231				92.4
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:58	STD	0.25	0.230				91.9
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 13:26	STD	0.25	0.228				91.2
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 13:15	STD	0.25	0.228				91.0
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:35	STD	0.25	0.237				94.6
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:37	STD	0.25	0.235				94.0
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:47	STD	0.25	0.231				92.4
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 12:58	STD	0.25	0.230				91.9
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 13:26	STD	0.25	0.228				91.2
SYSTEAS	EASNITRATE+NITRITE AS N		10/27/2021 13:15	STD	0.25	0.228				91.0

NOTES:

Surface Water Field Sheets

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #1
LOCATION:	Miromar Lakes Parkway Bridge - North Side Rip Rap
DATE/TIME:	<u>10/26/21</u> <u>926</u>
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<u>Large Lake (>10HA)</u> (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	<u>5.5 clear / 6.0 total</u> (feet)	Sample Depth:	<u>1.5</u> (feet)
STREAM FLOW: (Circle One if applicable)	No Flow	<u>Flow within Banks</u>	Flood Conditions
WATER LEVEL: (Circle One)	Low	Normal	<u>High</u>
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<u>Direct Grab with Sample Bottle</u>	Dipper Other _____

Field Measurements		Meter ID#		Field Measurements			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>926</u>	<u>1.5</u>	<u>8.32</u>	<u>5.74</u>	<u>92.3</u>	<u>27.4</u>	<u>304</u>	<u>1.82</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A
 Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: sample collected @ 1.5 ft under bridge
no odor, clear water

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #2
LOCATION:	Mouth of Canal – Northeast of Via Portofino Way
DATE/TIME:	<u>10/26/21 9:10</u>
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<u>Large Lake (>10HA)</u> (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	<u>6.0 clear / 7.5 turbid</u> (feet)	Sample Depth:	<u>1.5</u> (feet)
STREAM FLOW: (Circle One If applicable)	No Flow	<u>Flow within Banks</u>	Flood Conditions
WATER LEVEL: (Circle One)	Low	Normal	<u>High</u>
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<u>Direct Grab with Sample Bottle</u>	Dipper Other _____

Field Measurements		Meter ID#		Field Measurements			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>9:10</u>	<u>1.5</u>	<u>8.22</u>	<u>8.64</u>	<u>99.9</u>	<u>27.4</u>	<u>305</u>	<u>2.13</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A
 Samples immediately placed on ice? ES No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden & Bill McKinney

REMARKS: Sample also collected @ 1.5 ft. no colors, clear water.

SURFACE WATER FIELD SHEET
Station Information



STATION ID: **WQ Location #3A**

LOCATION: Outlet Weir – South of Via Salerno Way @ Depth of 18-inches

DATE/TIME: 10/26/21 9:00

ALL TIMES ARE: ETZ or CTZ (circle one)

WATERBODY TYPE: (Circle One) Small Lake (>4 and <10HA) (collect samples in middle of open water) Large Lake (>10HA) (collect samples at selected location point)

Small Stream (collect samples in representative area) Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.75 clear / 3.75 run (feet) Sample Depth: 1.5 (feet)

(Average of 2 measurements)

STREAM FLOW: (Circle One if applicable) No Flow Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low Normal High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle Dipper Other _____

Field Measurements		Meter ID#		Field Measurements Read By: (initials)			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>900</u>	<u>1.5</u>	<u>7.97</u>	<u>8.43</u>	<u>98.9</u>	<u>21.5</u>	<u>313</u>	<u>2.70</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A

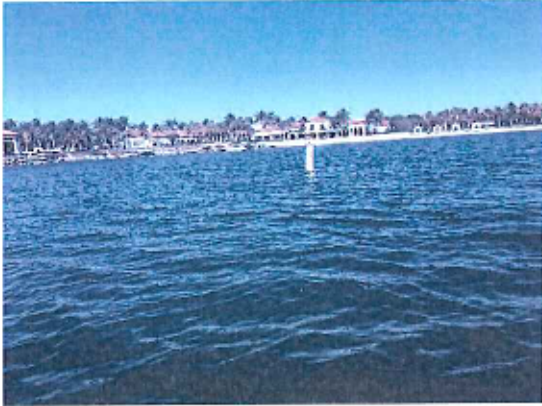
Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bin McKinnay

REMARKS: sample collected @ 1.5 ft deep.
no odor, minor organic matter floating in water

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #4
LOCATION:	South End of Beach – East of Miromar Lakes Pkwy - Buoy
DATE/TIME:	10/26/21 8:30
ALL TIMES ARE:	<input checked="" type="radio"/> ETZ or <input type="radio"/> CTZ (circle one)

WATERBODY TYPE: (Circle One)	<input type="radio"/> Small Lake (>4 and <10HA) (collect samples in middle of open water)	<input checked="" type="radio"/> Large Lake (>10HA) (collect samples at selected location point)
	<input type="radio"/> Small Stream (collect samples in representative area)	<input type="radio"/> Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	7.0 ^{clear} / 7.0 ^{total} (feet)	Sample Depth:	(feet)
STREAM FLOW:	(Circle One if applicable) No Flow	<input checked="" type="radio"/> Flow within Banks	Flood Conditions
WATER LEVEL:	(Circle One) Low	<input type="radio"/> Normal	<input checked="" type="radio"/> High
WATER SAMPLE COLLECTION DEVICE (Circle One)	<input checked="" type="radio"/> Van Dorn	<input type="radio"/> Direct Grab with Sample Bottle	<input type="radio"/> Dipper <input type="radio"/> Other

Field Measurements		Meter ID#		Field Measurements			
				Read By: (initials)			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
830	1.5	8.21	6.69	89.1	27.6	302	3.19
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: n/a
 Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: sample collected @ 1.5 ft deep, no odors or particulates in water

SURFACE WATER FIELD SHEET
Station Information



STATION ID: **WQ Location #5**

LOCATION: **Lake #30 Outfall**

DATE/TIME: 10/26/21 1015

ALL TIMES ARE: ETZ or CTZ
(circle one)

WATERBODY TYPE: (Circle One)

Small Lake (>4 and <10HA)
(collect samples in middle of open water)

Large Lake (>10HA)
(collect samples at selected location point)

Small Stream
(collect samples in representative area)

Large River
(collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 4.0 (feet)
(Average of 2 measurements)

Sample Depth: 1.5 (feet)

STREAM FLOW: (Circle One if applicable) No Flow Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low Normal High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle Dipper Other _____

Field Measurements		Meter ID#		Field Measurements			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>1015</u>	<u>1.5</u>	<u>8.01</u>	<u>4.69</u>	<u>60.1</u>	<u>27.9</u>	<u>423</u>	<u>17.12</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: n/a

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Lennon Hendon, Bill McKinney

REMARKS: sample collected from outfall. minnow/organisms in water. no odor

[Handwritten scribble]

SURFACE WATER FIELD SHEET
Station Information



STATION ID: **WQ Location #6**

LOCATION: West end of channel. SE corner of south lake @ Depth of 36-inches

DATE/TIME: 10/26/21 847

ALL TIMES ARE: ETZ or CTZ (circle one)

WATERBODY TYPE: (Circle One)

Small Lake (>4 and <10HA) (collect samples in middle of open water)

Large Lake (>10HA) (collect samples at selected location point)

Small Stream (collect samples in representative area)

Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 6.5 clear / 10.5 total (feet) (Average of 2 measurements)

Sample Depth: 3.0 (feet)

STREAM FLOW: (Circle One if applicable) No Flow Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low Normal High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle Dipper Other

Field Measurements		Meter ID#		Field Measurements			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>847</u>	<u>3.0</u>	<u>8.25</u>	<u>6.30</u>	<u>85.4</u> <u>8.5</u>	<u>27.6</u>	<u>305</u>	<u>1.79</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A

Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: Sample collected @ 3 ft deep. no odor/clear water

Laboratory Data Compliance Memo



Technical Memorandum

November 16, 2021

To	Mr. Bruce Bernard Manger of Field Operations Calvin, Giordano & Associates, Inc. 1800 Eller Drive, Suite 600 Fort Lauderdale, FL 33316	Tel	716.205.1977
From	Sheri Finn/ro/7-NF	Ref. No.	11225022
Subject	Analytical Results Compliance Report Surface Water Quality Monitoring Miromar Lakes Fort Myers, Florida October 2021		

1. Compliance Review

Samples were collected in October 2021 in support of the Miromar Lakes Surface Water Quality Monitoring sampling. The analytical results are summarized in Table 1. All samples were prepared and analyzed within the method required holding times. The method blank results were non-detect. All reported laboratory control sample (LCS) analyses demonstrated acceptable accuracy. Laboratory duplicate analyses were performed for some analytes. All results were acceptable, indicating good analytical precision. The matrix spike (MS) results were evaluated per the laboratory limits. The MS analyses performed were acceptable, demonstrating good analytical accuracy.

Based on this compliance review, the results in Table 1 are acceptable for use.

Regards

Sheri Finn
Analyst

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes
Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #1 / WQL1																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	7.66	NS	6.1	5.83	3.5	6.2	4.89	2.90	5.7	4.95	6.83	7.2	4.2	3.9	6.5	5.4	6.0	6.0	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	408	353	387	369.3	405	413.1	348.2	407.3	354.6	312.7	387.3	348.4	369	689	300	292	358	304	
Dissolved oxygen (DO), field	mg/L	8.03	5.91	7.53	8.13	7.95	5.91	6.95	6.89	7.39	8.54	6.49	6.1	8.02	6.05	7.07	7.51	7.0	5.74	
Dissolved oxygen (DO), field	%	100.9*	79.3	89.4	88.5	101.6	79.6	83.0	87.6	98.9	96.0	80.9	78.1	94.5	77.0	87.1	90.6	93.1	72.3	
pH, field	s.u.	8.44	8.19	7.92	8.13	7.97	8.23	8.08	8.37	8.24	8.31	8.13	8.36	8.26	8.29	8.57	8.82	8.10	8.32	
Temperature, field	Deg C	27.08	30.8	24	19.5	28.0	31	24.3	27.7	30.6	21.1	26.6	28.1	23.44	29.1	26.6	25.0	29.91	27.4	
Turbidity, field	NTU	2.41	3.44	3.55	4.64	8.16	5.05	3.02	2.90	5.53	4.39	3.32	3.71	1.66	3.63	2.42	1.58	1.87	1.82	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.80	4.20	3.90	6.0	5.4	6.0	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.026 I	U	0.035	0.008 U	0.008 U	0.026 I	0.008 U	0.022 I	0.008 U	0.008 U	0.017 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 I	0.008 U	
TAN criteria calculation	mg/L	0.24	0.29	0.67	0.66	0.48	0.27	0.52	0.26	0.27	0.45	0.42	0.26	0.42	0.28	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.626	0.878	0.911	0.968	0.611	0.580	0.629	0.551	0.565	0.632	0.619	0.588	0.632	0.591	0.05 U	0.480	0.474	0.531	
Total nitrogen	mg/L	0.626	0.878	0.911	0.974	0.616	0.592	0.629	0.565	0.574	0.639	0.619	0.588	0.639	0.591	0.05 U	0.480	0.474	0.531	
Nitrite/Nitrate	mg/L	U	U	U	0.006 I	0.005 I	0.012 I	0.004 U	0.014 I	0.009 I	0.007 I	0.006 U	0.006 U	0.007 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.074	0.071	0.030	0.012	0.027	0.038	0.026	0.014	0.017	0.014	0.024	0.026	0.028	0.051	0.0126	0.024	0.011	0.014	
Total phosphorus	mg/L	0.087	0.091	0.068	0.038	0.027 I	0.041	0.121	0.017 I	0.018 I	0.026 I	0.034	0.063	0.035	0.053	0.011 I	0.059	0.022 I	0.030 I	
Chlorophyll	mg/m3	5.91	7.32	7.86	11.1	8.42	9.27	5.25	10.1	10.1	6.92	3.72	7.81	3.71	3.96	5.76	3.55	7.44	7.06	
Total suspended solids (TSS)	mg/L	2.35	3.49	4.80	7.00	7.80	6.15	3.67	3.67	4.00	4.20	1.20 I	2.20 I	3.50	3.20	2.40	2.00 I	2.80	0.667 I	
Biochemical oxygen demand (total BOD5)	mg/L	0.706 I	U	U	1.06 I	1.40 I	1.05 I	1 U	1.16 I	2.72 I	1.85 I	1.24 I	1.03 I	1 U	1 U	1 U	1 U	1 U	1 U	

Sample Location/Sample ID:		WQ Location #2 / WQL2																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	7.43	NS	9.2	8.56	6	6.2	8.01	6.00	10.2	8.65	8.31	10.4	7.8	6.35	9.0	8.8	10.25	7.5	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	422	359	384	385.7	414	435.0	638.9	417.0	363.7	321.2	411.8	346.4	373	701	300	303	346	305	
Dissolved oxygen (DO), field	mg/L	7.67	5.55	7.12	8.05	7.87	6.21	6.58	6.95	7.52	9.90	6.88	6.27	8.12	5.86	4.64	7.04	7.09	8.64	
Dissolved oxygen (DO), field	%	97.4	74.0	84.7	87.6	101.8	82.9	77.7	88.0	100.2	110.0	85.9	81.0	96.2	77.2	51.1	86.9	93.7	99.9	
pH, field	s.u.	8.37	8.07	7.68	7.97	8.21	8.11	7.89	8.31	8.03	8.06	8.25	8.27	8.49	8.31	8.26	8.72	8.0	8.22	
Temperature, field	Deg C	27.62	30.4	24.1	19.5	28.7	30.5	23.7	27.5	30.4	20.5	26.7	28.5	23.9	30.1	27.1	25.5	29.87	27.4	
Turbidity, field	NTU	3.97	31.71	4.38	4.66	7.15	3.12	3.20	8.22	3.75	5.76	3.37	3.55	2.18	3.49	2.40	3.41	2.44	2.13	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.30	NS	5.5	6.5	7.0	7.0	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.019 I	U	0.071	0.008 U	0.008 U	0.036	0.008 U	0.008 U	0.008 U	0.027	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.017 I	0.008 U	
TAN criteria calculation	mg/L	0.26	0.36	0.90	0.84	0.32	0.34	0.71	0.30	0.38	0.69	0.34	0.30	0.28	0.25	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.745	1.15	0.888	1.04	0.507	0.641	0.710	0.675	0.613	0.693	0.606	0.605	0.403	0.556	0.500	0.450	0.469	0.542	
Total nitrogen	mg/L	0.745	1.15	0.900	1.04	0.514	0.645	0.710	0.690	0.618	0.698	0.606	0.605	0.403	0.556	0.500	0.450	0.469	0.542	
Nitrite/Nitrate	mg/L	U	U	0.012 I	U	0.007 I	0.004 I	0.004 U	0.015 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.077	0.070	0.064	0.015	0.028	0.050	0.025	0.015	0.020	0.008	0.002 U	0.055	0.035	0.053	0.0288	0.026	0.016	0.015	
Total phosphorus	mg/L	0.079	0.087	0.066	0.031 I	0.054	0.065	0.042	0.023 I	0.008 U	0.009 I	0.008 U	0.073	0.069	0.062	0.012 I	0.032	0.017 I	0.036	
Chlorophyll	mg/m3	6.59	7.28	8.08	11.7	7.76	7.13	5.42	8.35	9.06	8.80	5.28	9.11	4.34	5.11	6.13	2.04	5.95	7.37	
Total suspended solids (TSS)	mg/L	4.21	3.90	4.60	7.20	6.60	2.60	3.60	8.00	1.00 I	4.67	3.80	2.40	3.00	2.40	2.40	2.80	2.80	2.00 I	
Biochemical oxygen demand (total BOD5)	mg/L	0.778 I	U	U	1.33 I	1.13 I	1 U	1 U	1.36 I	1.89 I	1.10 I	1.40 I	1.50 I	1 U	1 U	1 U	1 U	1 U	1 U	

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes
Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #3A / WQL3A																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	3.78	3.64	3.52	2.81	1.5	4.6	3.35	3.2	3.6	5.87	2.95	4.5	3	1.5	4.0	3.0	3.33	3.75	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	406	329	255	375.7	430	200.4	339	418.9	365.1	323	391.9	373.2	381	690	293	297	363	313	
Dissolved oxygen (DO), field	mg/L	7.31	4.78	2.93	7.40	14.02	1.38	6.49	6.16	7.33	8.44	5.82	2.05	5.77	6.49	6.41	5.62	3.15	8.43	
Dissolved oxygen (DO), field	%	91.8	62.9	34.3	81.5	198	17.42	76.4	78.2	97.9	94.3	72.7	25.7	68.5	85.4	80.5	70.2	39.0	98.9	
pH, field	s.u.	8.44	8.0	6.99	7.96	9.32	6.91	7.97	8.15	8.13	7.53	8.21	7.34	7.93	8.44	8.38	8.49	7.16	7.97	
Temperature, field	Deg C	27.0	29.7	23.2	20.1	33.7	27.3	23.5	27.6	30.5	20.8	26.7	26.8	23.77	29.3	27.0	25.4	26.24	27.6	
Turbidity, field	NTU	7.64	78.77	3.48	5.42	86.9	2.99	3.05	3.94	3.63	4.20	2.20	2.79	1.31	3.49	2.76	4.13	1.77	2.70	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	4.0	3.0	3.33	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.029 I	0.044	0.027 I	0.008 U	0.008 U	0.009 I	U	0.023 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.035	0.008 U	
TAN criteria calculation	mg/L	0.25	0.42	1.54	0.82	0.04	1.22	0.65	0.38	0.32	1.29	0.37	1.02	0.67	0.21	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.581	0.949	1.11	1.06	3.73	0.642	0.634	0.645	0.621	0.949	0.598	0.635	0.451	0.510	0.216	0.526	0.546	0.565	
Total nitrogen	mg/L	0.581	0.949	1.13	1.06	3.73	0.650	0.634	0.658	0.626	0.954	0.598	0.635	0.451	0.510	0.216	0.526	0.546	0.565	
Nitrite/Nitrate	mg/L	U	U	0.021	U	0.008 I	0.008 I	0.004 U	0.013 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.073	0.012	0.051	0.012	0.018	0.029	0.031	0.016	0.020	0.025	0.014	0.060	0.043	0.048	0.0199	0.030	0.017	0.012	
Total phosphorus	mg/L	0.088	0.026 I	0.052	0.033	0.090	0.039	0.048	0.024 I	0.008 U	0.019 I	0.018 I	0.066	0.069	0.064	0.012 I	0.046	0.021 I	0.017 I	
Chlorophyll	mg/m3	5.76	8.71	10.1	10.4	249	10.1	4.83	7.85	10.6	8.15	4.60	7.88	3.79	5.10	5.52	4.00	7.06	7.99	
Total suspended solids (TSS)	mg/L	7.06	6.42	5.11	7.20	95.0	3.80	4.00	3.60	6.00	4.33	2.60	2.40	1.50 I	4.80	2.40	4.20	2.00 I	3	
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.11 I	10.6	1.39 I	1 U	1.12 I	1.66 I	1.19 I	2.32 I	1.27 I	1 U	1 U	1 U	1.30 I	1.32 I	1 U	

Sample Location/Sample ID:		WQ Location #3B / WQL3B												WQL6	WQL6	WQL6	WQL6	WQL6	WQL6	WQL6
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	3.78	4	3.52	2.98	2	4.6	6.94	3.2	3.6	5.87	3.50	12.5	17.6	15.5	10.5	14.4	12.3	10.5	
Sample Depth	Feet	3	3	3	2.5	1.5	3	3.0	NS	3	3	3	3	3	3	1.5	3	3	3.0	
Conductivity, field	umhos/cm	405	341	369	313.1	406	384.1	338.6	NS	354.5	322.4	391.3	340.8	362	688	290	295	365	305	
Dissolved oxygen (DO), field	mg/L	7.32	6.22	6.82	6.58	8.46	5.59	5.87	NS	7.39	6.32	5.7	5.63	8.44	6.49	6.66	7.43	6.82	8.25	
Dissolved oxygen (DO), field	%	91.1	82.8	81.2	67.9	109.3	74.0	68.8	NS	98.8	70.6	71.2	72.4	99.2	85.7	83.4	90.4	90.3	85.4	
pH, field	s.u.	8.46	8.14	7.68	7.77	8.12	8.10	8.00	NS	8.18	8.08	8.22	8.16	8.5	8.51	8.63	8.74	7.59	8.25	
Temperature, field	Deg C	26.55	30.3	24.1	16.9	28.6	30.0	23.3	NS	30.6	20.8	26.7	28.3	23.28	29.4	29.3	25.2	30.07	27.6	
Turbidity, field	NTU	7.98	10.03	3.15	21.38	3.93	4.15	2.84	NS	26.26	7.10	2.17	4.85	1.48	2.83	2.13	1.75	2.19	1.79	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.80	8.00	7.20	7.0	7.5	6.4	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.15 I	U	0.097	0.008 U	0.008 U	0.028 I	NS	0.015 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.012 I	0.008 U	
TAN criteria calculation	mg/L	0.24	0.32	0.90	1.29	0.37	0.35	0.63	NS	0.30	0.66	0.36	0.36	0.28	0.19	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.736	0.880	1.04	2.90	0.462	0.715	0.731	NS	0.757	0.722	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448	0.496	
Total nitrogen	mg/L	0.744	0.880	1.05	2.90	0.472	0.715	0.731	NS	0.763	0.727	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448	0.496	
Nitrite/Nitrate	mg/L	0.008 I	U	0.012 I	U	0.010 I	0.004 U	0.004 U	NS	0.006 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.088	0.064	0.029	0.012	0.029	0.226	0.272	NS	0.020	0.022	0.027	0.063	0.032	0.059	0.0155	0.026	0.002 I	0.014	
Total phosphorus	mg/L	0.092	0.098	0.031 I	0.168	0.054	1.08	0.501	NS	0.013 I	0.033	0.029 I	0.067	0.035	0.064	0.016 I	0.055	0.023 I	0.038	
Chlorophyll	mg/m3	5.99	7.05	7.57	64.5	5.44	9.14	3.94	NS	10.8	7.61	5.38	8.86	3.18	4.95	4.80	2.48	7.62	6.69	
Total suspended solids (TSS)	mg/L	7.11	5.78	3.80	44.7	4.20	4.80	3.20	NS	26.0	3.33	6.20	2.60	1.25 I	3.20	2.60	1.80 I	1.20 I	3	
Biochemical oxygen demand (total BOD5)	mg/L	0.556 I	U	U	6.47	1 U	1.45 I	1 U	NS	2.01 I	1 U	1.16 I	1.04 I	1 U	1 U	1.39 I	1 U	1 U	1 U	

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes
Fort Myers, Florida
October 2021

Sample Location/Sample ID:		WQ Location #4 / WQL4																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	12	7.77	14.88	7.91	5.0	10.7	7.9	6.90	11.8	10.7	14.20	15.4	13.55	12.55	13.0	8.01	7.2	7.0	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	403	340	373	361.8	405	404.8	342.0	399.7	342	310.3	382.1	337.0	363	682	286	291	349	302	
Dissolved oxygen (DO), field	mg/L	7.72	6.55	7.14	8.06	8.33	5.02	5.73	7.13	6.96	7.84	7.28	6.42	8.45	6.42	1.41	7.75	7.31	6.69	
Dissolved oxygen (DO), field	%	96.4	88.3	85.6	88.3	106.6	66.8	68.2	89.2	92.9	87.8	90.2	82.8	99.4	83.4	17.0	93.5	94.2	89.1	
pH, field	s.u.	8.58	8.31	7.59	8.10	7.65	8.16	8.08	8.39	8.34	7.99	7.97	8.38	8.58	8.57	8.66	8.80	8.62	8.21	
Temperature, field	Deg C	26.71	31.1	24.5	19.8	28.1	30.3	24.1	26.8	30.5	20.9	26.3	28.5	23.49	29.9	27.5	24.8	29.95	27.6	
Turbidity, field	NTU	1.87	2.04	4.44	3.02	3.11	1.81	2.48	3.38	3.56	4.10	2.72	2.58	1.04	2.48	1.85	2.28	1.76	3.19	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.50	8.50	7.00	6.5	8.01	7.2	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	U	0.023 I	U	0.012 I	0.008 U	0.008 U	0.026 I	0.008 U	0.014 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.025 I	0.008 U	
TAN criteria calculation	mg/L	0.20	0.23	0.96	0.68	0.72	0.31	0.53	0.27	0.23	0.74	0.54	0.25	0.24	0.16	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.868	0.887	0.780	0.976	0.518	0.570	0.612	0.610	0.640	0.885	0.615	0.126 I	0.371	0.633	0.05 U	0.538	0.469	0.555	
Total nitrogen	mg/L	0.868	0.887	0.808	0.976	0.524	0.570	0.612	0.623	0.645	0.885	0.615	0.126	0.371	0.633	0.05 U	0.538	0.469	0.555	
Nitrite/Nitrate	mg/L	U	U	0.028	U	0.006 I	0.004 U	0.004 U	0.013 I	0.005 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.094	0.017	0.024	0.017	0.030	0.044	0.027	0.019	0.017	0.022	0.026	0.065	0.037	0.042	0.0180	0.021	0.012	0.016	
Total phosphorus	mg/L	0.101	0.021 I	0.027 I	0.038	0.048	0.067	0.038	0.030 I	0.044	0.043	0.038	0.070	0.064	0.064	0.014 I	0.043	0.032	0.043	
Chlorophyll	mg/m3	4.92	7.11	7.78	9.09	3.94	9.31	4.62	8.66	10.5	8.43	3.43	7.38	2.75	3.78	5.05	1.74	5.39	7.27	
Total suspended solids (TSS)	mg/L	2.33	2.84	3.60	5.20	3.26	2.60	1.60 I	2.00 I	5.50	2.33	3.40	3.20	1.25 I	3.40	1.80 I	0.570 U	3.60	2.00 I	
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.09 I	1 U	1 U	1 U	1.16 I	1.47 I	1 U	1 U	1.07 I	1 U	1 U	1.51 I	1 U	1 U	1 U	

Sample Location/Sample ID:		WQ Location #5 / WQL5																		
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	10/26/2021	
Field Parameters	Units																			
Total Water Depth	Feet	NS	2	2.03	1.42	2.5	4.32	2.84	S	2.7	1.10	1.50	1.98	1.72	<1	2.0	2.5	NM	4.0	
Sample Depth	Feet	NS	1.5	1.5	0.5	1.5	1.5	1.5	S	1.5	0.5	0.75	1.0	1	<1	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	NS	411	515	462.0	464	478.4	447.9	464.1	405.1	427.2	475.8	465.0	480	802	373	409	82.9	423	
Dissolved oxygen (DO), field	mg/L	NS	4.84	6.22	6.88	8.50	8.03	4.21	5.47	6.09	4.21	5.00	3.20	7.6	5.18	7.65	3.05	6.07	4.69	
Dissolved oxygen (DO), field	%	NS	64.7	77.2	72.2	111.1	109.1	49.6	68.2	81.2	46.1	61.0	41.3	89.3	69.0	96.5	37.5	80.6	60.1	
pH, field	s.u.	NS	7.83	7.77	7.65	7.77	8.10	7.58	7.61	7.80	6.38	6.44	7.99	8.35	8.28	8.18	8.04	8.12	8.01	
Temperature, field	Deg C	NS	30.6	26.4	17.7	29.3	31.5	23.6	26.6	30.4	19.8	25.4	28.4	23.42	30.3	27.4	25.3	30.19	27.9	
Turbidity, field	NTU	NS	2.08	3.62	3.60	5.77	4.65	1.99	4.93	3.40	4.18	4.98	4.71	2.45	5.74	2.96	2.27	4.05	17.12	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	NS	NS	NS	NS	
Wet Parameters	Units																			
Ammonia-N	mg/L	NS	0.033	U	0.008 I	0.008 U	0.008 U	0.034	0.008 U	0.010 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.023 I	0.008 U	0.008 U	
TAN criteria calculation	mg/L	NS	0.49	0.70	1.40	0.58	0.32	1.03	0.82	0.52	2.19	1.51	0.46	0.36	0.26	NS	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	NS	0.845	0.786	0.962	0.754	0.756	0.838	1.11	0.857	0.944	0.902	0.807	0.688	1.08	0.137 I	0.755	0.720	0.668	
Total nitrogen	mg/L	NS	0.845	0.794	0.962	0.762	0.760	0.854	1.13	0.863	0.957	0.902	0.807	0.688	1.08	0.137	0.755	0.720	0.668	
Nitrite/Nitrate	mg/L	NS	U	0.008 I	U	0.008 I	0.004 I	0.016	0.016	0.006 I	0.013 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	NS	0.022	0.042	0.017	0.027	0.019	0.022	0.016	0.015	0.019	0.023	0.050	0.038	0.055	0.075	0.029	0.014	0.008	
Total phosphorus	mg/L	NS	0.065	0.042	0.036	0.035	0.067	0.046	0.027 I	0.025 I	0.024 I	0.028 I	0.081	0.049	0.102	0.084	0.067	0.035	0.027 I	
Chlorophyll	mg/m3	NS	15.1	12.5	13.9	16.0	25.0	17.3	27.6	19.8	15.4	23.4	15.7	12.6	30.4	22.7	4.93	22.9	16.5	
Total suspended solids (TSS)	mg/L	NS	4.10	4.80	5.00	8.11	11.0	0.570 U	6.20	4.00	3.00	7.60	2.40	3.25	9.00	4.20	3.00	5.40	2.33	
Biochemical oxygen demand (total BOD5)	mg/L	NS	1.31 I	1.56 I	1.36 I	2.41 I	2.14 I	1.64 I	3.38 I	1.15 I	1.38 I	3.39 I	1.54 I	1.32 I	3.01 I	1.73 I	1 U	1.55 I	1 U	

Notes:

- S - Sample collected from edge of lake
- U - Not detected at the associated reporting limit
- * - DO values at or above 100% are possible super-saturation conditions due to high water temperatures and/or high volume of algae
- NS - Not sampled during noted event
- I - Reported value is between method detection limit and the practical quantitation limit