

Our ref: 11225022-03

November 28, 2022

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

Water Quality Monitoring – October 2022 – Flow Way CDD

Dear Mr. Bernard:

GHD Services Inc. (GHD) is pleased to present the results of our water quality sampling services for the Flow Way and Lakes 7, 9, 12 and 18/19 - Flow Way CDD at Esplanade Golf and Country Club.

1. Water Quality Sampling – October 2022

The October 2022 sampling event consisted of the collection of five (5) surface water samples at five (5) sample locations (FW – Flow Way, FW – Lake 9, FW – Lake 7, FW – Lake 12, and FW – Lake 18/19) within the Esplanade Golf and Country Club as identified on **Figure 1**.

Samples were collected using direct-dip sampling methods. All samples were collected at a depth of 18 inches from the banks of the Lakes/Flow Way. See **Figure 1** for sampling locations.

Conductivity, dissolved oxygen, pH, and temperature were measured in the field with a calibrated YSI Model 556 multi-parameter water quality meter. Turbidity was also measured at each location. Surface Water Field Sheets are attached. Field data is summarized in the Table within the **Laboratory Data Compliance Memo**.

The collected 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 analyses 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 2022 sampling event were prepared and analyzed within the method required holding times. The laboratory data has 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 within the **Laboratory Data Compliance Memo**. The laboratory report is also attached. Trend graphs have been prepared for each monitor location for laboratory analytical results and select field measurements.

2. Analytical Summary

The October 2022 sampling event represents the third sampling event for the select five (5) WQ Locations for Flow Way. Prior reports for the year of 2022 were the first and second analyses for the Flow Way CCD. Trends were not developed until after at least the third event, so this Analytical Summary serves as the first review of trends of data. Future reports will include a typical analytical summary of subsequent results, but this review will act as the annual summary of data for the year. Laboratory results are summarized in the **Laboratory Data Compliance Memo** and are displayed visually in the trend graphs, enclosed.

The following discussion highlights sample locations with notable trend increases in the attached graphs.

The biochemical oxygen demand concentration has slightly increased at the FW-Flow Way sampling location since the previous June 2022 sampling event and has the highest concentration out of the five (5) sampling locations (1.08 l mg/L).

The concentration of chlorophyll α has notably increased at the FW-Flow Way sampling location and is significantly higher in concentration when compared to the other four (4) sampling locations (34.6 mg/L).

Dissolved oxygen has significantly increased at the FW-Lake 9 and FW-Lake 7 sampling locations since the previous June 2022 sampling event. Sampling location FW-Lake 7 had the highest concentration of dissolved oxygen for the October 2022 sampling event (84%).

The concentration of total phosphorus decreased at all five (5) sampling locations and has notably decreased at the FW-Lake 9 sampling location.

The concentration of total suspended solids and turbidity has significantly decreased at sampling location FW-Flow Way since the previous sampling event.

All other water quality results remain relatively consistent with the previous sampling event.

A Trophic State Index calculation (defined by FAC 62-303.200 and the Water Quality Assessment for the State of Florida 305(b) Report) was used to help classify the quality of water based on each water body's Chlorophyll a, Total Phosphorous and Total Nitrogen concentration. A ratio of Total Nitrogen to Total Phosphorus was calculated for each water body to determine general conditions. For this sampling event, each body was within the "Nutrient Balanced" range. A TSI value for lakes of 0-59 is "good", a value of 60-69 is "fair", and a value of 70+ is "poor". Based on the results of this sampling event, each sampling location's calculated TSI value is:

Flow Way	Lake 7	Lake 9	Lake 12	Lake 18/19
60.5	48.6	45.1	51.7	46.6

3. Conclusions and Recommendations

The concentration of chlorophyll α can reflect an increase in nutrient loads and consequentially result in an increase in algal activity. Correspondingly, an increase in the concentration of biochemical oxygen demand also reflects increasing microbial activity. The sampling location FW-Flow Way saw an increase or a slight increase in both water quality parameters when compared to the previous sampling event. However, the dissolved oxygen for this location remains comparatively high (57.5%). To follow, the concentration of total nitrogen and total phosphorus remains low (1.15 mg/L and 0.039 mg/L). Nitrogen and phosphorus are essential nutrients when considering algal growth.

Due to this, and the fact that that no other water quality parameters of concern are noted, continued monitoring is recommended at FW-Flow Way until more sampling events occur to determine trends in water quality parameters.

The next tri-annual sampling event is planned for February 2022. Please call if you have questions or need additional information.

Sincerely,

GHD



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Environmental Engineer
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239) 944-0709



Lori Coolidge, P.G.
Professional Geologist
Lori.Coolidge@ghd.com

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

Laboratory Data Compliance Memo



Technical Memorandum

November 23, 2022

To	Mr. Bruce Bernard Manager of Field Operations Calvin, Giordano & Associates, Inc. 1800 Eller Drive, Suite 600 Fort Lauderdale, FL 33316	Tel	716.205-1977
Copy to	Connor Haydon	Email	Connor.Haydon@ghd.com
From	Sheri Finn/eew/17	Ref. No.	11225022
Subject	Analytical Results Compliance Report Surface Water Quality Monitoring Flow Way CDD Fort Myers, Florida October 2022		

1. Compliance Review

Samples were collected in October 2022 in support of the Flow Way CDD 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

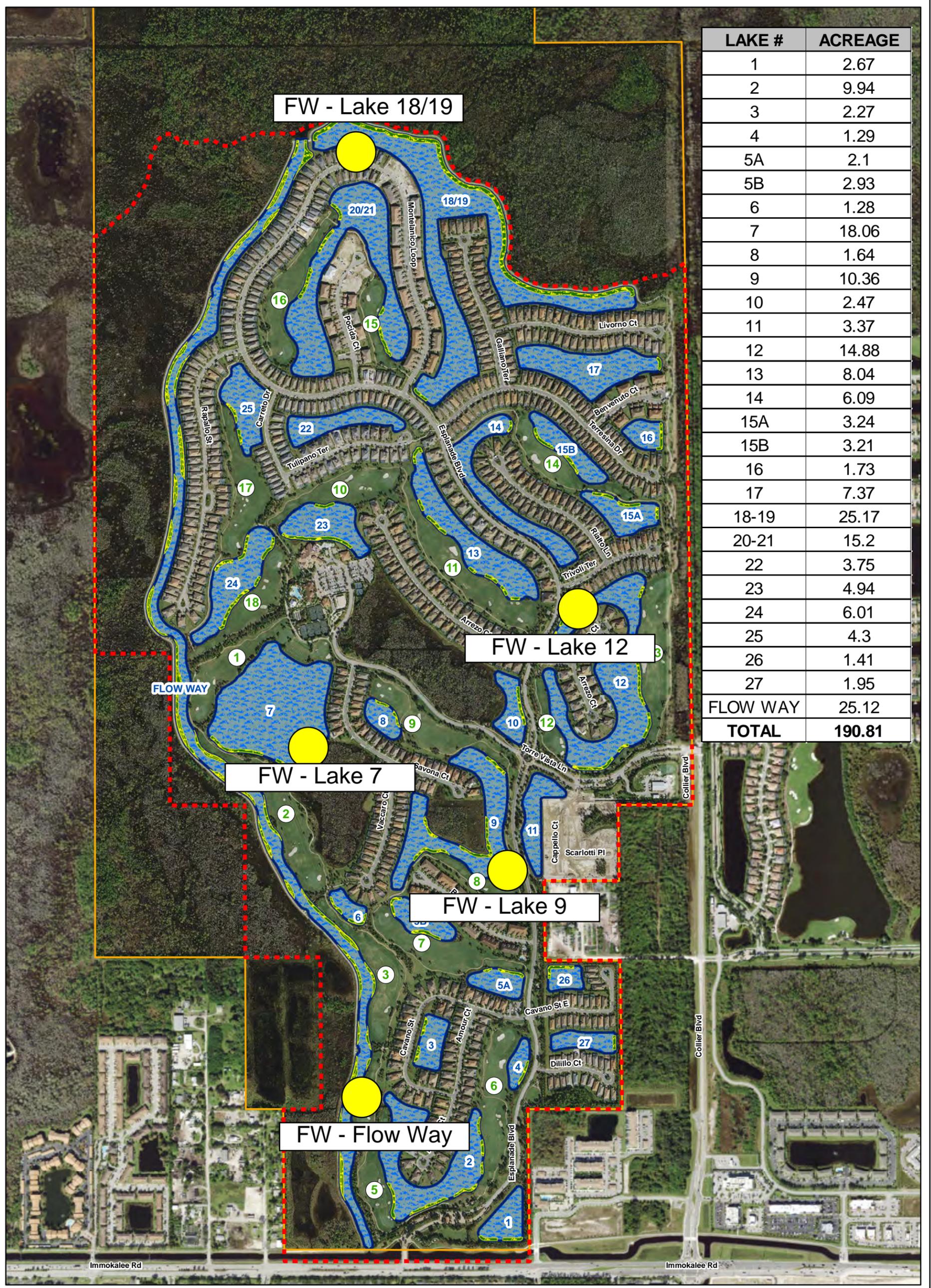
**Analytical Results Summary
Surface Water Quality Monitoring
Flow Way CCD - Fort Myers, Florida
October 2022**

Sample Location/Sample ID:		FW-Flow Way	FW-Flow Way	FW-Flow Way	FW-Lake 12	FW-Lake 12	FW-Lake 12	FW-Lake 18/19	FW-Lake 18/19	FW-Lake 18/19
Sample Date:		3/9/2022	06/08/2022	10/10/2022	3/9/2022	06/08/2022	10/10/2022	3/9/2022	06/08/2022	10/10/2022
Field Parameters	Units									
Total Water Depth	Feet	NM	NM	NM	NM	NM	NM	NM	NM	NM
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	486	426	442.5	477.2	485	600	416.1	407	570
Dissolved oxygen (DO), field	mg/L	5.13	4.84	4.75	6.22	4.58	5.06	5.51	4.49	4.54
Dissolved oxygen (DO), field	%	62.3	63.1	57.5	76.1	60.9	62.6	66.8	57.9	57.5
pH, field	s.u.	8.54	7.81	6.95	8.41	8.16	8.05	8.79	8.42	8.08
Temperature, field	Deg C	25.3	29.1	26.5	25.7	29.8	27	25.7	29.9	29.1
Turbidity, field	NTU	3.38	8.00	1.66	4.07	3.15	2.87	3.02	2.29	1.81
Secchi Disk	Depth									
Wet Parameters	Units									
Ammonia-N	mg/L	0.008 U	0.008 U	0.088	0.008 U	0.008 U	0.046	0.008 U	0.008 U	0.181
TAN criteria calculation	mg/L	NM	NM	NM	NM	NM	NM	NM	NM	NM
Total kjeldahl nitrogen (TKN)	mg/L	2.08	1.18	1.14	1.35	1.10	0.761	2.13	1.34	0.988
Total nitrogen	mg/L	2.08	1.20	1.15	1.35	1.11	0.957	2.13	1.35	1.00
Nitrite/Nitrate	mg/L	0.006 U	0.024	0.010 I	0.006 U	0.011 I	0.196	0.006 U	0.013 I	0.014 I
Ortho phosphorus (Field Filtered)	mg/L	0.004 I	0.004 I	0.015	0.022	0.017	0.013	0.014	0.014	0.014
Total phosphorus	mg/L	0.024 I	0.064	0.039	0.026 I	0.062	0.044	0.027 I	0.059	0.038
Chlorophyll	mg/m3	4.73	14.0	34.6	7.87	9.88	10.4	5.80	4.86	5.39
Total suspended solids (TSS)	mg/L	6.33	7.67	1.20 I	3.33	0.667 I	3.20	3.67	1.67 I	2.40
Biochemical oxygen demand (total BOD5)	mg/L	1 U	1 U	1.08 I	1.39 I	1 U	1 U	1.22 I	1 U	1 U
Sample Location/Sample ID:		FW-Lake 7	FW-Lake 7	FW-Lake 7	FW-Lake 9	FW-Lake 9	FW-Lake 9			
Sample Date:		3/9/2022	06/08/2022	10/10/2022	3/9/2022	06/08/2022	10/10/2022			
Field Parameters	Units									
Total Water Depth	Feet	NM	NM	NM	NM	NM	NM			
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5			
Conductivity, field	umhos/cm	386	438	518	459	501	492			
Dissolved oxygen (DO), field	mg/L	6.81	4.13	6.45	5.13	2.17	4.11			
Dissolved oxygen (DO), field	%	82.5	54.4	84.0	61.7	28.4	52.3			
pH, field	s.u.	8.82	8.29	8.38	8.51	8.15	7.94			
Temperature, field	Deg C	25.2	29.7	27	24.9	29.2	27			
Turbidity, field	NTU	1.98	1.66	3.28	3.57	1.83	1.78			
Secchi Disk	Depth									
Wet Parameters	Units									
Ammonia-N	mg/L	0.008 U	0.008 U	0.014 I	0.008 U	0.008 U	0.013 I			
TAN criteria calculation	mg/L	NM	NM	NM	NM	NM	NM			
Total kjeldahl nitrogen (TKN)	mg/L	1.31	0.899	0.838	1.36	1.15	0.599			
Total nitrogen	mg/L	1.31	0.913	0.847	1.36	1.33	0.610			
Nitrite/Nitrate	mg/L	0.006 U	0.014 I	0.009 I	0.006 U	0.181	0.011 I			
Ortho phosphorus (Field Filtered)	mg/L	0.006 I	0.013	0.016	0.021	0.002 U	0.007 I			
Total phosphorus	mg/L	0.025 I	0.059	0.041	0.024 I	0.036	0.013 I			
Chlorophyll	mg/m3	3.27	4.88	7.65	5.45	5.75	7.06			
Total suspended solids (TSS)	mg/L	0.667 I	0.570 U	3.60	1.67 I	2.00 I	5.20			
Biochemical oxygen demand (total BOD5)	mg/L	1.06 I	1 U	1 U	1.08 I	1 U	1 U			

Notes:

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

Figure



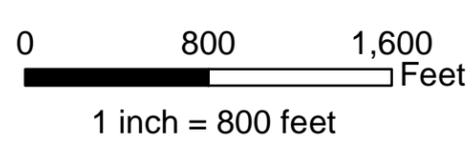
LAKE #	ACREAGE
1	2.67
2	9.94
3	2.27
4	1.29
5A	2.1
5B	2.93
6	1.28
7	18.06
8	1.64
9	10.36
10	2.47
11	3.37
12	14.88
13	8.04
14	6.09
15A	3.24
15B	3.21
16	1.73
17	7.37
18-19	25.17
20-21	15.2
22	3.75
23	4.94
24	6.01
25	4.3
26	1.41
27	1.95
FLOW WAY	25.12
TOTAL	190.81

Flow Way CDD Lakes

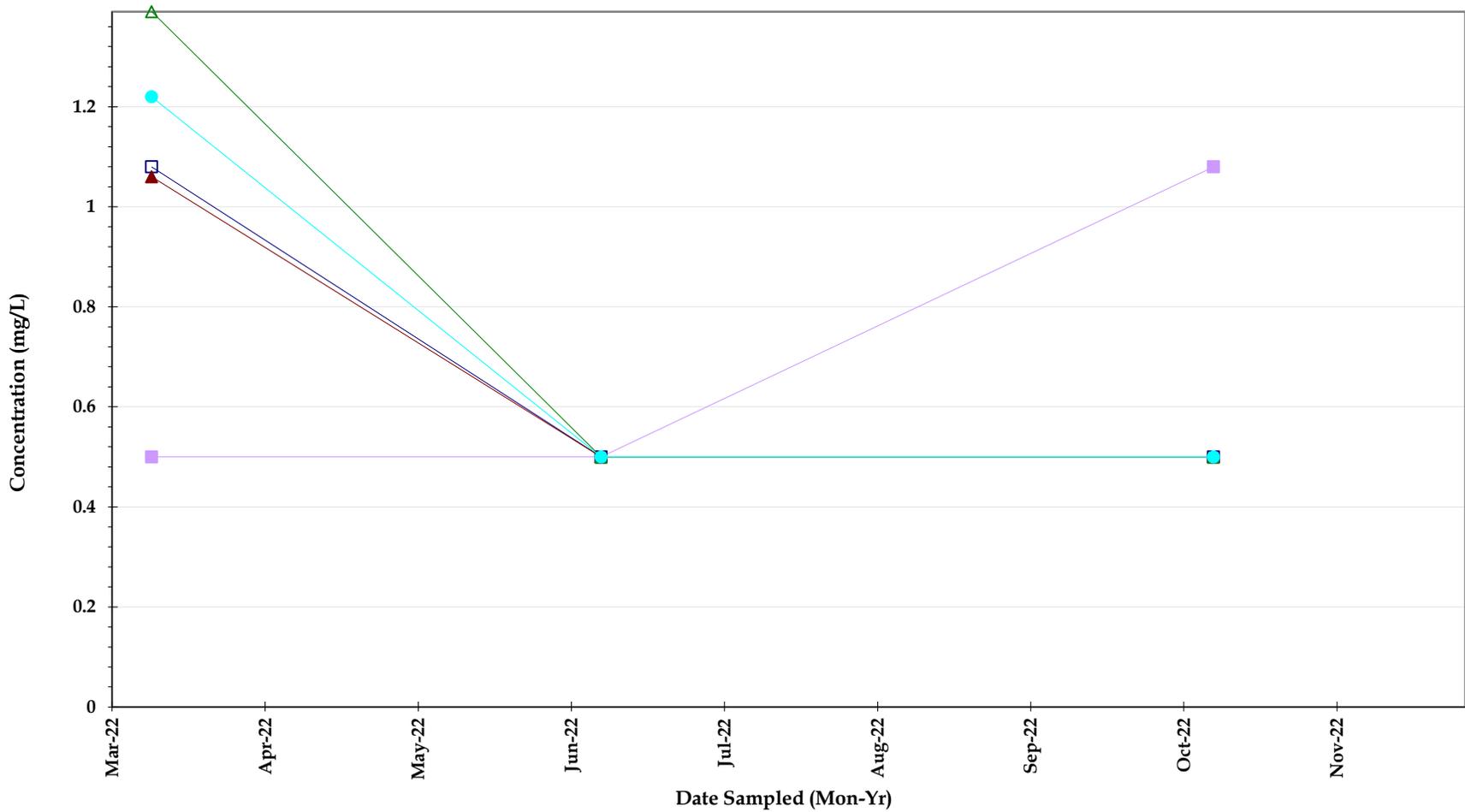
Date: 3/23/2022



- Legend**
- - - CDD Boundary
 - Property Boundary
 - Lakes
 - Permitted Littoral Shelf
 - 3 Hole Numbers
 - 19 Lake Numbers

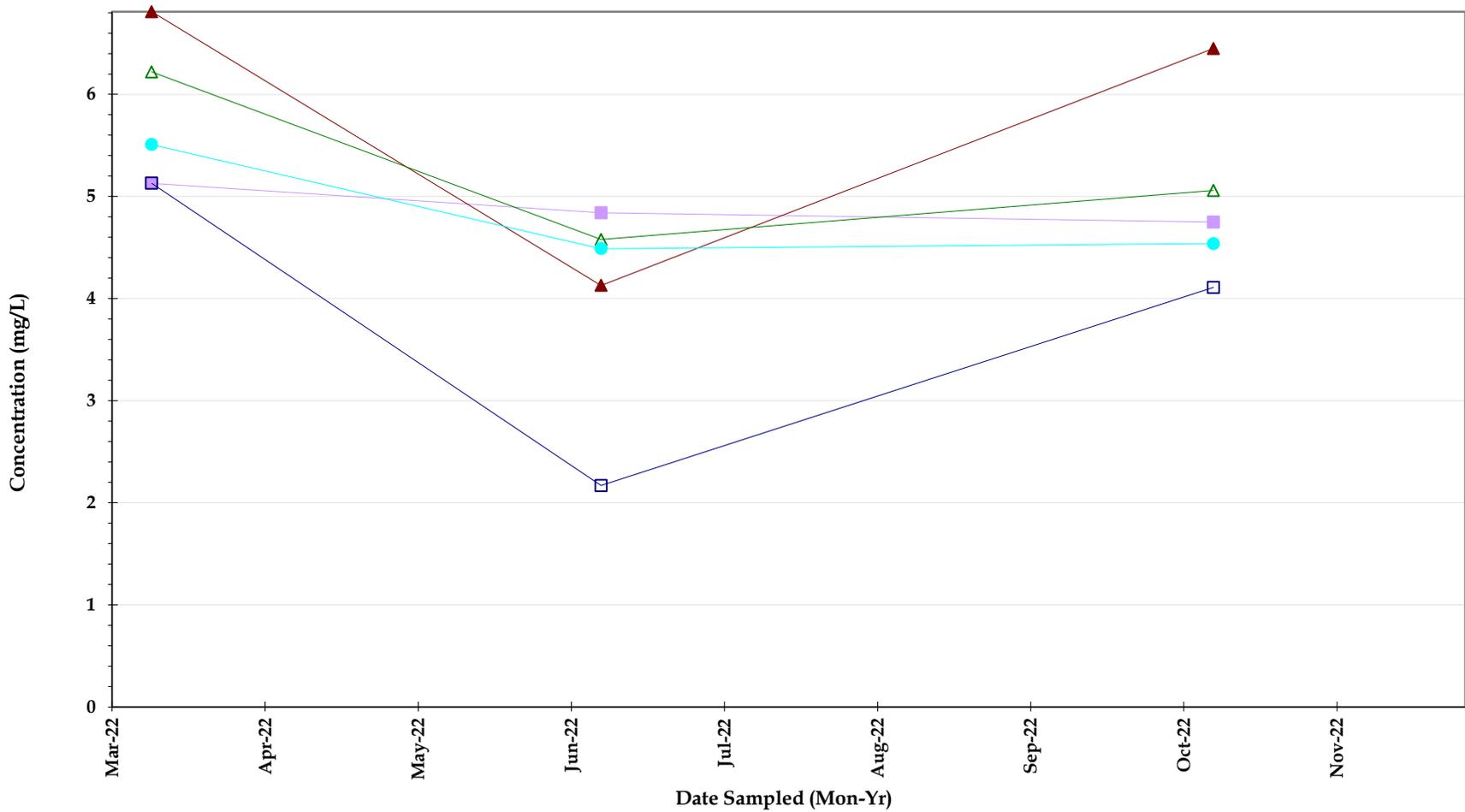


Trend Graphs



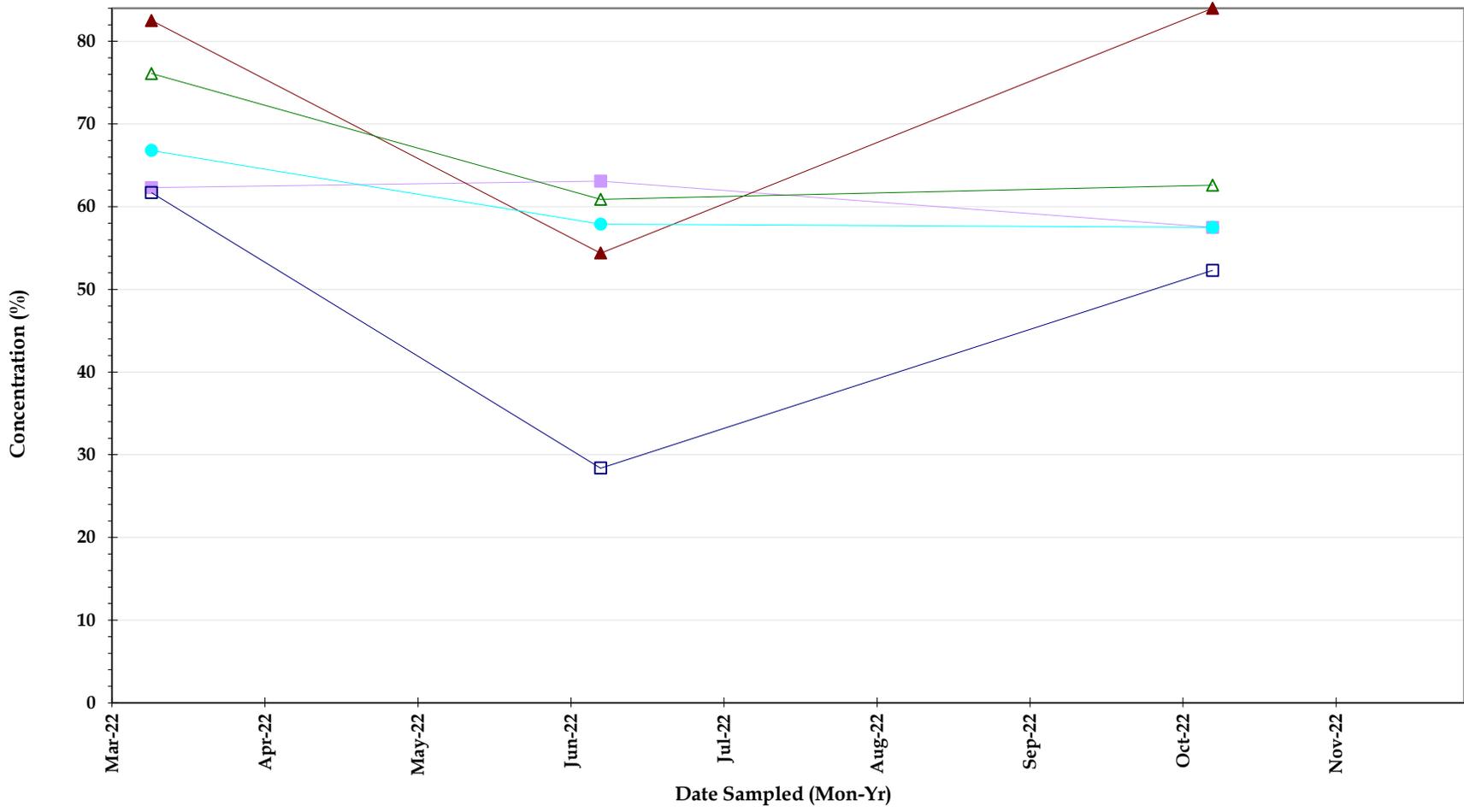
Biochemical Oxygen Demand

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



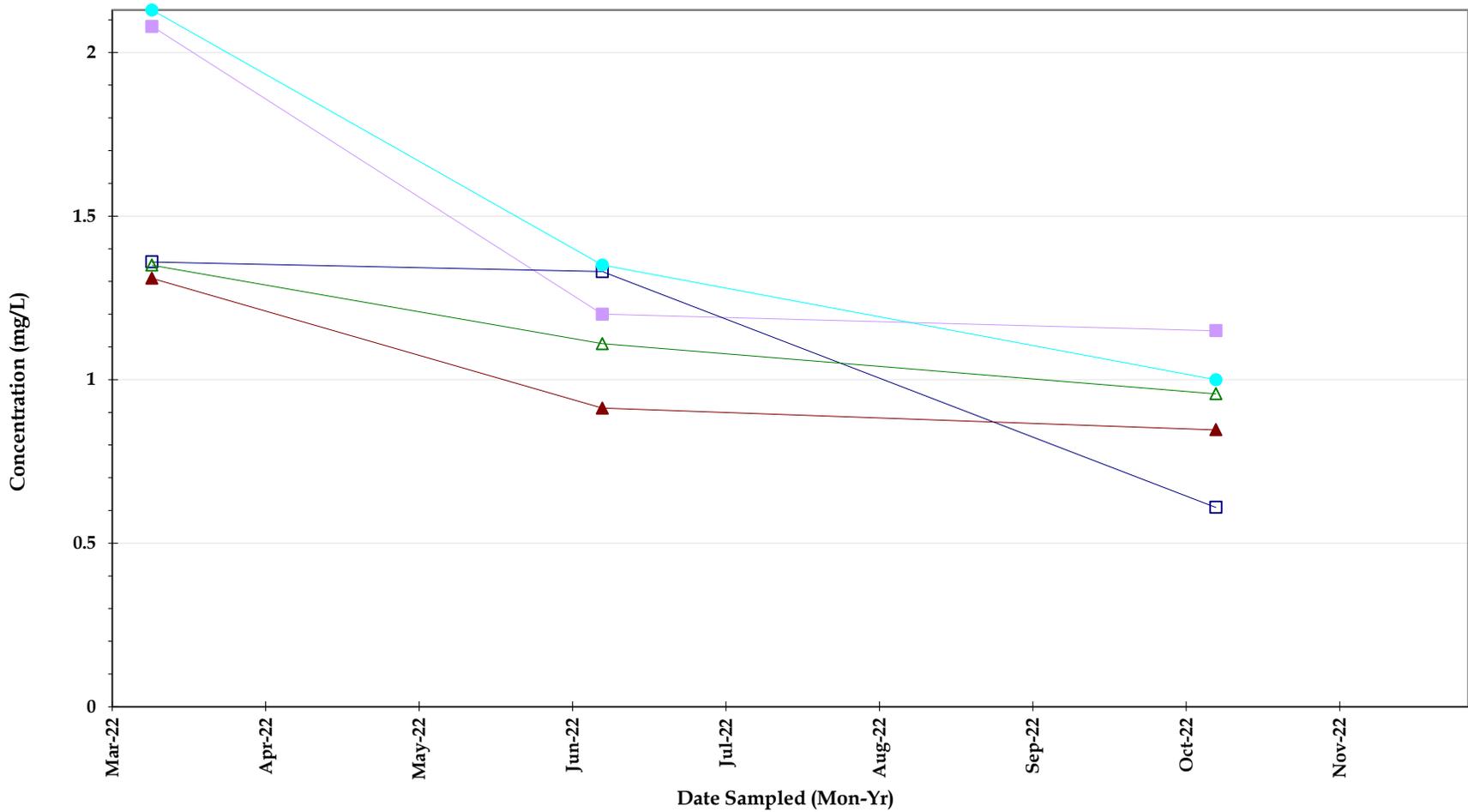
Dissolved Oxygen (mg/L)

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



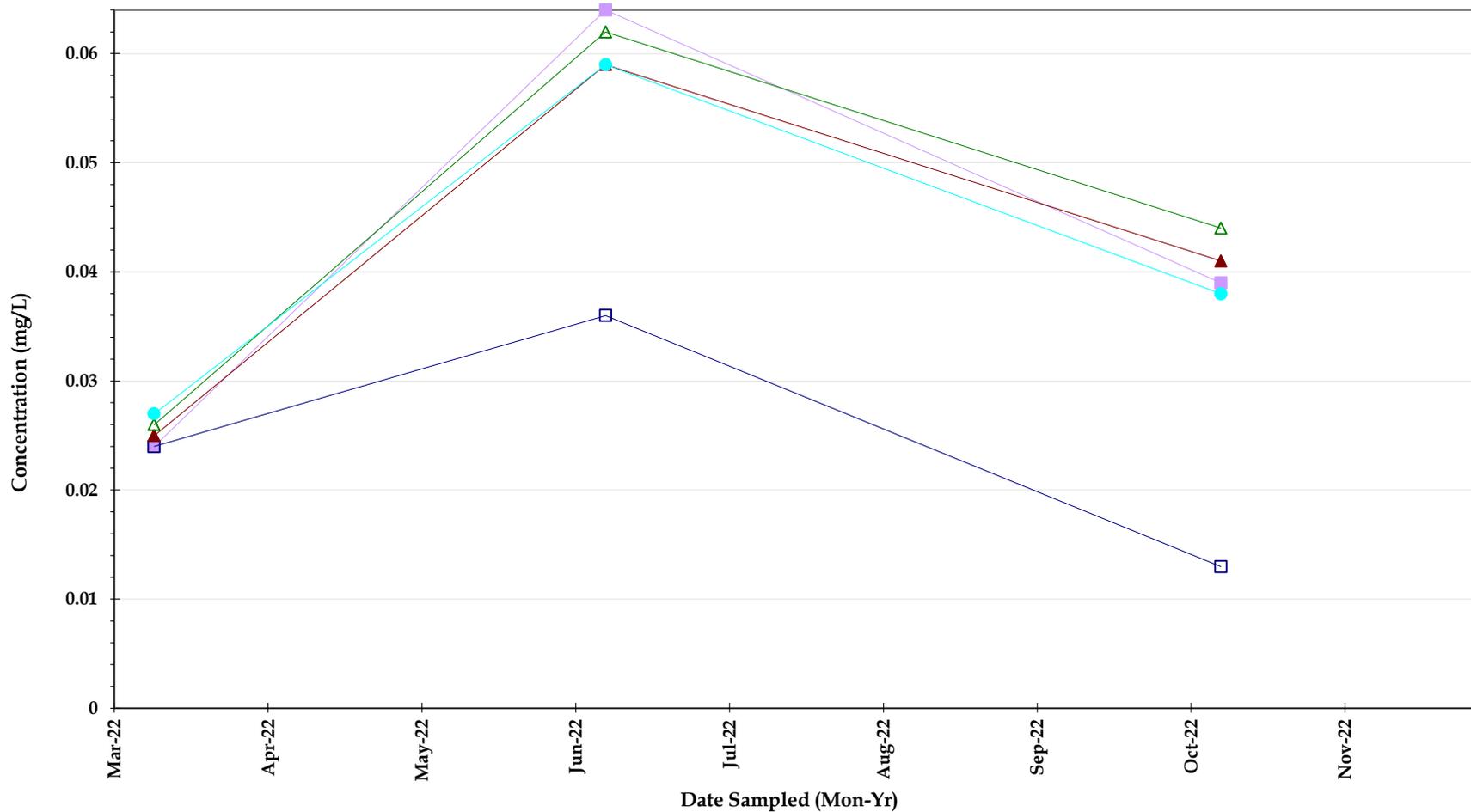
Dissolved Oxygen (%)

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



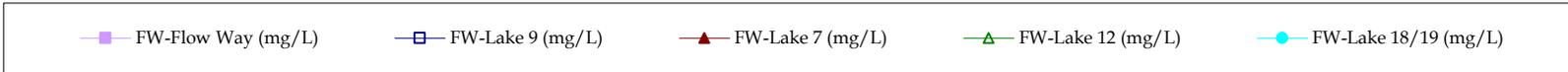
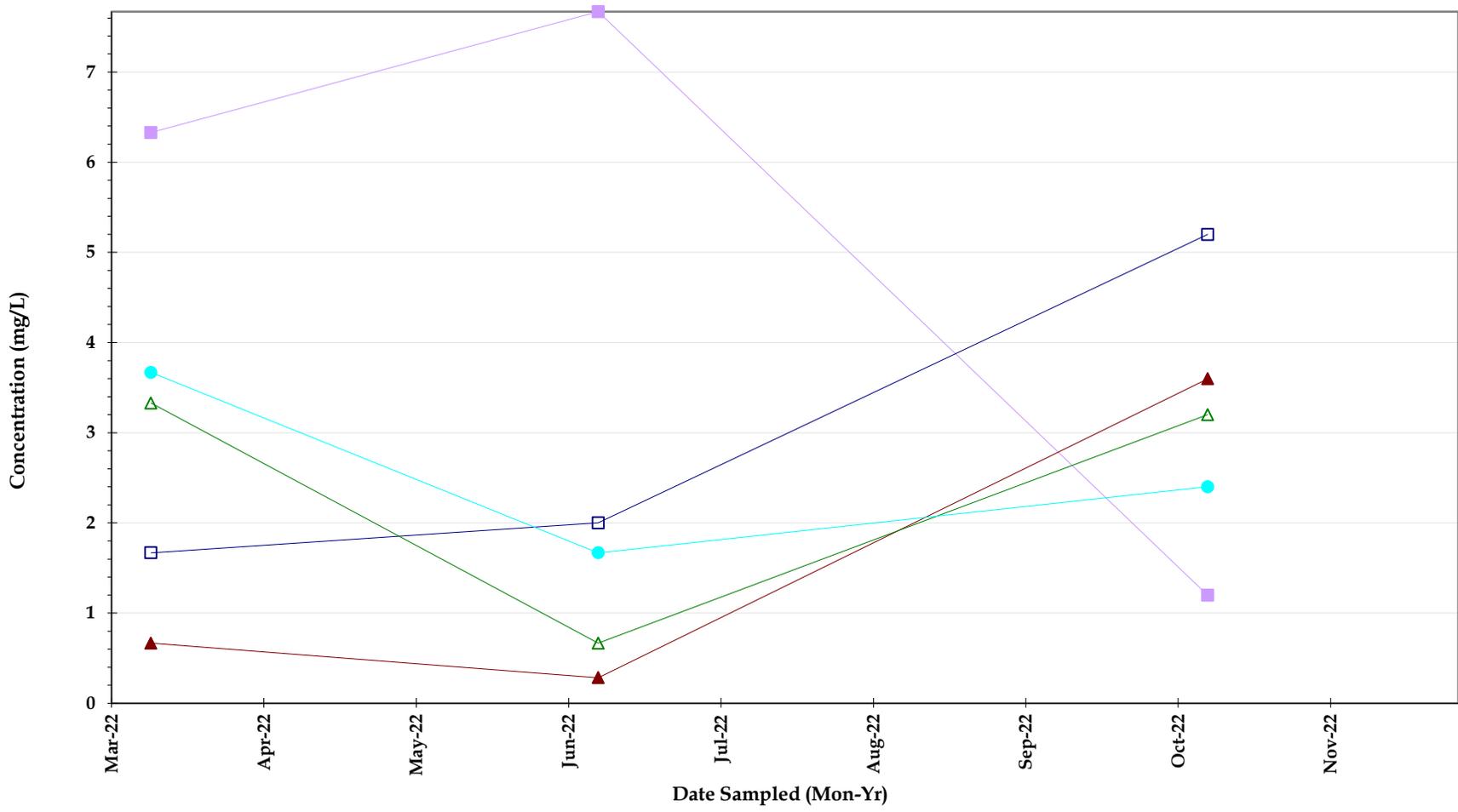
Total Nitrogen

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



Total Phosphorus

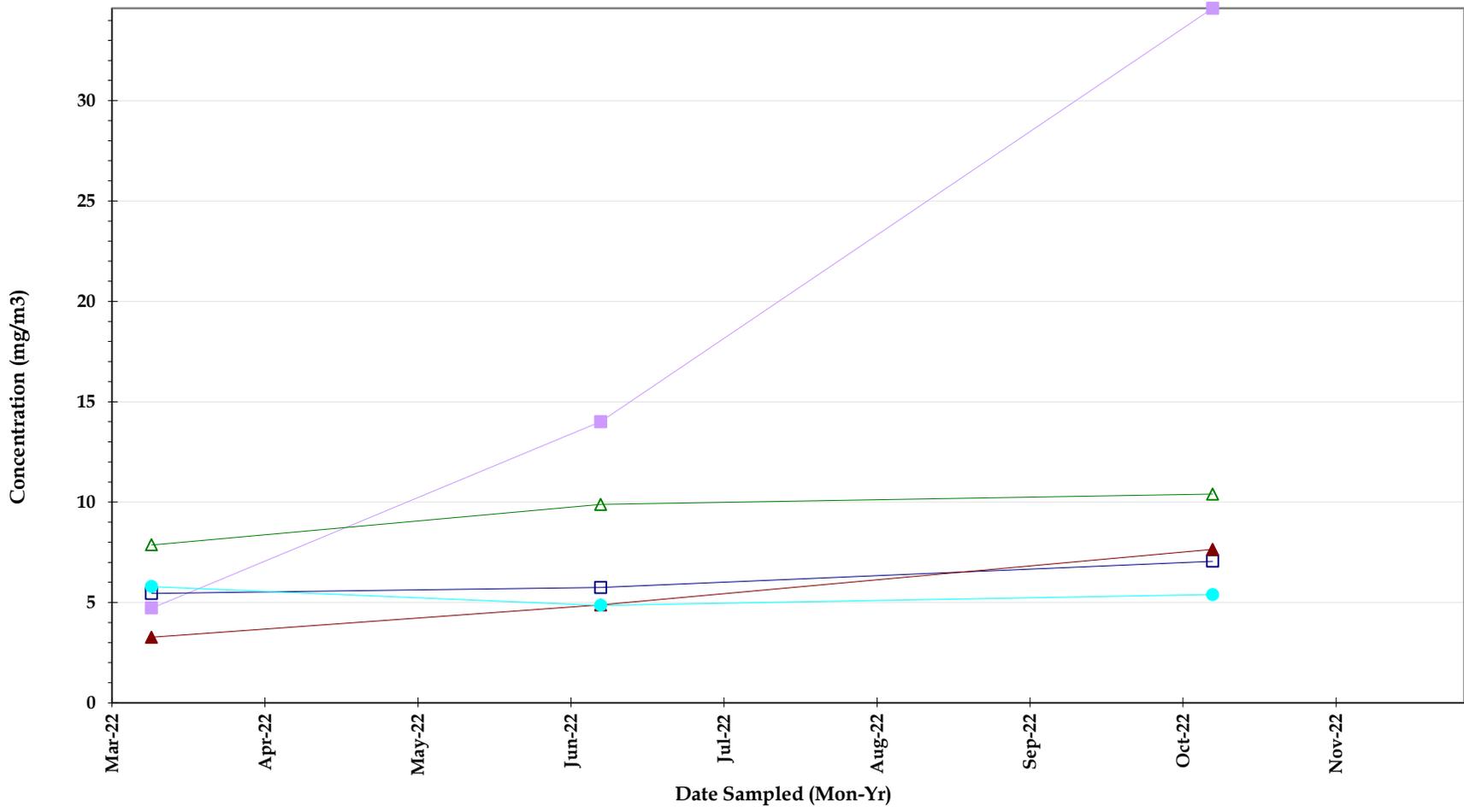
Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



Total Suspended Solids

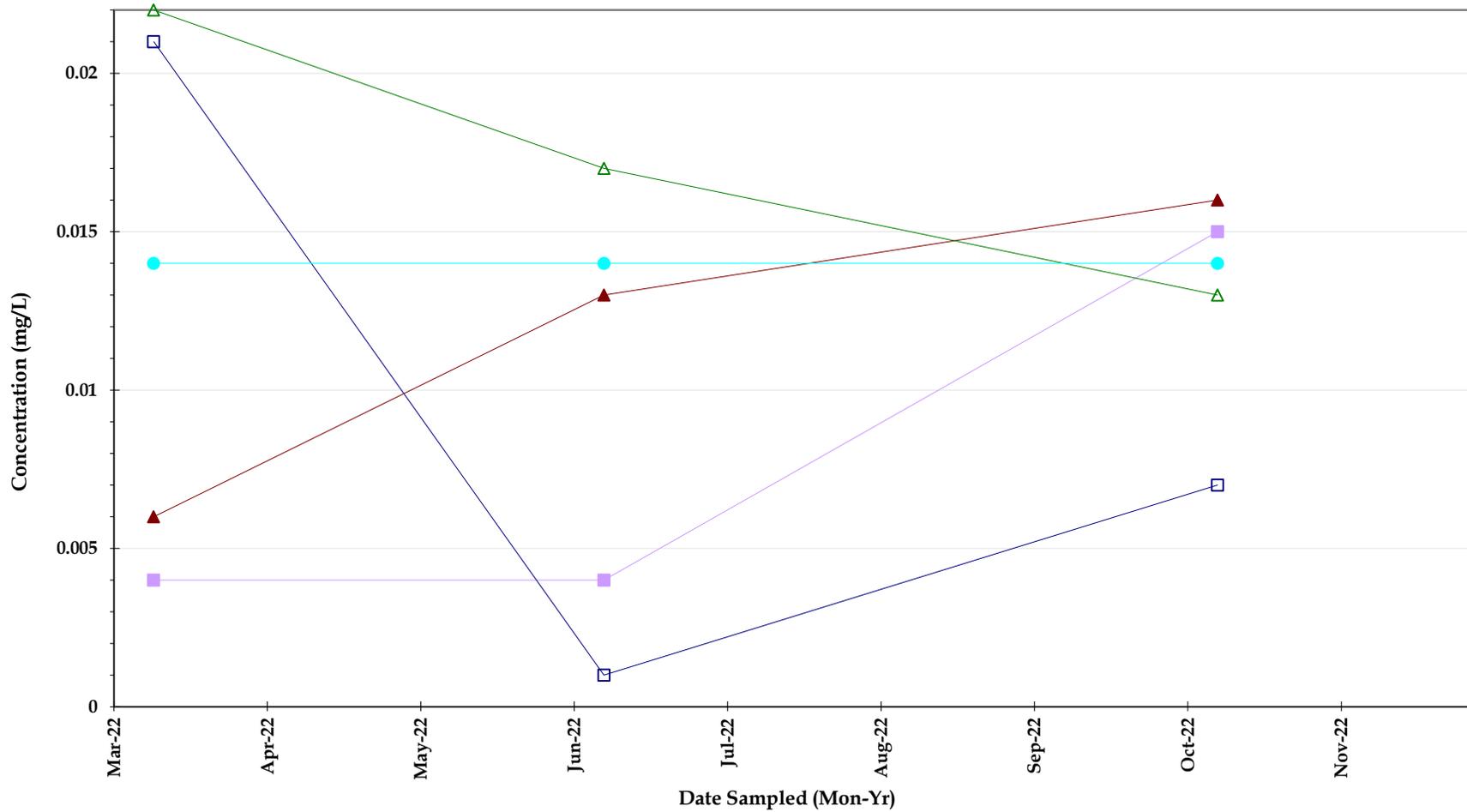


Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



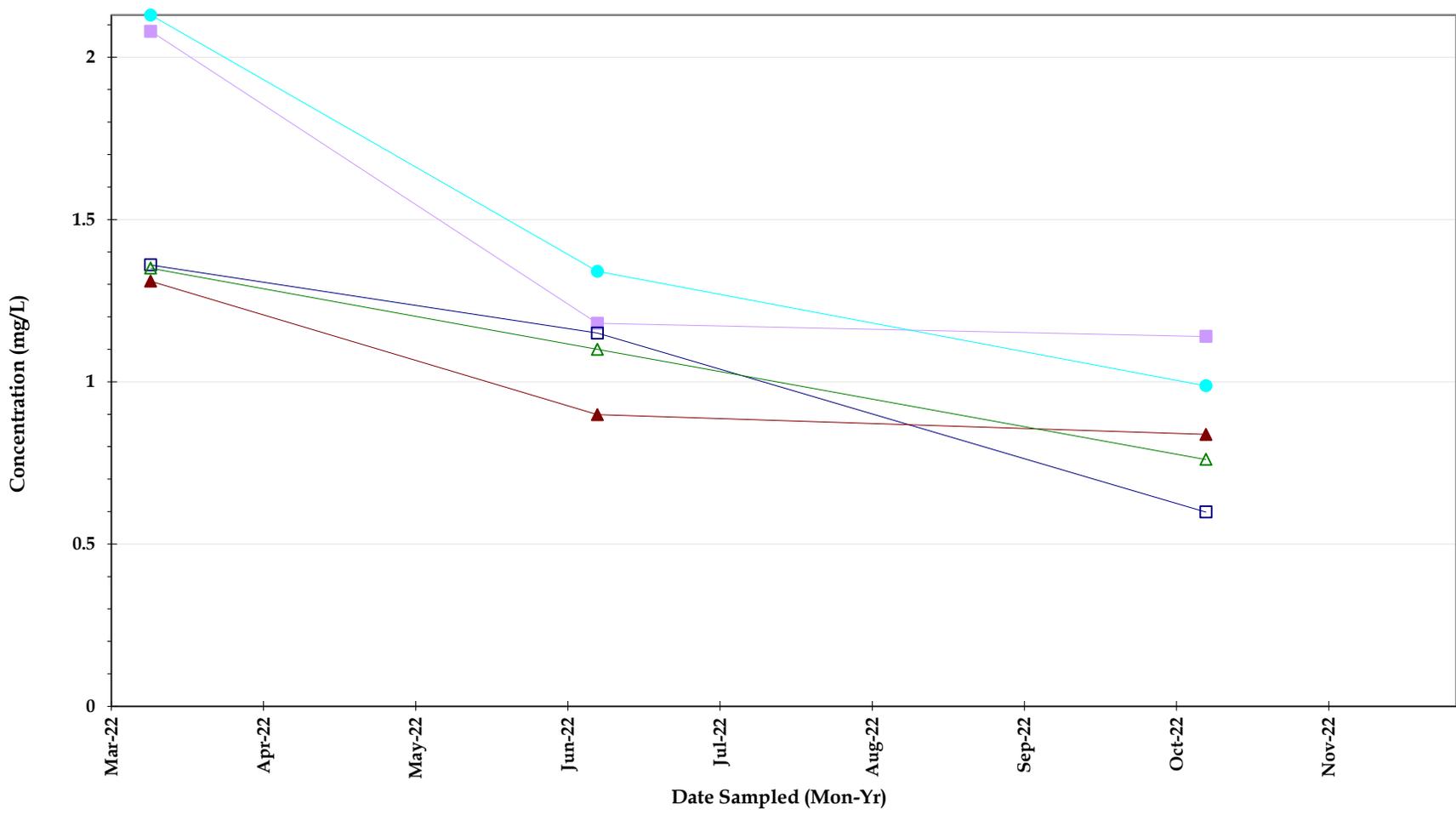
Chlorophyll a

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



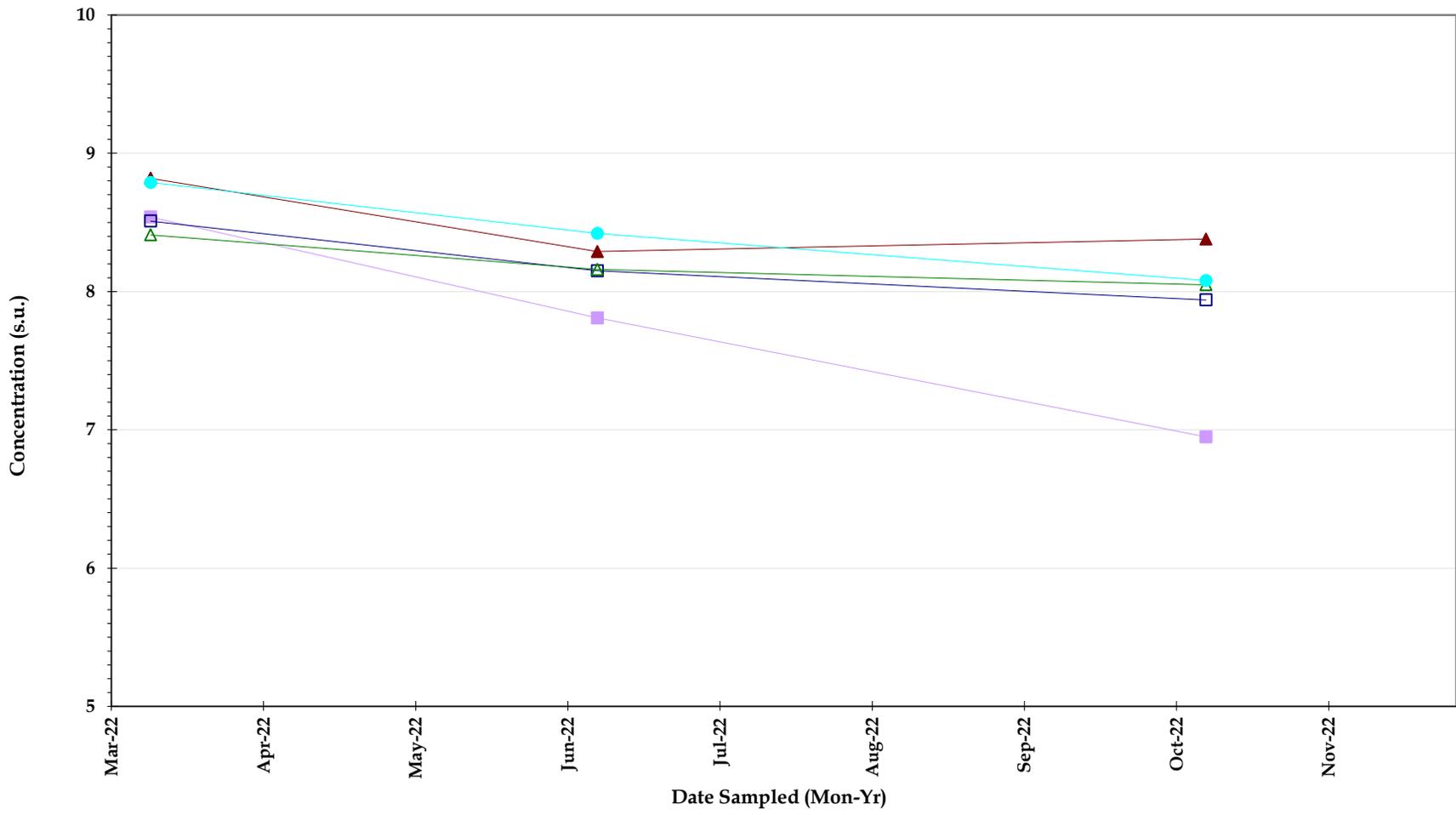
Orthophosphate

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



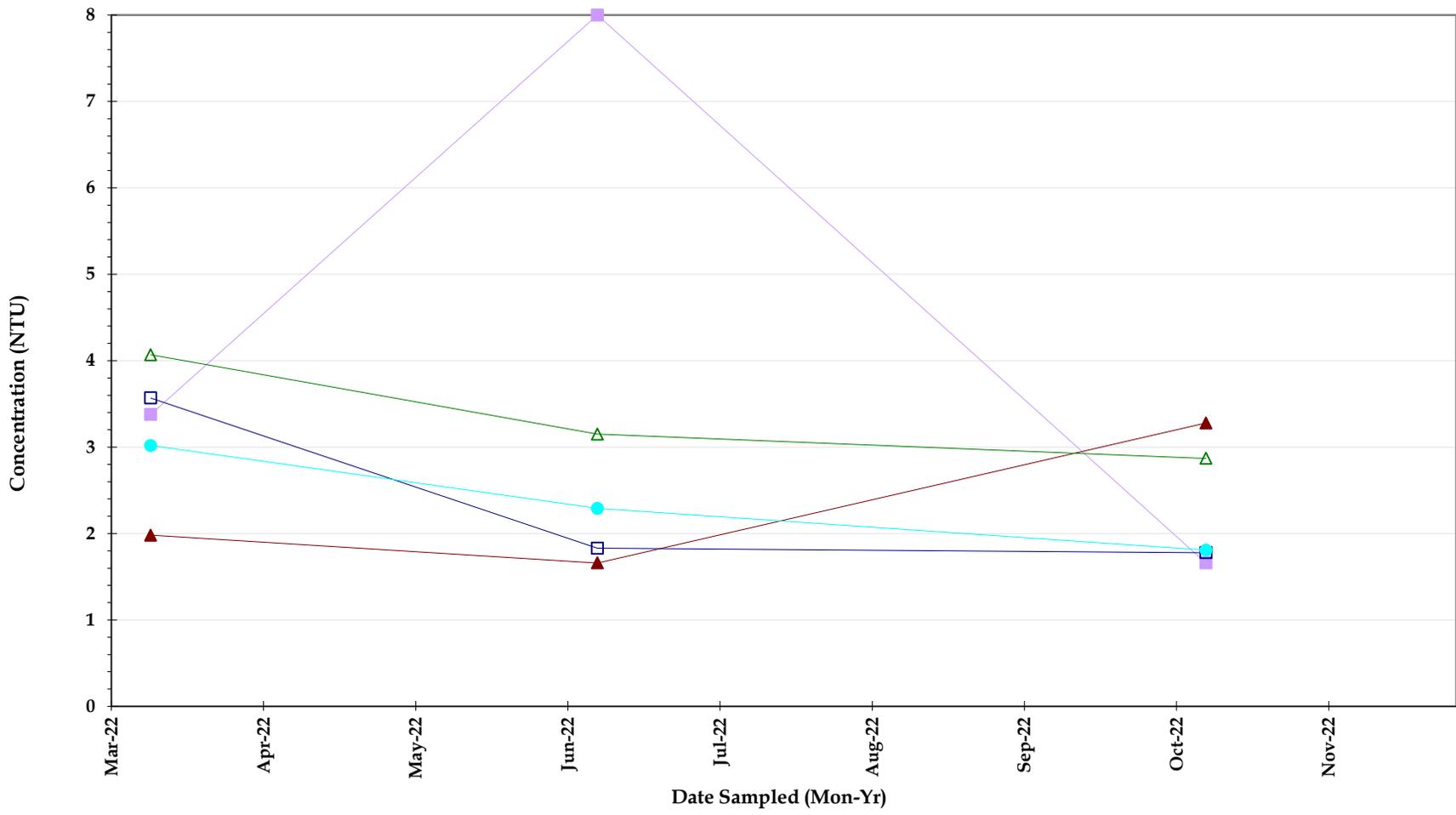
Total kjeldahl nitrogen (TKN)

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



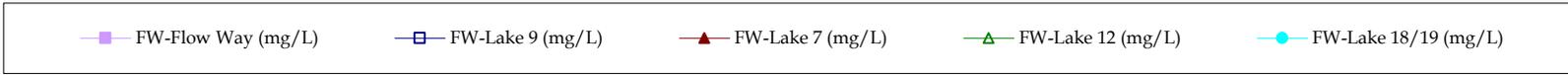
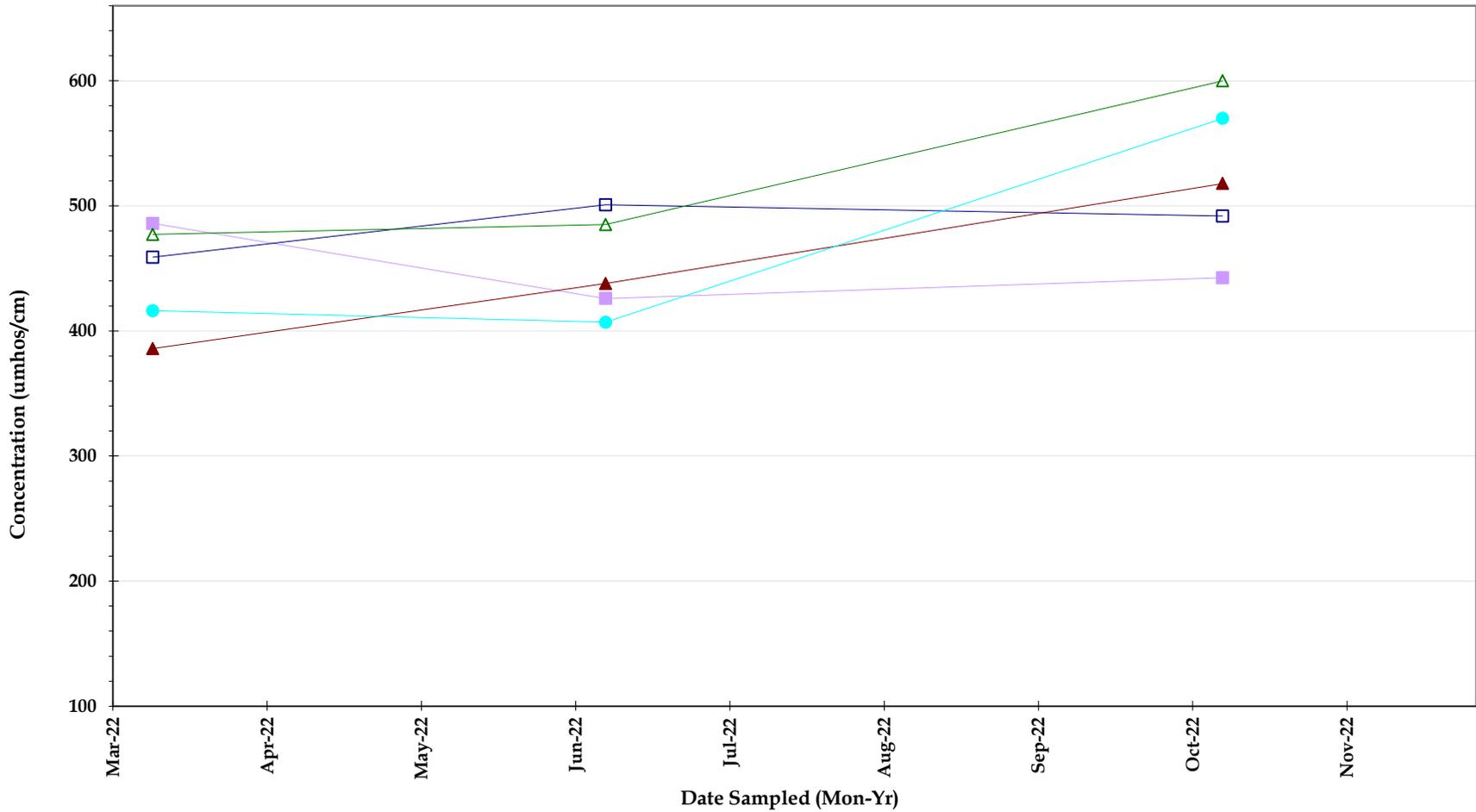
pH, Field

Flow Way
 Water Quality Surface Water Sample results
 OCTOBER 2022



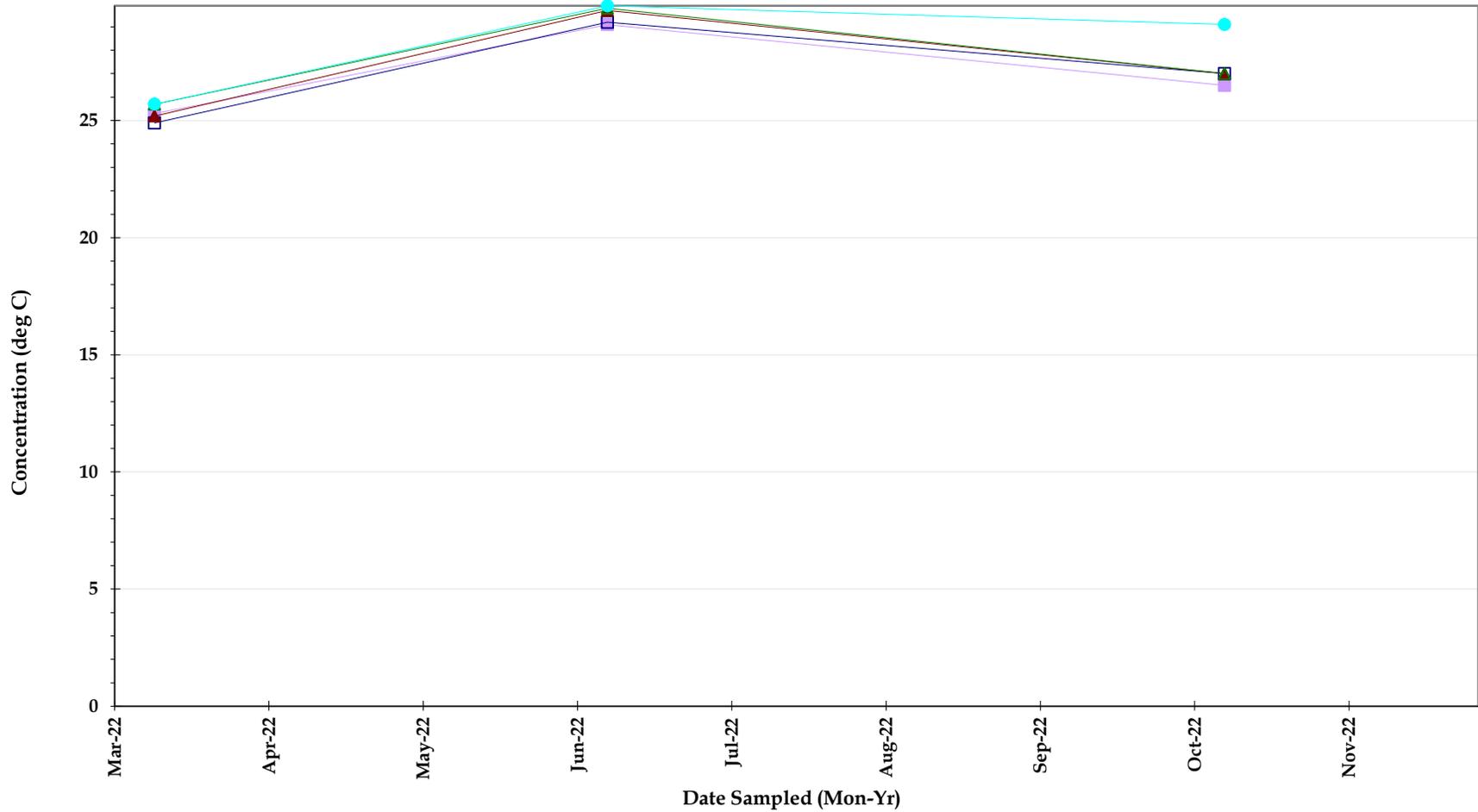
Turbidity

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



Conductivity

Flow Way
Water Quality Surface Water Sample results
OCTOBER 2022



Temperature, sample

Flow Way
 Water Quality Surface Water Sample results
 OCTOBER 2022

Laboratory Analytical Report

ANALYTICAL TEST REPORT
THESE RESULTS MEET NELAC STANDARDS

Submission Number : 22100829

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

Project Name : FLOW WAY CDD WQM

Date Received : 10/11/2022

Time Received : 14:15

Submission Number: 22100829
Sample Number: 001
Sample Description: FW - Flow WaySample Date: 10/10/2022
Sample Time: 09:50
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.088	MG/L	0.008	0.032	350.1	10/18/2022 13:05	EO
TOTAL KJELDAHL NITROGEN	1.14	MG/L	0.05	0.20	351.2	10/13/2022 10:07	EO
ORTHO PHOSPHORUS AS P	0.016	MG/L	0.002	0.008	365.3	10/12/2022 09:43	YQ
TOTAL PHOSPHORUS AS P	0.039	MG/L	0.008	0.032	365.3	10/13/2022 12:38	YQ
CHLOROPHYLL A	34.6	MG/M3	0.25	1.00	445.0	10/20/2022 15:32	PN/CH
TOTAL SUSPENDED SOLIDS	1.20	MG/L	0.570	2.280	SM2540D	10/12/2022 17:27	MN/TG
BIOCHEMICAL OXYGEN DEMAND	1.08	MG/L	1	4	SM5210B	10/11/2022 17:07	EJ/LD
NITRATE+NITRITE AS N	0.010	MG/L	0.006	0.024	SYSTEAS EASY	10/23/2022 15:02	MV
TOTAL NITROGEN	1.15	MG/L	0.05	0.20	SYSTEAS+351	10/23/2022 15:02	EO/MV

Submission Number: 22100829
Sample Number: 002
Sample Description: FW - Lake 9Sample Date: 10/10/2022
Sample Time: 10:05
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.013	MG/L	0.008	0.032	350.1	10/18/2022 16:20	EO
TOTAL KJELDAHL NITROGEN	0.599	MG/L	0.05	0.20	351.2	10/13/2022 10:08	EO
ORTHO PHOSPHORUS AS P	0.007	MG/L	0.002	0.008	365.3	10/12/2022 09:49	YQ
TOTAL PHOSPHORUS AS P	0.013	MG/L	0.008	0.032	365.3	10/13/2022 10:49	YQ
CHLOROPHYLL A	7.06	MG/M3	0.25	1.00	445.0	10/20/2022 15:32	PN/CH
TOTAL SUSPENDED SOLIDS	5.20	MG/L	0.570	2.280	SM2540D	10/12/2022 17:27	MN/TG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/11/2022 17:07	EJ/LD
NITRATE+NITRITE AS N	0.011	MG/L	0.006	0.024	SYSTEAS EASY	10/23/2022 15:03	MV
TOTAL NITROGEN	0.610	MG/L	0.05	0.20	SYSTEAS+351	10/23/2022 15:03	EO/MV

Submission Number: 22100829
Sample Number: 003
Sample Description: FW - Lake 7

Sample Date: 10/10/2022
Sample Time: 10:20
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.014	MG/L	0.008	0.032	350.1	10/18/2022 16:22	EO
TOTAL KJELDAHL NITROGEN	0.838	MG/L	0.05	0.20	351.2	10/13/2022 10:10	EO
ORTHO PHOSPHORUS AS P	0.016	MG/L	0.002	0.008	365.3	10/12/2022 09:50	YQ
TOTAL PHOSPHORUS AS P	0.041	MG/L	0.008	0.032	365.3	10/13/2022 12:39	YQ
CHLOROPHYLL A	7.65	MG/M3	0.25	1.00	445.0	10/20/2022 15:32	PN/CH
TOTAL SUSPENDED SOLIDS	3.60	MG/L	0.570	2.280	SM2540D	10/12/2022 17:27	MN/TG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/11/2022 17:07	EJ/LD
NITRATE+NITRITE AS N	0.009	MG/L	0.006	0.024	SYSTEAS EASY	10/23/2022 15:04	MV
TOTAL NITROGEN	0.847	MG/L	0.05	0.20	SYSTEAS+351	10/23/2022 15:04	EO/MV

Submission Number: 22100829
Sample Number: 004
Sample Description: FW - Lake 12

Sample Date: 10/10/2022
Sample Time: 10:30
Sample Method: Grab

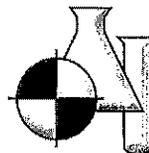
Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.046	MG/L	0.008	0.032	350.1	10/18/2022 16:24	EO
TOTAL KJELDAHL NITROGEN	0.761	MG/L	0.05	0.20	351.2	10/13/2022 10:11	EO
ORTHO PHOSPHORUS AS P	0.013	MG/L	0.002	0.008	365.3	10/12/2022 09:51	YQ
TOTAL PHOSPHORUS AS P	0.044	MG/L	0.008	0.032	365.3	10/13/2022 12:40	YQ
CHLOROPHYLL A	10.4	MG/M3	0.25	1.00	445.0	10/20/2022 15:32	PN/CH
TOTAL SUSPENDED SOLIDS	3.20	MG/L	0.570	2.280	SM2540D	10/12/2022 17:27	MN/TG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/11/2022 17:07	EJ/LD
NITRATE+NITRITE AS N	0.196	MG/L	0.006	0.024	SYSTEAS EASY	10/23/2022 15:07	MV
TOTAL NITROGEN	0.957	MG/L	0.05	0.20	SYSTEAS+351	10/23/2022 15:07	EO/MV

Submission Number: 22100829
Sample Number: 005
Sample Description: FW - Lake 18/19

Sample Date: 10/10/2022
Sample Time: 10:50
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.181	MG/L	0.008	0.032	350.1	10/18/2022 16:26	EO
TOTAL KJELDAHL NITROGEN	0.988	MG/L	0.05	0.20	351.2	10/13/2022 10:13	EO
ORTHO PHOSPHORUS AS P	0.014	MG/L	0.002	0.008	365.3	10/12/2022 09:53	YQ
TOTAL PHOSPHORUS AS P	0.038	MG/L	0.008	0.032	365.3	10/13/2022 12:41	YQ
CHLOROPHYLL A	5.39	MG/M3	0.25	1.00	445.0	10/20/2022 15:32	PN/CH
TOTAL SUSPENDED SOLIDS	2.40	MG/L	0.570	2.280	SM2540D	10/12/2022 17:27	MN/TG
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	10/11/2022 17:07	EJ/LD

BENCHMARK



FDOH Certification #E84167

EnviroAnalytical, Inc.

NITRATE+NITRITE AS N	0.014 I	MG/L	0.006	0.024	SYSTEAS EASY	10/23/2022 15:09	MV
TOTAL NITROGEN	1.00	MG/L	0.05	0.20	SYSTEAS+351	10/23/2022 15:09	EO/MV

Haley Rin

Dale D. Dixon Laboratory Director

10/27/2022

Date

Tülay Tarrisever - Technical Director/QC Officer

Haley Richardson - 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 was filtered at E85086 10/11/22 0855

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 #258

Client: GHD Services, Inc. (HSA ENG)
 2675 Winkler Ave. Suite 180
 Ft. Myers FL 33901
 Shannon Tucker 239-210-8653
 Erik Isern (239) 215-3914
 Email EDD & PDF Reports to: Connor.Haydon@ghd.com
 2022 PO# 340-004533

Kit Shipped to client via UPS Standard in 1 large cooler

Chain of Custody Form: Flow Way CDD WQM
 Project Number: 11225022-03

Profile: 840, QC Report

Laboratory Submission #: *22100829*

Station ID	Sample Type ¹	Sample Matrix ²	Parameters, Preservative ³ , Container Type ³ / Total # of Containers = 25				Laboratory Submission #
			Unique bottle ID 1A	Unique bottle ID 1B	Unique bottle ID 1C	Unique bottle ID 1E	
<i>FW - Flow Way</i>	Grab	SW	NO ₃ -NO ₂ (533.2) TKN (51.2) NH ₃ (550.1) TP (565.3) F-N (Calc.)	BOD5 (5652.103)	Ortho-Phos (Lab Filtered) (565.3)	TSS (562540D)	Chlorophyll a (445.0) <i>Filtered @ BEAS</i> <i>10/11/22 0855</i>
			1.1mL 1:4 H ₂ SO ₄ pH<2 □ Lot # 22-16	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
<i>FW - Flow Way</i>	Grab	SW	<i>10/10/22 0950</i>				<i>1</i>
<i>FW - Lake 9</i>	Grab	SW	<i>10/10/22 1005</i>				<i>2</i>
<i>FW - Lake 7</i>	Grab	SW	<i>10/10/22 1020</i>				<i>3</i>
<i>FW - Lake 12</i>	Grab	SW	<i>10/10/22 1030</i>				<i>4</i>
<i>FW - Lake 18/19</i>	Grab	SW	<i>10/10/22 1050</i>				<i>5</i>

Notes:

- "Sample Type" is used to indicate whether the sample was a grab (G) or whether it was a composite (C).
- "Sample Matrix" is used to indicate whether the sample is being discharged to drinking water (DW), groundwater (GW), surface water (SW), saline surface water (SSW), soil, sediment (SDMNT), or sludge (SLDG).
- "Container Type" is used to indicate whether the container is plastic (P) or glass (G).
- Sample must be refrigerated or stored in wet ice after collection. The temperature during storage should be less than or equal to 6°C (42.8°F).
- Under "Preservative" list any preservatives that were added to the sample container. Lot Number of preservative used is specific to the bottles included in the kit. NaFho, H₂SO₄, and ENO, do not have expiration dates per the manufacturer. Micro bottles are pre-preserved at manufacturing stage. 40mL vials are pre-preserved at manufacturing stage.
- 2 Quart plastic bottles are not certified.

- Instructions:
- Each bottle has a label identifying sample ID, premeasured preservative contained in the bottle, sample type, client ID, and parameters for analysis.
 - 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.
 - All bottles not containing preservative may be rinsed with appropriate sample prior to collection.
 - The client is responsible for documentation of the sampling event. Please note special sampling events on the sample custody form.
 - Sample kit has been created by BEA using new, certified bottles unless otherwise noted.

Laboratory Sample Acceptability:
 pH < 2 : U(BEA Temperature: 0.9°C)
 BEAS Temperature: 3.2°C

Collector & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
<i>Jessica Watson</i> Brookline Watermill BEAS	<i>10/10/22</i>	<i>10:44</i>	<i>Brookline Watermill</i> BEAS	<i>10/10/22</i>	<i>1344</i>
Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
			<i>Brookline Watermill</i> BEAS	<i>10/11/22</i>	<i>1145</i>
Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
			<i>Brookline Watermill</i> BEAS	<i>10/11/22</i>	<i>1415</i>
Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
			<i>Brookline Watermill</i> BEAS	<i>10/11/22</i>	<i>1415</i>
Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
			<i>Brookline Watermill</i> BEAS	<i>10/11/22</i>	<i>1415</i>
Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
			<i>Brookline Watermill</i> BEAS	<i>10/11/22</i>	<i>1415</i>

PSC 4004



BENCHMARK

EnviroAnalytical, Inc.

NELAP Certification #E84167

Submission Number: 22100829

Project Name: FLOW WAY CDD WQM

QC REPORT

SUBMISSION NUMBER	SAMPLE NUMBER	METHOD	ANALYTE	ANALYSIS DATE/TIME	QC FLAG	QC VALUE	SAMPLE RESULT	LR RESULT	LR %RSD	SPK RESULT	STD-SPK %REC
22100915 - 003	662650	350.1	AMMONIA NITROGEN	10/18/2022 18:54	LR	0.638	0.621	1.88			
		350.1	AMMONIA NITROGEN	10/18/2022 08:30	MB	0.00					
22101012 - 010	662758	350.1	AMMONIA NITROGEN	10/18/2022 18:51	SPK	1.00	1.180			1.160	97.7
		350.1	AMMONIA NITROGEN	10/18/2022 11:25	STD	1.00	0.956				95.6
22100911 - 003	662636	351.2	TOTAL KJELDAHL NITROGEN	10/13/2022 16:16	LR	1.150	1.080	3.99			
		351.2	TOTAL KJELDAHL NITROGEN	10/13/2022 09:35	MB	0.00					
22100904 - 011	662613	351.2	TOTAL KJELDAHL NITROGEN	10/13/2022 16:14	SPK	2.00	4.430			4.560	107.0
		351.2	TOTAL KJELDAHL NITROGEN	10/13/2022 09:38	STD	2.50	2.510				100.0
		351.2	TOTAL KJELDAHL NITROGEN	10/13/2022 09:40	STD	2.00	2.150				108.0
22100532 - 001		365.3	ORTHO PHOSPHORUS AS P	10/11/2022 09:10	LR	0.731	0.742	1.03			
		365.3	ORTHO PHOSPHORUS AS P	10/11/2022 17:08	MB	0.00					
22100827 - 007		365.3	ORTHO PHOSPHORUS AS P	10/11/2022 17:18	SPK	0.20	0.002			0.191	99.0
		365.3	ORTHO PHOSPHORUS AS P	10/11/2022 12:57	STD	0.20	0.194				
22100829 - 001		365.3	TOTAL PHOSPHORUS AS P	10/13/2022 12:38	LR	0.039	0.041	3.53			
		365.3	TOTAL PHOSPHORUS AS P	10/13/2022 10:09	MB	0.00					
22100835 - 002		365.3	TOTAL PHOSPHORUS AS P	10/13/2022 12:34	SPK	0.20	0.520			0.730	105.0
		365.3	TOTAL PHOSPHORUS AS P	10/13/2022 10:12	STD	0.20	0.182				91.0
22100770 - 001	662420	445.0	CHLOROPHYLL A	10/20/2022 15:32	LR	1.151	1.080	4.43			
22101038 - 001	662806	SM2540D	TOTAL SUSPENDED SOLIDS	10/12/2022 17:27	LR	1573.333	1586.670	0.60			
		SM2540D	TOTAL SUSPENDED SOLIDS	10/12/2022 17:27	MB	0.00					
		SM2540D	TOTAL SUSPENDED SOLIDS	10/12/2022 17:27	STD	951.00	924.000				97.2
		SM5210B	BIOCHEMICAL OXYGEN DEMAND	10/11/2022 17:07	MB	0.00					
		SM5210B	BIOCHEMICAL OXYGEN DEMAND	10/11/2022 17:07	STD	196.00	200.450				101.2
22101113 - 010	662878	SYSTEAS EASY	NITRATE+NITRITE AS N	10/23/2022 18:30	LR	0.198	0.201	0.78			
		SYSTEAS EASY	NITRATE+NITRITE AS N	10/23/2022 14:26	MB	0.00					

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

SUBMISSION NUMBER	SAMPLE NUMBER	METHOD	ANALYTE	ANALYSIS DATE/TIME	QC FLAG	QC VALUE	SAMPLE RESULT	LR RESULT	LR %RSD	SPK RESULT	STD-SPK %REC
22101113 - 010	662878	SYSTEAS EASY	NITRATE+NITRITE AS N	10/23/2022 18:29	SPK	0.20	0.211			0.198	93.8
		SYSTEAS EASY	NITRATE+NITRITE AS N	10/23/2022 14:27	STD	0.25	0.240				96.1

Comments:

Surface Water Field Sheets

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	<u>FW - Flow Way</u>
LOCATION:	<u>Downstream of Bridge</u>
DATE/TIME:	<u>10/10/22 950</u>
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 type="radio"/> Large Lake (>10HA) (collect samples at selected location point)
	<input checked="" type="radio"/> Small Stream (collect samples in representative area)	<input type="radio"/> Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: <u>NUM</u> (feet) (Average of 2 measurements)	Sample Depth: <u>1.5</u> (feet)
STREAM FLOW: <input type="radio"/> applicable <input type="radio"/> No Flow <input checked="" type="radio"/> Flow within Banks <input type="radio"/> Flood Conditions	
WATER LEVEL: <input type="radio"/> (Circle One) <input type="radio"/> Low <input checked="" type="radio"/> Normal <input type="radio"/> High	
WATER SAMPLE COLLECTION DEVICE (Circle One)	<input type="radio"/> Van Dorn <input checked="" type="radio"/> Direct Grab with Sample Bottle <input type="radio"/> Dipper <input type="radio"/> 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>0950</u>	<u>1.5</u>	<u>6.95</u>	<u>4.75</u>	<u>57.5</u>	<u>26.5</u>	<u>442.5</u>	<u>1.66</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:

Samples immediately placed on ice?

Yes No

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

PERSONNEL ON SITE: Justin LeBlanc, Connor Haydon, Jessie Walsh

REMARKS: Overcast clouds

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	FW-Lake 9
LOCATION:	OFF OF east bank 1005
DATE/TIME:	10/10/22 1005
ALL TIMES ARE:	<input checked="" type="radio"/> ETZ or <input type="radio"/> CTZ (circle one)

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

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements) (Circle One if applicable)	nm	(feet)	Sample Depth:	1.5	(feet)
STREAM FLOW:	<input checked="" type="radio"/> No Flow	<input type="radio"/> Flow within Banks	<input type="radio"/> Flood Conditions		
WATER LEVEL: (Circle One)	<input type="radio"/> Low	<input checked="" type="radio"/> Normal	<input type="radio"/> High		
WATER SAMPLE COLLECTION DEVICE (Circle One)	<input type="radio"/> Van Dorn	<input checked="" 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)
1005	1.5	7.94	4.11	52.3	27.04	492	1.78
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:

Samples immediately placed on ice?

Yes No

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

PERSONNEL ON SITE: JL, JW, CH

REMARKS: Overcast clouds

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	Flu-Lake 7
LOCATION:	OFF OF east bank 1020
DATE/TIME:	10/10/22 1020
ALL TIMES ARE:	<input checked="" type="radio"/> ETZ or <input type="radio"/> CTZ (circle one)

WATERBODY TYPE:	<input type="radio"/> Small Lake (>4 and <10HA) (Circle One) (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)	<u>NUM</u> (feet)	Sample Depth:	<u>1.5</u> (feet)
STREAM FLOW:	<input type="radio"/> applicable (Circle One if)	<input checked="" type="radio"/> No Flow	<input type="radio"/> Flow within Banks
WATER LEVEL:	<input type="radio"/> Low	<input checked="" type="radio"/> Normal	<input type="radio"/> High
WATER SAMPLE COLLECTION DEVICE (Circle One)	<input type="radio"/> Van Dorn	<input checked="" type="radio"/> Direct Grab with Sample Bottle	<input type="radio"/> Dipper <input type="radio"/> Other _____

Field Measurements
Read By: (initials)

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)
1020	1.5	8.38	6.45	84.0	27.0	518	3.28
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: _____

Samples immediately placed on ice? Yes No

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

PERSONNEL ON SITE: JL, JW, LP

REMARKS: overcast

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	FW-Lake 12
LOCATION:	OFF OF west bank
DATE/TIME:	10/10/22 1030
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

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

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements) (Circle One if applicable)	<u>NUM</u> (feet)	Sample Depth:	<u>1.5</u> (feet)
STREAM FLOW:	<input checked="" type="radio"/> No Flow	<input type="radio"/> Flow within Banks	<input type="radio"/> Flood Conditions
WATER LEVEL:	(Circle One) <input type="radio"/> Low	<input checked="" type="radio"/> Normal	<input type="radio"/> High
WATER SAMPLE COLLECTION DEVICE: (Circle One)	<input type="radio"/> Van Dorn	<input checked="" type="radio"/> Direct Grab with Sample Bottle	<input type="radio"/> 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)
1030	1.5	8.05	5.06	62.6	27.0	600	2.87
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:

Samples immediately placed on ice? Yes No

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

PERSONNEL ON SITE: JL, JW, GP

REMARKS: overcast

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	<u>Flw-Lake 18/19</u>
LOCATION:	<u>From bank</u>
DATE/TIME:	<u>10/10/22 1050</u>
ALL TIMES ARE:	<input checked="" type="radio"/> ETZ or <input type="radio"/> CTZ (circle one)

WATERBODY TYPE: (Circle One)	<input checked="" type="radio"/> Small Lake (>4 and <10HA) (collect samples in middle of open water)	<input 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)	<u>NUM</u> (feet)	Sample Depth:	<u>1.5</u> (feet)
STREAM FLOW: (Circle One if applicable)	<input checked="" type="radio"/> No Flow	<input type="radio"/> Flow within Banks	<input type="radio"/> Flood Conditions
WATER LEVEL: (Circle One)	<input type="radio"/> Low	<input checked="" type="radio"/> Normal	<input type="radio"/> High
WATER SAMPLE COLLECTION DEVICE (Circle One)	<input type="radio"/> Van Dorn	<input checked="" type="radio"/> Direct Grab with Sample Bottle	<input type="radio"/> Dipper Other _____

Field Measurements		Meter ID#		Field Measurements Read By: (initials) <u>JL</u>			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O. (mg./L.)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>1050</u>	<u>1.5</u>	<u>8.08</u>	<u>4.54</u>	<u>57.5</u>	<u>29.1</u>	<u>570</u>	<u>1.81</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: _____

Samples immediately placed on ice? _____

Yes No

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

PERSONNEL ON SITE: JL, JW, CH

REMARKS: overcast