

A photograph of a pond with numerous white water lilies in bloom. The water is dark and reflects the surrounding greenery. In the background, there is a dense forest of tall trees and thick undergrowth. The overall scene is lush and natural.

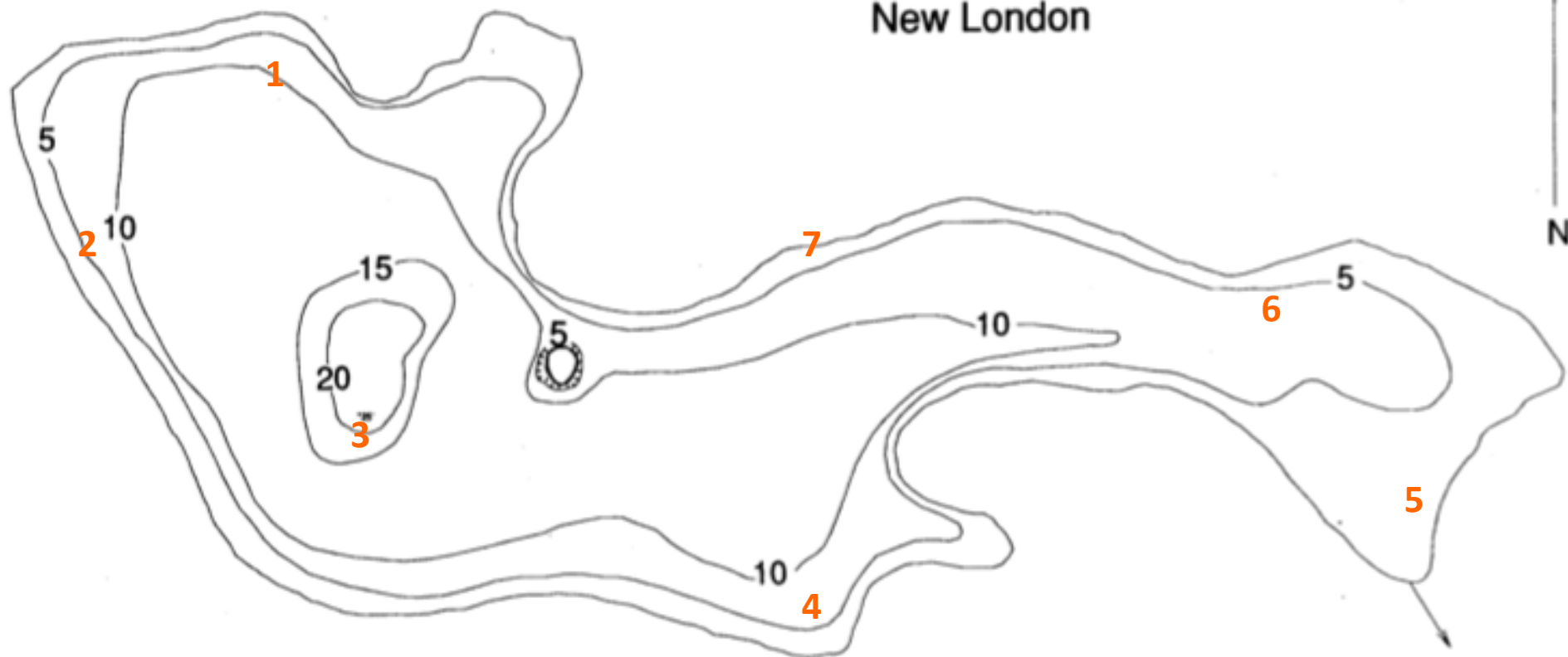
# Exploring the Environmental Chemistry of Messer Pond

Devin Zylack, Aric Lantiegne, and  
Harvey Pine



# Messer Pond

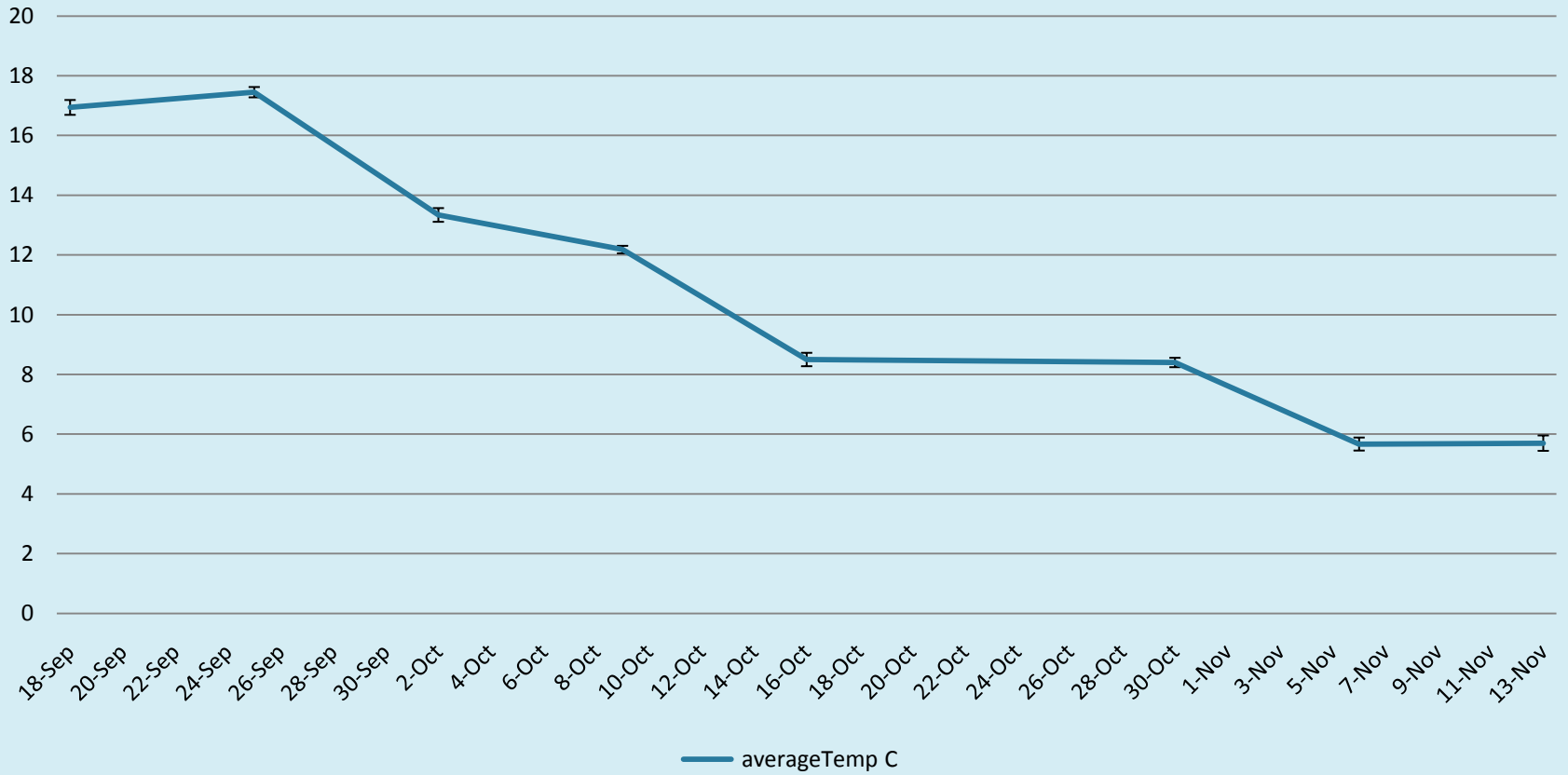
New London





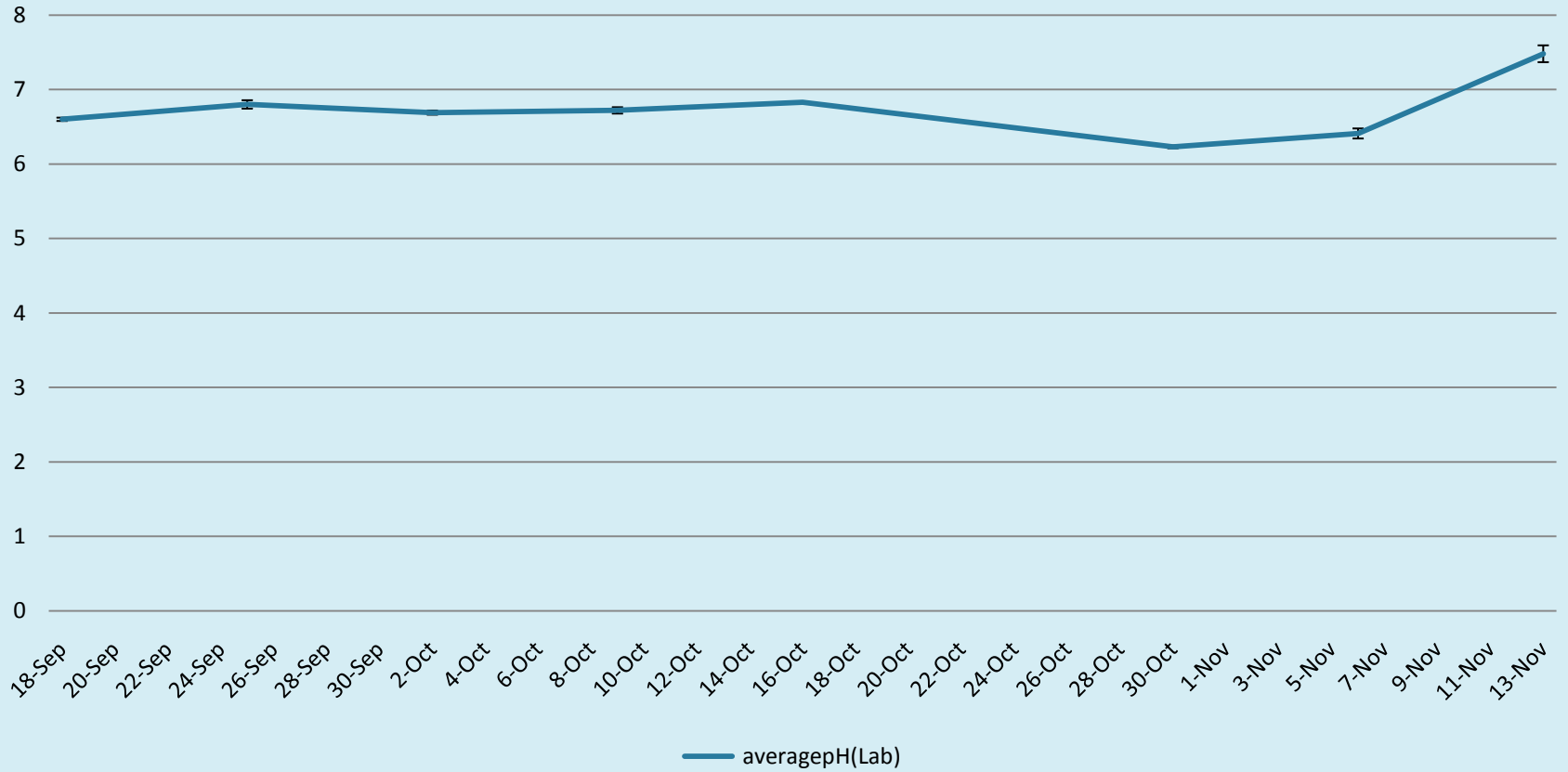
# Temperature

Temperature °C



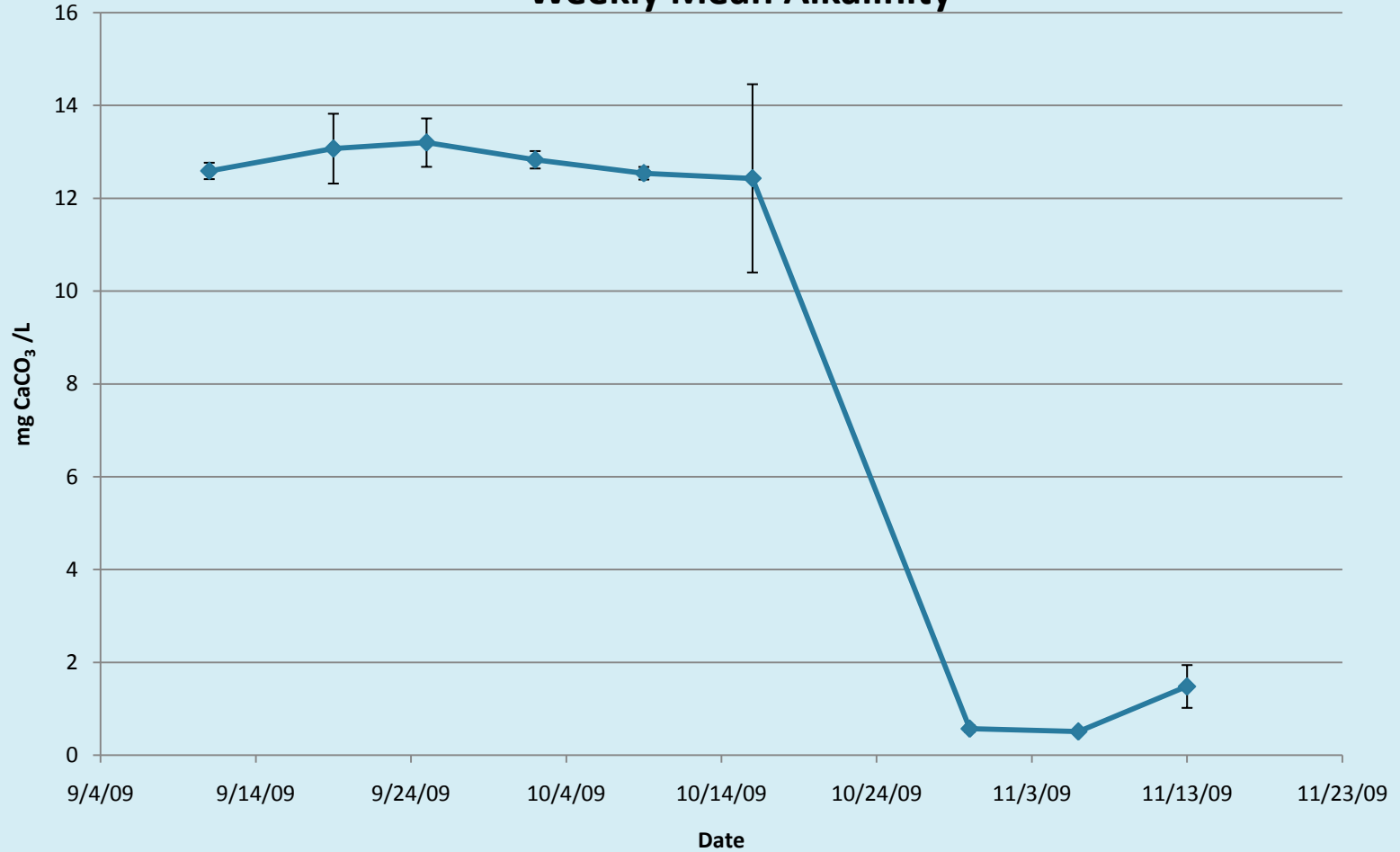
# pH

## pH



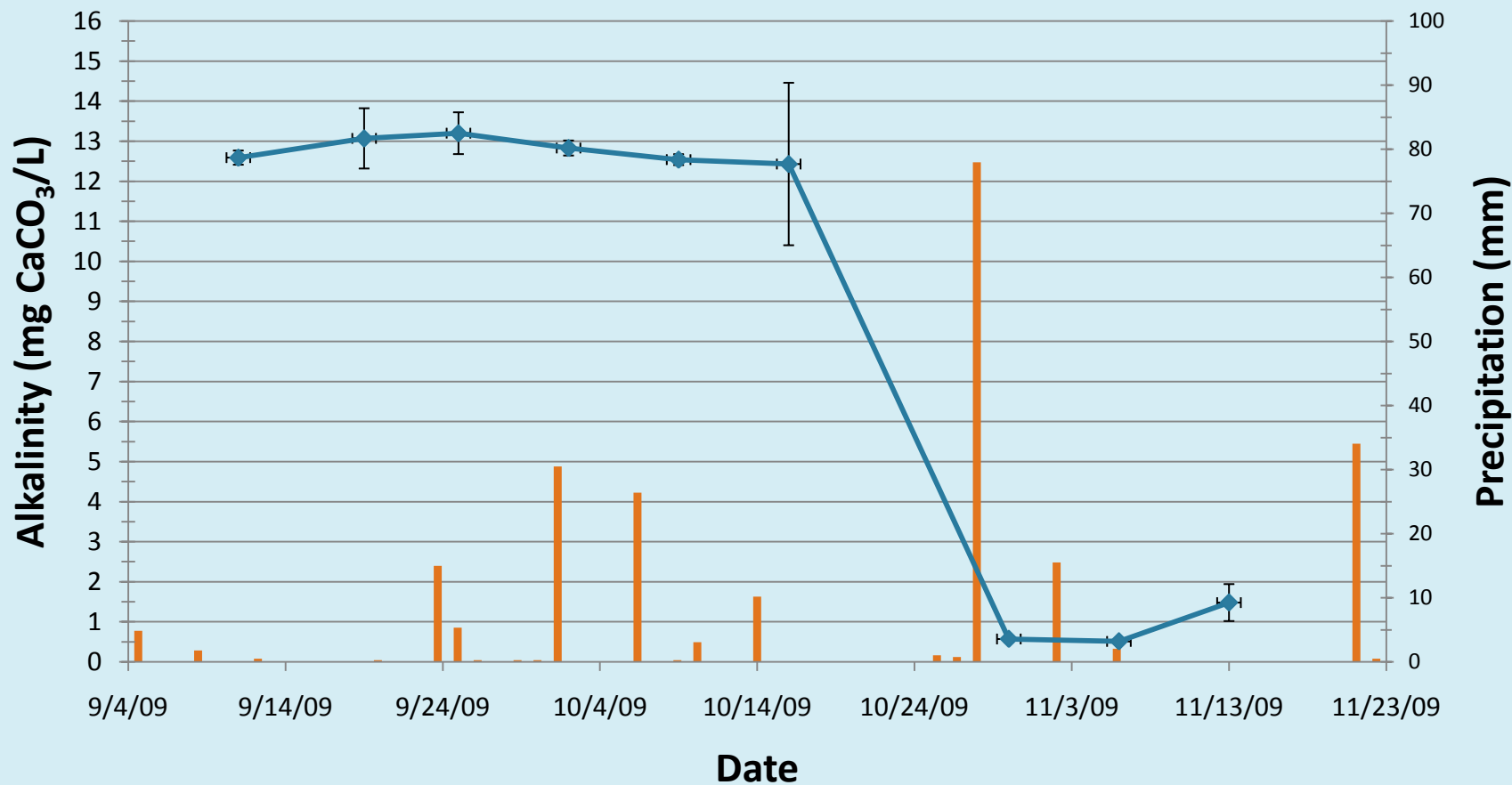
# Alkalinity

## Weekly Mean Alkalinity



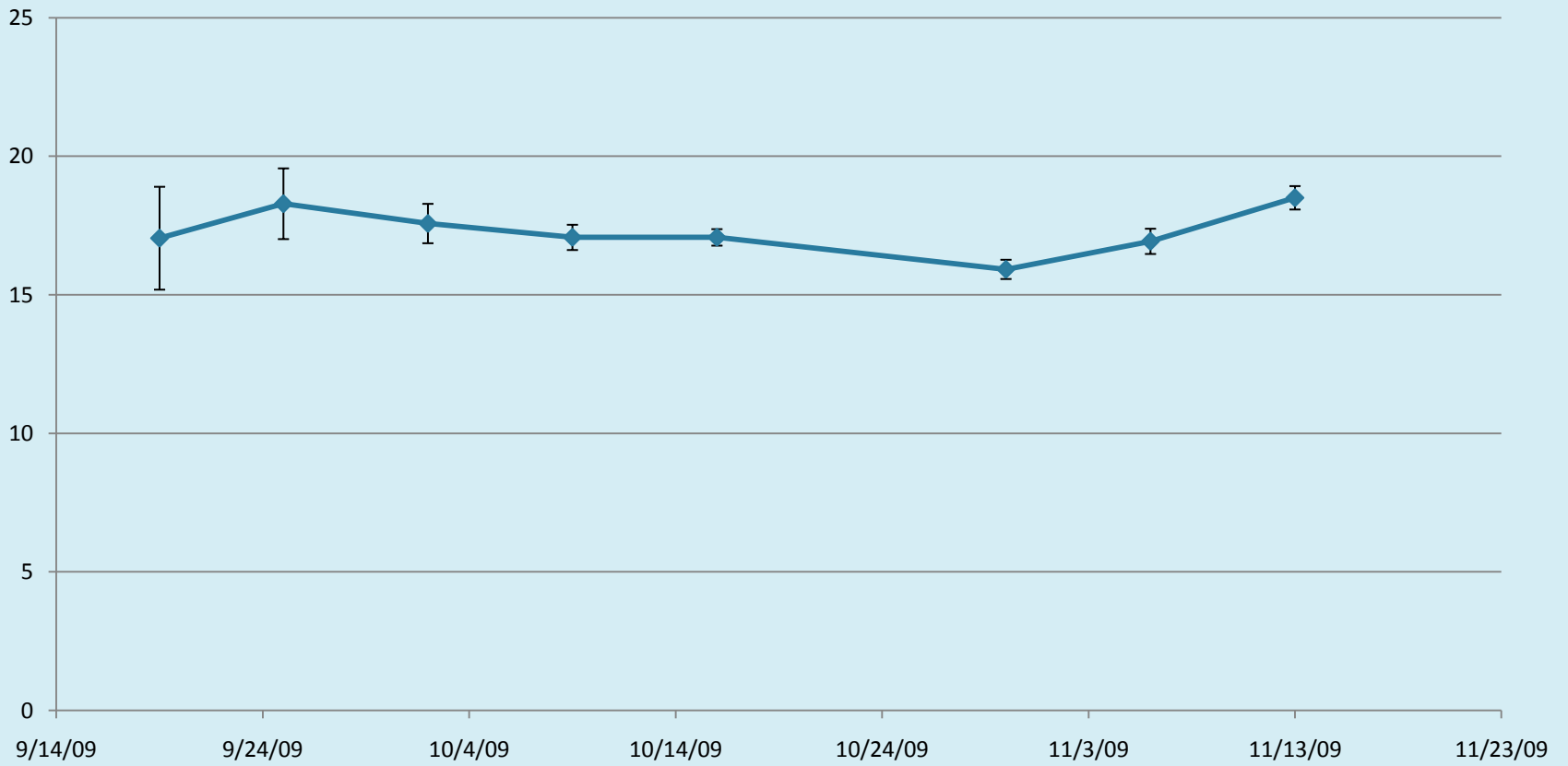
# Alkalinity

## Weekly Average Alkalinity



# Hardness

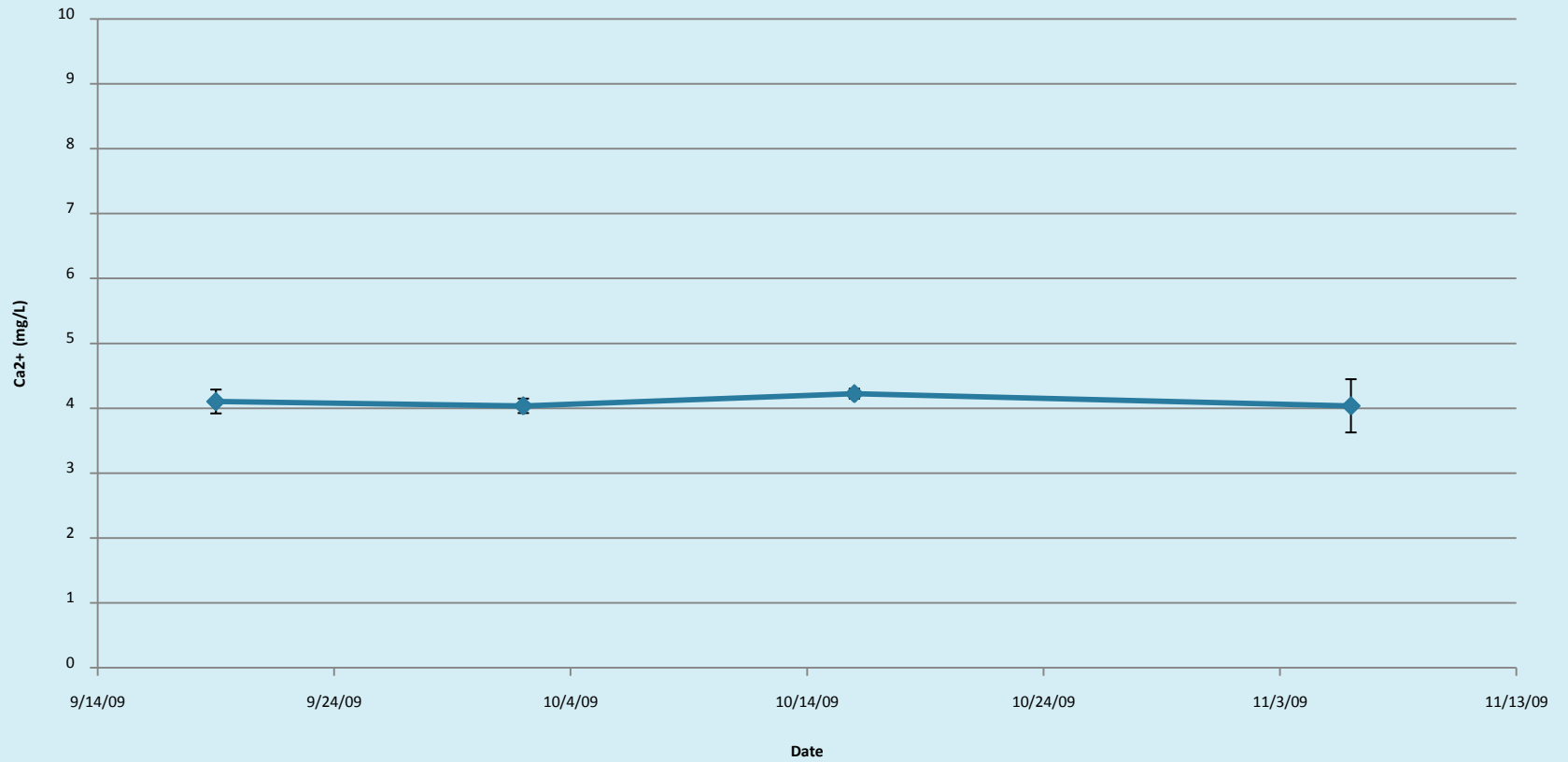
Hardness (CaCO<sub>3</sub> mg/L)





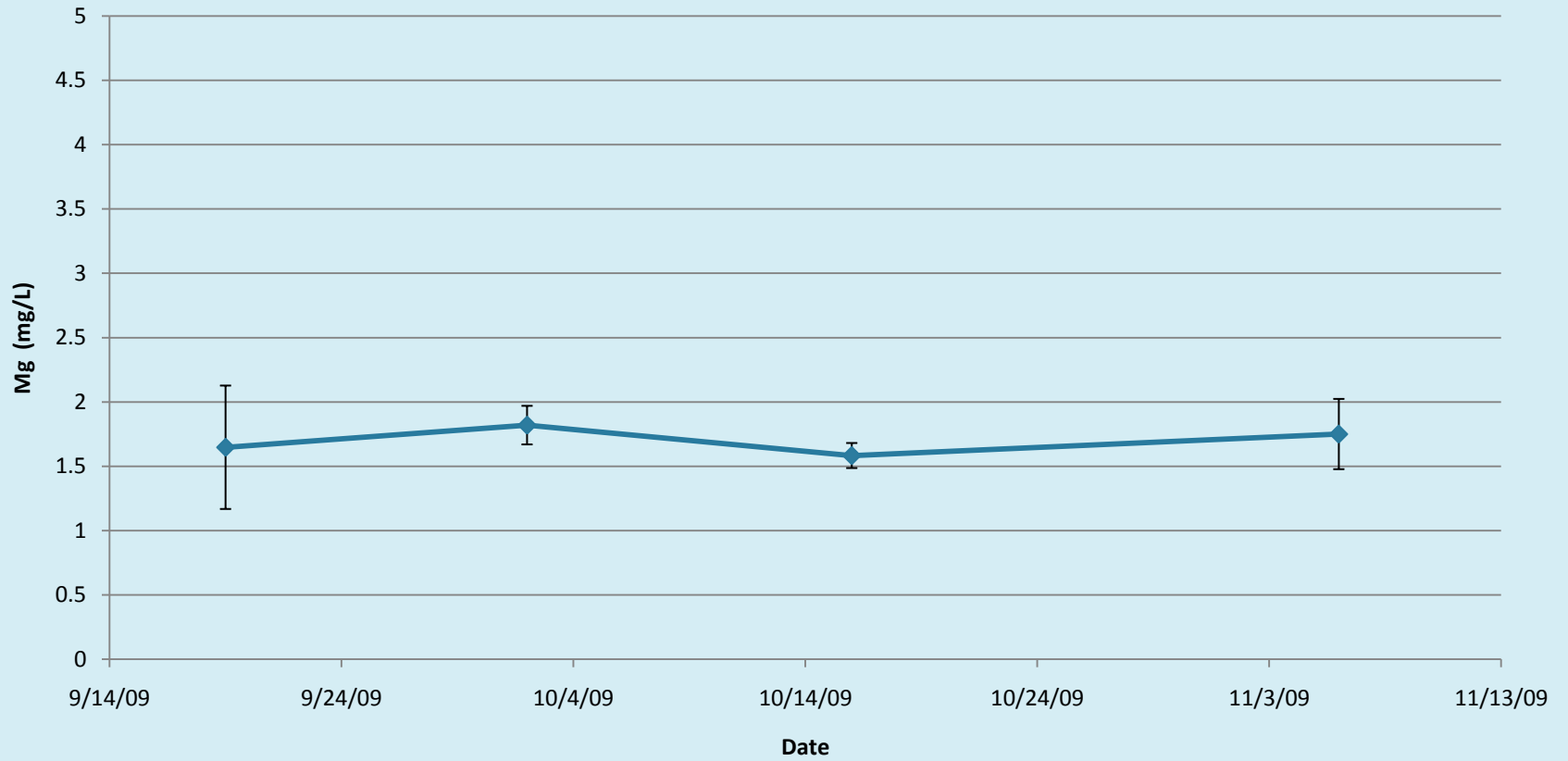
# Calcium

Calcium (mg/L)



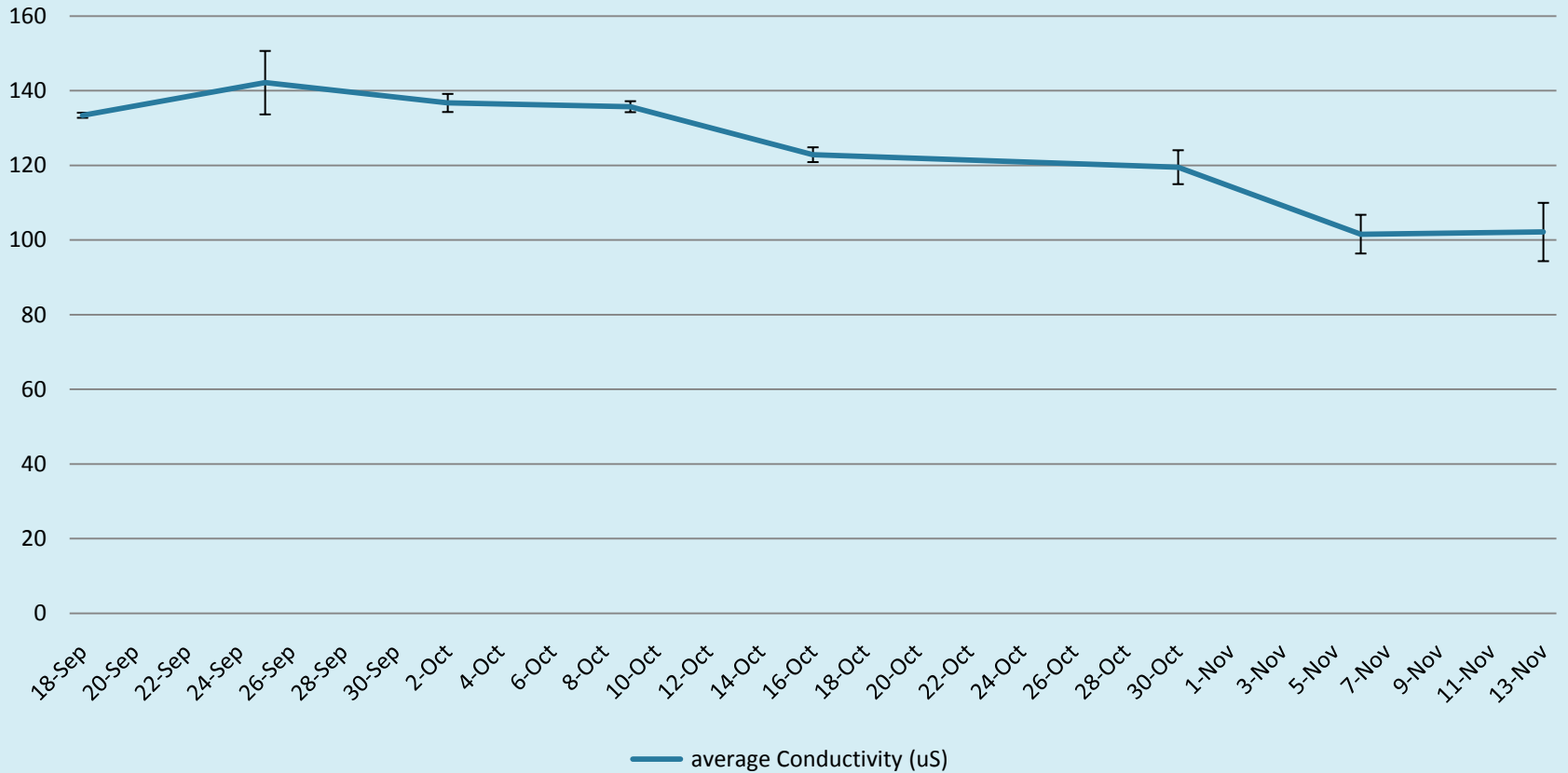
# Magnesium

## Magnesium



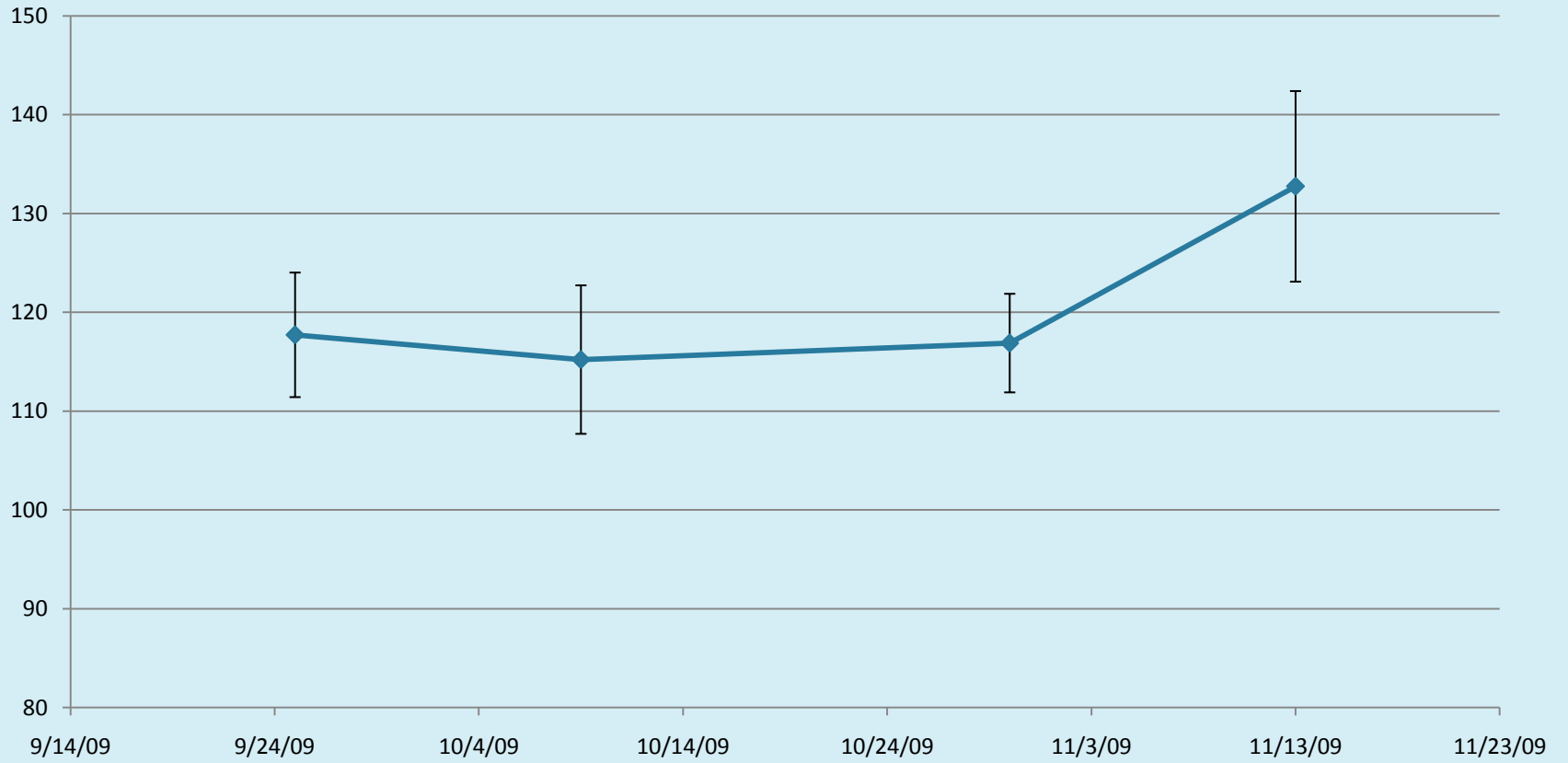
# Conductivity

Conductivity (uS)



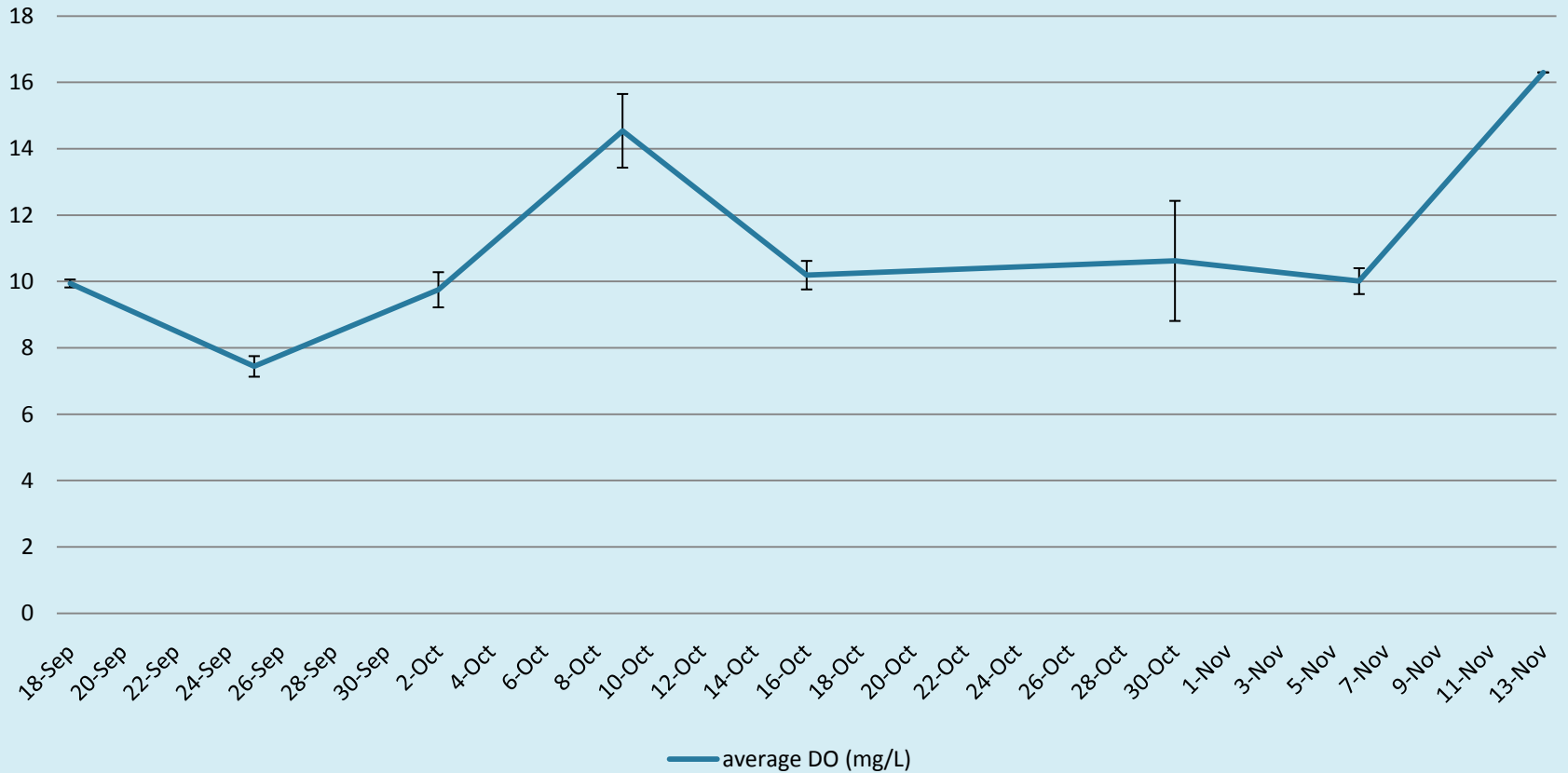
# Chlorides

Chlorides (mg/L)

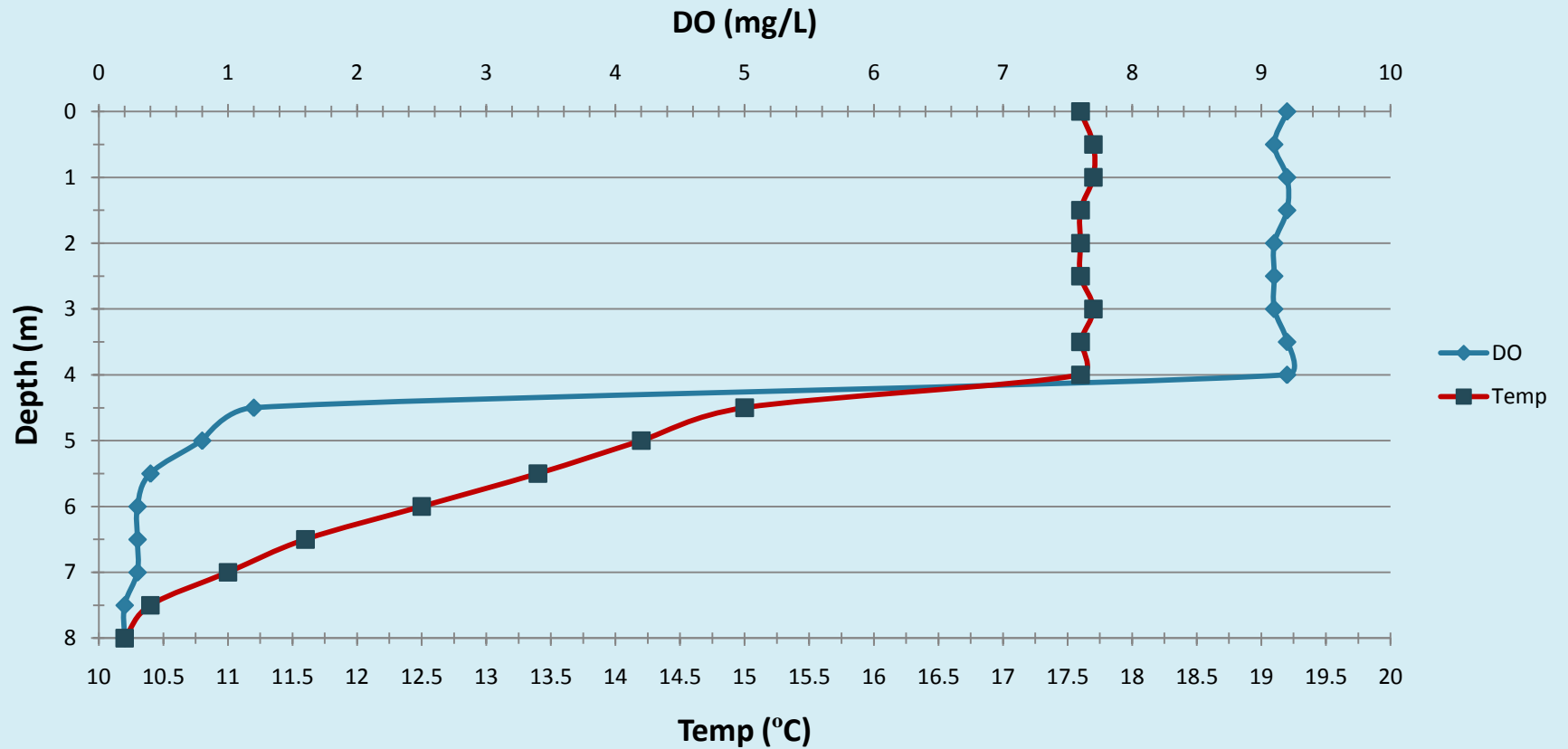


# Dissolved Oxygen

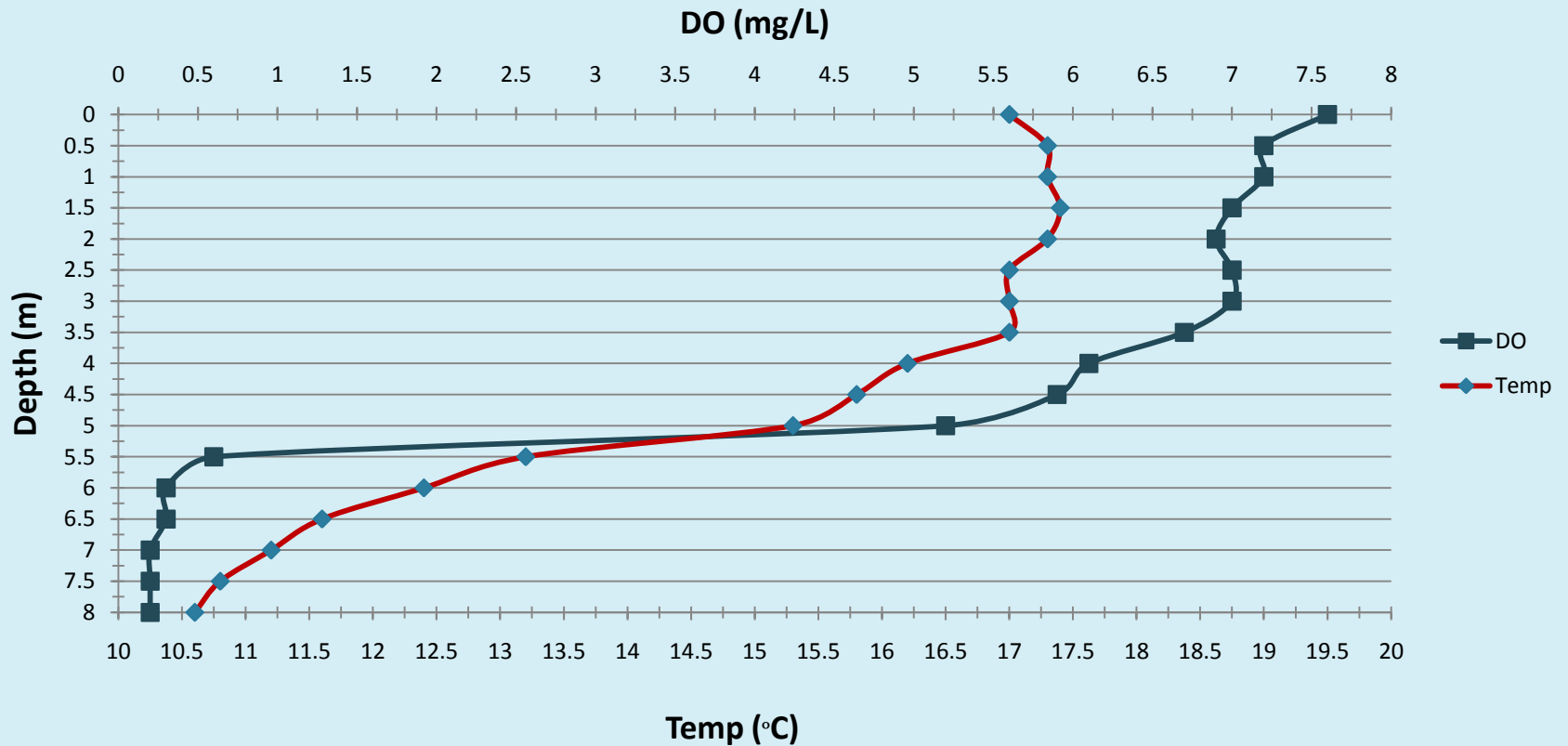
DO (mg/L)



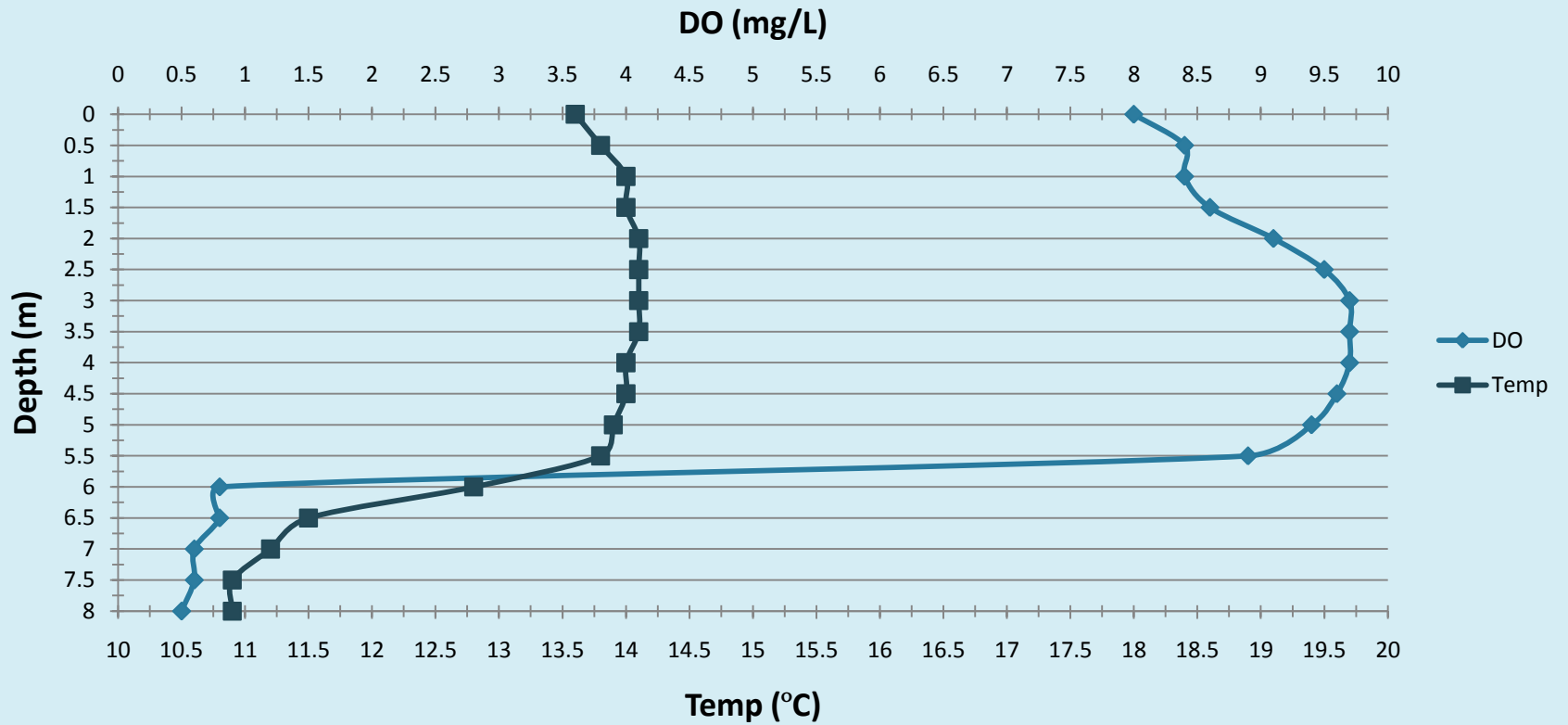
# Profile Temp and DO Graph - 9/18/09



# Profile Depth and DO Graph - 9/25/09

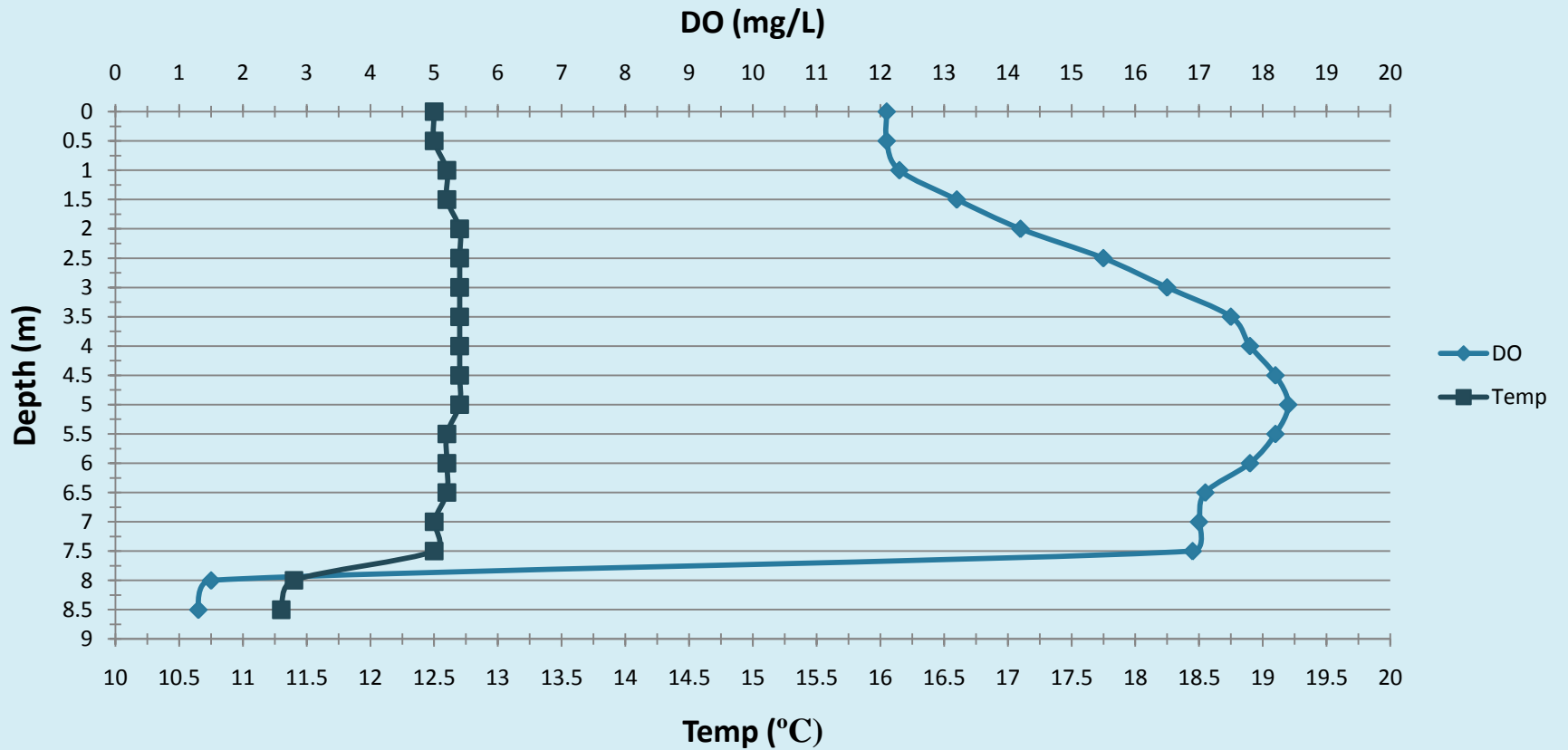


# Profile Depth and DO Graph - 10/2/09

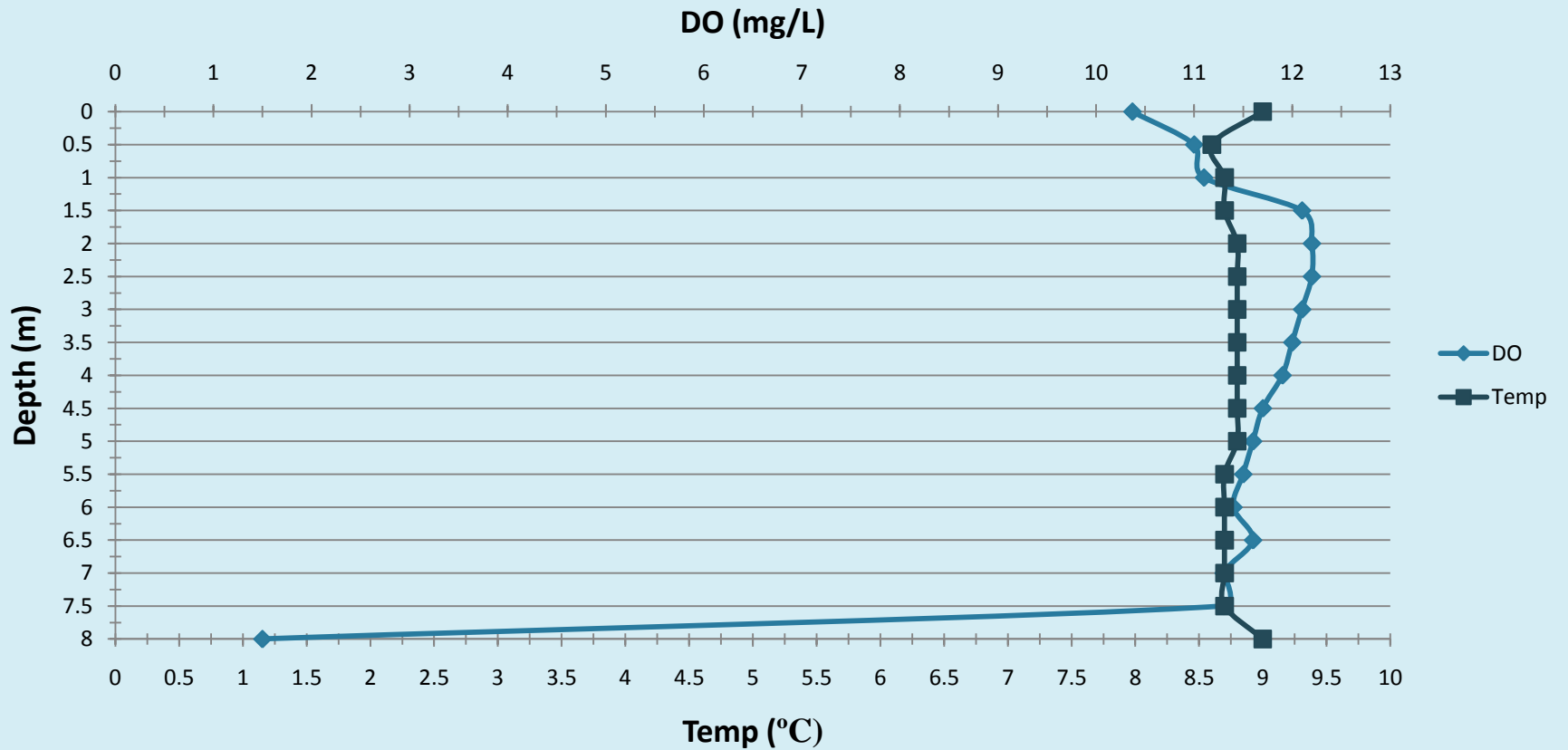




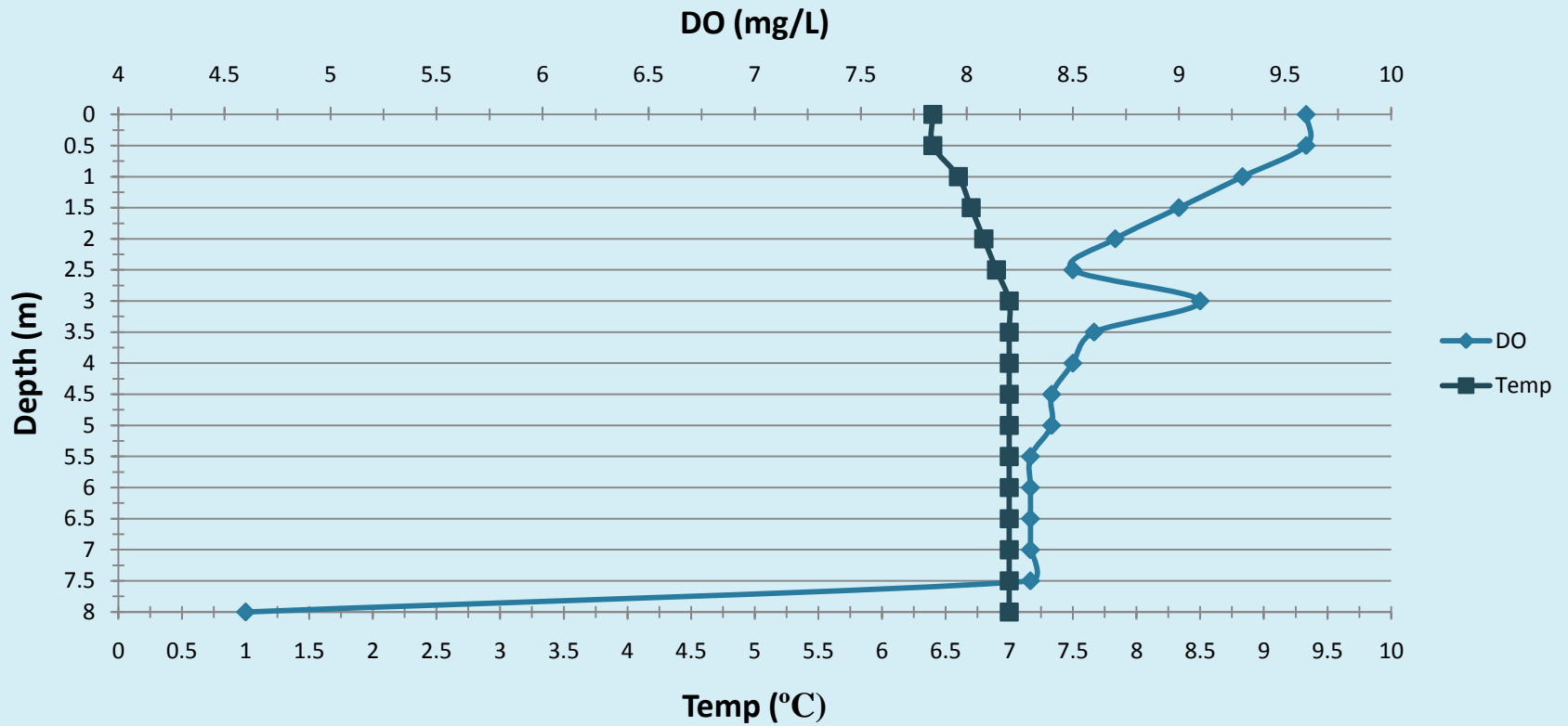
# Profile Depth and DO Graph - 10/9/09



# Profile Depth and DO Graph - 10/16/09



# Profile Depth and DO Graph - 11/6/09



# Biochemical Oxygen Demand

Site	Depth (m)	BOD <sub>5</sub> (mg/L)
1	0	3.10
3	0	2.05
3	4	1.65
3	8	2.35
5	0	1.00

## DES LAKE ASSESSMENT PROGRAM SUMMER EPILIMNION AND UPPER LAYER BIOLOGICAL AND CHEMICAL CHARACTERISTICS (page 1 of 2)

Volume and Maximum Depth Category	Statistical Parameter	Maximum Depth (m)	Volume (m <sup>3</sup> )	Secchi (m)	Chl-a (mg/m <sup>3</sup> )	Total Phos. (ug/L)	pH (units)	Alkalinity (mg/L)	Conductivity (uMhos/cm)
<b>GROUP 1</b> Volume = 1 - < 100,000 m <sup>3</sup> Maximum Depth = 0 - <10 m	MIN	0.50	3000.00	0.40	0.55	1.000	4.50	-1.90	13.80
	MAX	9.80	99000.00	9.80	58.57	78.000	9.20	85.90	818.00
	MEAN	3.11	52683.54	2.16	8.23	18.888	6.36	8.35	67.57
	MEDIAN	2.50	53000.00	1.80	5.41	16.000	6.40	4.40	33.90
	COUNT	161.00	161.00	159.00	157.00	160.000	161.00	161.00	159.00
<b>GROUP 2</b> Volume = 100,000 - < 5,000,000 m <sup>3</sup> Maximum Depth = 0 - <10 m	MIN	1.20	100000.00	0.40	0.36	0.500	4.30	-3.00	14.80
	MAX	9.70	4696000.00	9.10	143.80	121.000	9.30	62.30	696.00
	MEAN	4.77	678122.80	2.93	8.23	15.000	6.53	6.43	67.58
	MEDIAN	4.45	341500.00	2.70	5.37	13.000	6.60	4.50	42.15
	COUNT	274.00	421.00	418.00	418.00	418.000	418.00	418.00	410.00
<b>GROUP 3</b> Volume = 5,000,000 < 50,000,000 m <sup>3</sup> Maximum Depth = 0 - <10 m	MIN	4.9	5042000.0	2.7	1.8	7.000	6.1	1.5	27.3
	MAX	9.7	43191500.0	8.0	6.0	18.000	6.9	15.8	77.7
	MEAN	8.0	11997600.0	3.7	4.3	11.250	6.6	5.3	47.6
	MEDIAN	7.8	8290750.0	3.3	4.5	10.000	6.8	5.0	43.3
	COUNT	10.0	10.0	10.0	10.0	8.000	10.0	10.0	10.0
<b>GROUP 4</b> Volume = 1 - < 100,000 m <sup>3</sup> Maximum Depth = 10 - <25 m	MIN	10.30	86000.00	5.0	5.81	10.000	5.90	0.50	18.00
	MAX	10.30	86000.00	5.0	5.81	10.000	5.90	0.50	18.00
	MEAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MEDIAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COUNT	1.00	1.00	1.00	1.00	1.000	1.00	1.00	1.00
<b>GROUP 5</b> Volume = 100,000 - < 5,000,000 m <sup>3</sup> Maximum Depth = 10 - < 25 m	MIN	10.00	123000.00	0.80	0.36	0.500	5.10	-0.20	14.42
	MAX	24.40	4951000.00	11.40	63.68	49.000	7.90	23.80	229.00
	MEAN	14.34	1913529.91	4.91	5.14	8.409	6.63	5.03	50.36
	MEDIAN	13.60	1586500.00	4.50	4.17	7.000	6.70	3.80	34.05
	COUNT	117.00	117.00	116.00	113.00	116.000	117.00	117.00	116.00

# Messer Pond

- Sediments

Site	pH	% Organic Matter	% Ash
1	5.07	59.3	40.7
2	6.195	30.7	69.3
4	5.38	1.4	98.6
5	5.525	1.7	98.3
6	5.16	2.7	97.3
7	5.01	19.2	80.8
O	3.91	91.7	8.3
A	3.95	47.0	53.0
B	4.61	49.5	50.5