

Project Trip Report

Baker

Project Name: 2008/2009 Alpine Lakes Water Resource Support	Date of Trip: January 21, 2009
Project Code: 115872	Submitted By: Elijah Keib

Weather: -28° F, 20-30 mph wind

Elijah Keib arrived at Alpine on Monday, January 20, 2009 at 7:30 PM. Upon arrival Mr. Keib met with LCMF and coordinated access to the Lake L9312 and Lake L9313 for the planned lake monitoring event. At 6:00 AM on January 6, Mr. Keib attended LCMF's daily health and safety meeting. At 7:30 AM equipment was assembled, calibrated and prepared for transport. Darren Saxosky of LCMF accompanied Mr. Keib to the lake sampling locations via Hägglund departing Alpine at approximately 8:00 AM. Ice thickness, total depth, freeboard, temperature, salinity, conductivity, and dissolved oxygen (DO), were collected at predetermined locations. Sampling took place at the deepest location in each lake. Specific conductance was calculated from observed temperatures and conductivity. Results are tabulated in the attached sheets.

In-situ water quality parameters were recorded using a YSI-30 meter (conductivity, salinity, and temperature). Dissolved oxygen was measured using a Hach HQ40 LDO meter. All measurements were made from below the ice surface to the lake bottom at a maximum of two-foot intervals. The DO meter was calibrated prior to the trip by TTT Environmental. The YSI-30 was calibrated on January 20 by Baker prior to sampling. The next monitoring event is scheduled for May 26, 2009.

Lake L9313:

The average specific conductance was measured to be 414 $\mu\text{S}/\text{cm}$ and ranged from 651 $\mu\text{S}/\text{cm}$ at 9 feet of depth to 330 $\mu\text{S}/\text{cm}$ at 7 feet of depth. An oxycline was evident with values ranging from 2.3 mg/L at 9 feet of depth to 11.3 mg/L at 3.5 feet of depth. Dissolved oxygen saturation showed a decrease with respect to depth ranging from 76.9% at 3.5 feet of depth to 17.5% at 9 feet of depth and averaging 56.9%.

Lake L9312:

The average specific conductance was measured to be 119 $\mu\text{S}/\text{cm}$ and ranged from 111 $\mu\text{S}/\text{cm}$ at 9 feet of depth to 125 $\mu\text{S}/\text{cm}$ at 3 feet of depth. An oxycline was evident with values ranging from 4.0 mg/L at 11 feet of depth to 15.0 mg/L at 3 feet of depth. Dissolved oxygen saturation showed a decrease with respect to depth ranging from 101.5% at 3 feet of depth to 31.0% at 11 feet of depth and averaging 73.9%.

Alpine Lake Monitoring Program
Water Quality



Sample Date: January 21, 2009

Upstream Location Time	Water Depth (ft)	Ice Thickness (ft)	Free Board (ft)	Sample Depth (ft)	Temp (°C)	Conductivity (µS/cm)	Specific Conductance (µS/cm)	DO (mg/L)	DO (Percent Saturation)	Salinity (ppt)	
Lake L9313 N70°20'28.1" W150°56'31.5" 2:50 p.m.	9.2	3.0	0.1	1	-	-	-	-	-	-	
				2	-	-	-	-	-	-	-
				3.5	0.3	176	341	11.3	76.9	0.2	
				4	-	-	-	-	-	-	
				5	1.1	177	332	10.6	74.1	0.2	
				6	-	-	-	-	-	-	
				7	1.9	181	330	8.2	58.9	0.2	
				8	-	-	-	-	-	-	
				9	2.4	363	651	2.3	17.5	0.2	
				10	-	-	-	-	-	-	
				11	-	-	-	-	-	-	
				12	-	-	-	-	-	-	
Lake L9312 N70°19'52.2" W150°56'59.9" 3:15 p.m.	14.0	2.9	0.1	1	-	-	-	-	-	-	
				2	-	-	-	-	-	-	
				3	0.3	64	125	15.0	101.5	0.1	
				4	-	-	-	-	-	-	
				5	1.0	63	119	13.7	94.5	0.1	
				6	-	-	-	-	-	-	
				7	1.6	63	116	12.4	87.6	0.1	
				8	-	-	-	-	-	-	
				9	2.3	61	111	7.6	54.7	0.1	
				10	-	-	-	-	-	-	
				11	3.3	71	124	4.0	31.0	0.1	
				12	-	-	-	-	-	-	

Notes:

- (1) All sample location coordinates referenced to NAD83 datum.
- (2) Freeboard is the distance from the top of ice to the water surface.
- (3) Sample depth is measured from the water surface.
- (4) Salinity, conductivity, and temperature were measured using a YSI-30 meter.
- (5) Specific conductance (referenced to 25°C) was obtained using a conversion coefficient of 0.0196 based on empirical data.
- (6) Dissolved oxygen was measured using a Hach HQ-40d LDO.
- (7) Time shown indicates the start of the measurement.