



Ferrum College & Smith Mountain Lake Association
SML Water Quality Monitoring

The Water Drop and Lake Monitor

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July 2020 Newsletter

Ferrum College

Edited By: Michelle Musick

2020 Water Quality Update



Top photo, left to right : Sam Chappell, Lexi Davidson, Jacob Blaukovitch, Sam Easter, and Dr. Delia Heck.

Bottom photo, left to right : Chelsea Zizzi, Carol Love, Dr. Clay Britton, and Michelle Musick.

Photos taken by Bob Pohl

The end of summer is fast approaching and the Fall 2020 semester is just around the corner. This year has proven to be very unique. The dedication of volunteer monitors such as yourselves has made this summer a joy. Without your help our work on monitoring the quality of Smith Mountain Lake would not be possible. On behalf of the student technicians and the Ferrum College Smith Mountain Lake Water Quality Program we thank our monitors immensely and our supervisors for this great opportunity.

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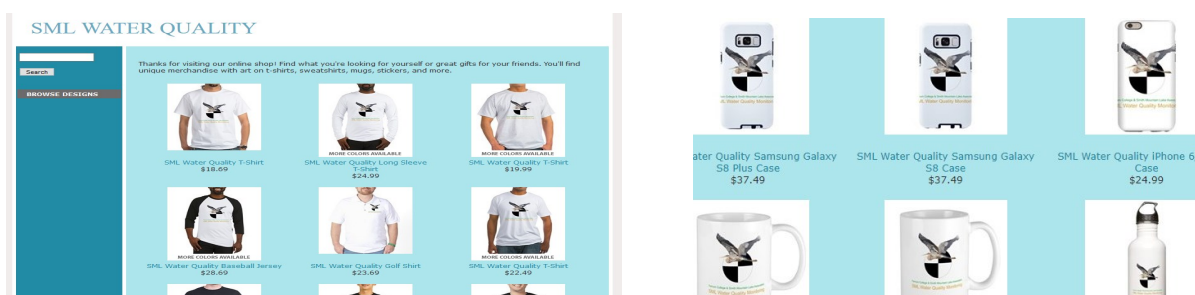
Reminders for Water Sampling

- Filters are labelled with pencil, with the date, sample site and time.
- Please remember to sample within the dates of the sampling week.
- Secchi readings are read to the nearest quarter of a meter, as labeled on your Secchi rope.
- Water samples are taken at DOUBLE the Secchi depth.
- If you are in need of anything please contact us.

Change in Logo!

The secchi disk has been part of the water quality program for many years. In dedication of this season to Carolyn Thomas former director of the Water Quality Program her spirit bird, the Great Blue Heron, has now been incorporated into the logo. Below is a link to a CaféPress shop with a variety of items including shirts and other items you may purchase with this logo. All profits collected will go into Carolyn's memorial fund at Ferrum College for student projects in Life Sciences.

<https://www.cafepress.com/SMLWaterQuality>

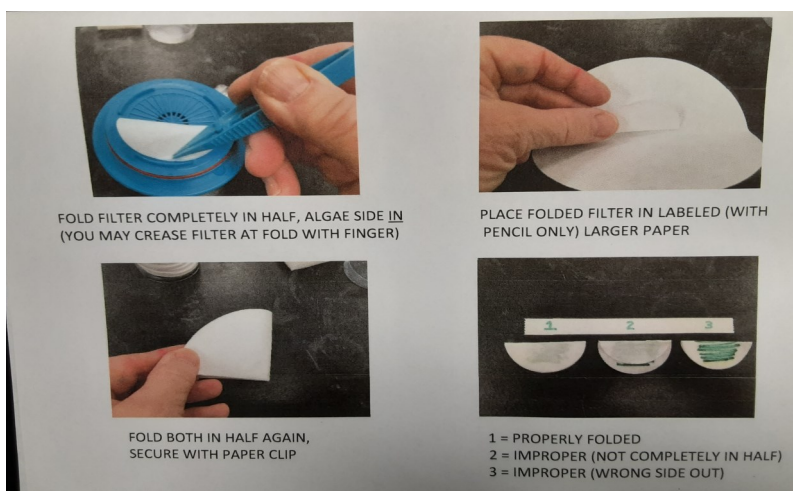


A Gentle Reminder for Chlorophyll-a Samples

Please remember to fold the small filter in half before placing it inside of the larger filter. This is to prevent the algae from rubbing off onto the large filter before we are able to analyze it.

Pictured below is a great tool and reminder of proper folding. Taking this with you in the field can be very helpful.

Remember, only filters need to go inside the black zip-lock bag. Sample bottles and Secchi cards can be placed the larger clear zip-lock.



Also please remember to label filters with date, sample site and time in pencil.

Total Phosphorus Analysis Overview

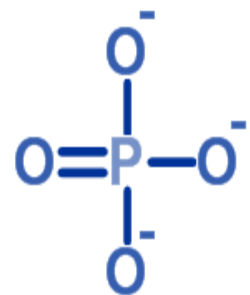
Background

Phosphorus is a plant nutrient that stimulates the growth of algae. Phosphorus is readily available to algae and is the limiting nutrient in Smith Mountain Lake. As a result, monitoring of total phosphorus (TP) concentrations in Smith Mountain Lake can provide early warning of increased nutrient enrichment and the possibility of algal blooms.



Picture of the Lachat (instrument used for analysis) along with the necessary reagents

The water samples received from our monitors are placed in test tubes and digested using an acidic digestion which converts the various forms of phosphorus in the samples to phosphate ion. A single phosphate ion is known as orthophosphate ion. The LACHAT (Flow Injection Analyzer) then measures the orthophosphate concentration in parts per billion (ppb).



Water Quality Tentative Data Averages

Tentative Secchi Readings (meters):

Week 1: 1.45m

Week 2: 1.68m

Week 3: 1.74m

Week 4: 1.85m

Tentative Total Phosphorous for SML and Tributaries:

Week 1: 46.9ppb

Week 2: 58.9ppb

Week 3: 44.3ppb

Week 4: 39.5ppb

Tentative Chlorophyll *a*:

Week 1: 13.33ppb

Week 2: 7.13ppb

Week 3: 12.37ppb

Week 4: 7.71ppb

Tentative Cumulative Algae:

Blue Green: 15%

Diatoms: 14%

Green Algae: 71%

August 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						8/1
8/2	8/3	8/4 5th Profile and Sample pick-up	8/5	8/6	8/7	8/8
8/9 Start of 6TH sampling week	8/10	8/11 6th Bacterial Sampling	8/12	8/13	8/14	8/15
8/16	8/17	8/18 6TH Profile and sample pick-up	8/19	8/20	8/21	8/22
8/23	8/24	8/25	8/26	8/27	8/28	8/29



***Send us your pictures!**

The Smith Mountain Lake Water Quality Program Facebook page is a great place to share updates, pictures, and other cool aspects of the program. We would love to include photos of volunteers out on the lake. You can send them to our email address, listed to the side, or you can like the page and upload your pictures directly to the site!

Check out the Ferrum College Water Quality Program online!

Web page: http://www.ferrum.edu/academics/schools/natural_sciences_math/projects/sml_water_quality/

Facebook: Smith Mountain Lake Water Quality Program at Ferrum College

Twitter: @FerrumWaterQty

Schedule of Events

- 8/9-8/15 – 6th SML Water Sampling Week (White)
- 8/11-6th SML Water Bacterial Sampling
- 8/18– 6th SML Sample Pick-up by Ferrum
- 8/18 6th Depth Profile

Remember that samples can be left at the Smith Mountain Lake Office. The Office is located beside Dairy Queen on Route 834 Scruggs Road . The entrance is in the back of the building. Be sure to call the Smith Mountain Lake Office before dropping off samples as well as notify our lab by the contact information below. We leave the building by 7:00 am on sampling days, so if you can call prior to pick up date, that would ensure that we pick up your samples at the correct location.

Contact Information:

Ferrum College Water Quality Lab
80 Wiley Drive

Phone: 540-365-4612

Email: wqp@ferrum.edu