

# **Conesus Lake Monitoring 2019**

## **I. Internal Loading and Phytoplankton Blooms**

## **II. Tributary Monitoring**

**Report Submitted to  
The Livingston County Planning Department**

by

**<sup>a</sup>Isidro Bosch, PhD**

**<sup>b</sup>Dan Beers, MS Student**

**<sup>b</sup>Michael Chislock, PhD**

**<sup>a</sup>Gloria Benoit , Undergraduate Student**

**<sup>a</sup>Evan Burr, Undergraduate Student**

**<sup>a</sup>Department of Biology  
State University of New York at Geneseo**

**<sup>b</sup>Department of Environmental Science and Ecology  
The College at Brockport**

**January 17, 2020**

## TABLE OF CONTENTS

<b>List of Tables, Figures and Appendices</b>	<b>2</b>
<b>Summary</b>	<b>4</b>
<b>I. Internal Loading, and Phytoplankton Blooms</b>	
<b>Background</b>	<b>5</b>
<b>Methods</b>	<b>5</b>
<b>Results and Discussion</b>	<b>7</b>
<b>Conclusions</b>	<b>10</b>
<b>II. Stream Bank Restoration Project Update</b>	
<b>Background</b>	<b>11</b>
<b>Methods</b>	<b>11</b>
<b>Results and Discussion</b>	<b>12</b>
<b>Acknowledgements</b>	<b>13</b>
<b>References</b>	<b>14</b>
<b>Tables and Figures</b>	<b>15</b>
<b>Appendices</b>	<b>32</b>

## List of Tables, Figures and Appendices

### Tables

<b>Table 1.</b> Total phosphorus at various depths for all three Conesus Lake basins, showing near-bottom accumulation that is indicative of internal loading .....	15
<b>Table 2.</b> Soluble reactive phosphorus concentrations for all three basins .....	16
<b>Table 3.</b> Picoplankton cell counts for June and July. Peak abundance values recorded on July 23 are highlighted in boldface .....	17
<b>Table 4.</b> Picoplankton cell counts for August showing a second summer abundance peak of nearly 300 thousand cells/mL on the 16th of August .....	18
<b>Table 5.</b> Indicators of phytoplankton biomass include chlorophyll- <i>a</i> , phycocyanin ( a cyanobacterial pigment), water turbidity and Secchi depth .....	19
<b>Table 6.</b> Tributary sampling locations, justifications and data collection .....	20
<b>Table 7.</b> Water quality data (field measurements) for 2019 tributary sampling events .....	21
<b>Table 8.</b> Water quality data (lab measurements) for 2019 tributary sampling events .....	22

### Figures

<b>Figure 1.</b> Total phosphorus concentrations about 1 m off the bottom shown for each of the three basins in Conesus Lake. ....	23
<b>Figure 2.</b> Buildup of total phosphorus near bottom in the deep southern basin based on 5 different studies .....	23
<b>Figure 3.</b> Data from <i>in situ</i> temperature arrays showing episodic spikes in deep water temperatures that we interpret as water column mixing events .....	24
<b>Figure 4.</b> Temperature profiles showing trends in stratification in the shallower two basins of Conesus Lake .....	25
<b>Figure 5.</b> Temperature stratification in the deeper South Basin .....	26
<b>Figure 6.</b> Hypolimnetic oxygen saturation in the three basins .....	27
<b>Figure 7.</b> Low oxidation reduction potentials near the bottom in the north (top), center and south basins of Conesus Lake (bottom) .....	28

**Figure 8.** Picoplankton cell numbers in surface waters of the south basin .....29

**Figure 9.** Vertical distribution of picoplankton, showing that the highest densities were usually in the upper 5 meters of the water column .....29

**Figure 10.** Map of site locations .....30

**Figure 11.** Total suspended solids, turbidity, and total phosphorus concentrations upstream and downstream of remediated segments for each of the three streams. ....31

**Appendices**

**Appendix I:** Profile data taken at each of the stations from June 26 to Sep. 22 with the Hydrolab and YSI sondes. Data on turbidity and Secchi depths are also included .....32

**Appendix II:** Report on analysis of picoplankton species identification and abundance for a surface sample collected on July 26 at a depth of 1 m from the south basin station..... 49

**Appendix III:** Photographs of sampling locations for the three tributaries studied . ....51

## Summary

- This 2019 Conesus Lake monitoring study consisted of an in-lake component and a tributary component. The primary goals of the in-lake work were to document the amount of internal loading in the three basins of the lake and to describe the seasonality and vertical distribution of photosynthetic picoplankton (0.2 – 2.0  $\mu\text{m}$  size). The goal of the tributary study was to assess the effectiveness of 2018 remediation efforts to reduce stream bank erosion and improve overall water quality conditions in the North Gully, Wilkins Creek and North McMillan tributaries.
- Near-bottom accumulation of total phosphorus (TP) and soluble reactive phosphorus (SRP) primarily due to internal loading began in late June and peaked in our August 21 samples, when concentrations of TP and SRP were both as high as  $580 \mu\text{g}\cdot\text{L}^{-1}$ . P accumulation may have continued well into September but a major wind-driven water column mixing event in mid-September moved vast amounts of hypolimnetic phosphorus to surface waters, reducing concentrations near bottom by as much as 72%, even in the deep southern basin.
- P internal loading occurred in all three basins with concentrations of TP in the shallower more oxygenated north basin reaching  $140 \mu\text{g}\cdot\text{L}^{-1}$ ; in the central basin, which is slightly deeper, TP reached a maximum of  $190 \mu\text{g}\cdot\text{L}^{-1}$ , while the deeper south basin accumulated the highest amount of total phosphorus at  $580 \mu\text{g}\cdot\text{L}^{-1}$ .
- Photosynthetic picoplankton were dominated by cyanobacteria of the genera *Synechococcus*, *Cyanogranis ferruginea* and species of the family Chroococcaceae. Fluorescence microscope analysis of cell numbers showed there were two major peaks in cell densities between June 19 and August 20. One peak occurred in mid-July when maximum numbers in the upper 6 m of the water column reached  $575 \times 10^3$  cells per mL and the other was in mid-August, when maximum densities were about  $340 \times 10^3$  cells per mL.
- We noted that colonies of the typical colonial HAB forming species such as *Dolichospermum* and *Microcystis* were relatively rare when the picoplankton were in bloom in July and August, but became abundant in late September, after a major water column mixing event. Single-cell picoplankton in bloom proportions may compete for nutrients and light with the larger colonial HAB forming species. Understanding the conditions that favor blooms of one group over another should be a major goal for future monitoring activities.
- Monthly tributary sampling of total suspended solids (TSS), turbidity and nutrient concentrations from July 23 to October 21 indicated that stream bank stabilization in North Gully has reduced erosion, lowering water turbidity and total suspended solids (TSS). In contrast, suspended sediments in Wilkins Creek were higher for the downstream segment, which is opposite to pre-stabilization patterns. For North McMillan Creek, TSS concentrations were below lab detection limits for upstream and downstream segments during all 5 sampling events. Sampling during spring runoff events should be a major goal for future tributary monitoring efforts.

## **I. Internal Loading and Phytoplankton Blooms**

### ***Background***

Internal loading of phosphorus (P) from the lake sediments into the water column is a major contributor to the P budget of Conesus Lake and other productive temperate lakes (USEPA and NYSDEC report, 2019). As we consider ways to reduce this internal source of P to improve lake water quality, it is important to have information on the amount and rate of release from sediments in different areas of the lake. Internal loading of P has been studied many times previously in the south basin of Conesus Lake, and occasionally in the north and center basins, but no single study has sampled all three basins at the same time. A major goal of the 2019 monitoring plan is to determine the relative importance of internal loading from each of the Conesus Lake basins.

The second major goal of this year's lake monitoring plan is to better understand the ecological causes and consequences of blooms dominated by single cell photosynthetic cyanobacteria (cyanopicoplankton) that seem to occur regularly in Conesus Lake since first reported by Bosch and colleagues in 2015. There are at least three important reasons why we need to learn more about these blooms. First of all, they adversely affect water quality, recreation and consumption by increasing the turbidity and particulate load of the water (Bosch and colleagues 2015, personal communication with water plant operators). Second, there are reports that some of the species in the cyanobacterial picoplankton community may produce toxins and thus pose a risk to public health (Sliwinska-Wilczewska *et al.*, 2018). Third, by consuming nutrients and absorbing light, picoplankton blooms may reduce the risk of HABs by colonial cyanobacteria (*Microcystis* and *Dolichospermum* and others) that routinely bloom in Conesus Lake.

### ***Methods***

To study internal loading of phosphorus (P) and document the distribution of total phosphorus (TP) and soluble reactive phosphorus (SRP) in the water column, we collected water samples on June 26, July 23, August 20 and September 21 from all three basins. The coordinates for each site sampled are as follows: north basin, 42°49' N -77°42' W; north trough, 42°48' N -77° 42' W; center basin, N 42° 47' N -77° 43' W; south basin, 42°44' -77°43' W.

Duplicate 2.1 L water samples were collected from discrete depths with a VanDorn

sampler. Two samples were mixed at the surface and subsamples for analyses were taken following standard quality control procedures. All sample containers were rinsed with the water being collected prior to sample collection. Sample water for SRP analysis was filtered with 0.45- $\mu\text{m}$  MCI Magna Nylon 66 membrane filters. Samples were stored in acid-washed plastic bottles and held in ice for transport. On each collection date a laboratory blank and a replicate sample of a randomly selected depth was analyzed for quality control purposes. In general, all procedures followed Standard Methods for the Analysis of Water and Wastewater (USEPA, 1999). Analyses of water samples for total phosphorus (TP; EPA method 365.1 Rev 2) and Soluble Reactive Phosphorus ((EPA 365.3 A) were carried out at the NELAP and NYS accredited Life Sciences Laboratory in East Syracuse NY.

Water column profiles were obtained with a Hydrolab 5a sonde equipped with sensors for depth (m) temperature ( $^{\circ}\text{C}$ ), conductivity ( $\mu\text{Siemens}\cdot\text{cm}^{-2}$ ), dissolved oxygen ( $\text{mg}\cdot\text{L}^{-1}$  and % saturation), pH and redox potential (mV). All sensors were calibrated within a few hours of sampling, in adherence to the procedures and recommendations of the manufacturer (OTT Hydromet). A YSI ProDSS multiparameter sonde was used to determine *in vivo* chlorophyll a and phycocyanin in units of relative fluorescence (RFUs). These sensors were calibrated immediately prior to each sampling event.

Two independent measures of water transparency were recorded. Water turbidity as nephelometer turbidity units (NTU) was measured with a calibrated Hach 2100P turbidity meter. The Secchi depth was determined with a black and white 20-cm disk.

Samples for counts of single cell cyanobacteria (cyanopico plankton) were collected with a Van Dorn sampler from different depths and locations in the lake, depending on conditions and time constraints. To study the vertical distribution of picoplankton, collections were made at 1,3,5 and 7 m on multiple days in July and August. A total of 72 samples were counted.

Samples were examined under epifluorescence microscopy at 100x total magnification (10x objective \* 10x ocular lens), and picocyanobacterial cells were identified on the basis of fluorescence light emission and size (<2 microns). The counts were made on an Olympus BX41 compound microscope fitted with a XCite Series 120 light source and a TRITC fluorescence filter set. With this filter set cyanobacterial pigments emit fluorescence that is yellow-orange whereas chlorophyll emits more in the orange-red. Subsamples of lake water containing cells were loaded onto an Improved Neubauer Scientific Counting Chamber (C.A. Hauser and Son; available from Fisher Scientific), which has a counting chamber volume of  $10^{-4}$  mL. For each

sample, replicate counts (typically 8) were made in order to approach a statistical coefficient of variation that was near 10% (ratio of standard deviation/ mean multiplied \*100). Cells in the 4 corner squares of the Neubauer gridded chamber were counted and the average count of the 4 was multiplied x  $10^4$  to obtain a value of cell #/mL.

A sample from the upper m of the water column was preserved in 2% glutaraldehyde and sent to *Phycotech Inc.*(St. Joseph, MI) for taxonomic and numerical analysis of the picoplankton community.

## ***Results and Discussion***

### Internal Loading of Phosphorus

In 2019 there was once again significant accumulation of phosphorus (P) in the hypolimnion and especially near-bottom in Conesus Lake. This year's study is the first to show internal loading of P in all three lake basins concurrently (**Figure 1, Table 1 and 2**). As previously reported by Bosch and colleagues (2017, 2018), the largest buildup of P occurred in the deep south basin, where concentrations of total phosphorus (TP) and soluble reactive phosphorus (SRP) at 18 m reached maxima of 580  $\mu\text{g/L}$  (**Tables 1 and 2**). By contrast, the maximum concentrations in the central basin at a depth of about 13 m was about 190  $\mu\text{g/L}$  TP and SRP. In the shallower north basin at 11 m, concentrations were lowest at 140  $\mu\text{g/L}$  TP and 120  $\mu\text{g/L}$  SRP.

Over a study period of 56 days (June 26- August 21), the concentration of TP in the south basin increased from 56  $\mu\text{g/L}$  to 580  $\mu\text{g/L}$ . As shown in **Figure 2**, the maximum near bottom concentrations by August 21 were comparable to those reported for 2009 by Makarewicz and Lewis but higher than maximum values reported in other years (Makarewicz and Lewis 2014, Bosch and colleagues 2017, 2018). Analysis of P distribution was also done on September 21, but by then concentrations along the bottom had decreased significantly due to a major mixing event that had taken place in mid-September (discussed in more detail below). Because of this, we could not document the full extent of internal P loading for the whole period of stratification. Nevertheless, it is clear that internal loading continues to be a major source of P in Conesus Lake, especially in the deeper and more hydrodynamically stable south basin. This is consistent with the predictions of model calculations showing that about 80% of the P in Conesus Lake is generated by internal loading (DEC TMDL for Conesus Lake, 2019).

Differences in P internal loading described in this study for the 3 basins are consistent with differences in their respective depths and relative stability of the water column. The north basin mixes partially or wholly (surface to bottom) several times during the summer period of stratification (Bosch and colleagues 2017, 2018), while the deeper central basin is more stable and rarely seems to mix fully. The south basin with its great depths and volume has not been reported bottom after the full lake turnover (Bosch and colleagues 2017, 2018). These differences in stability are evident in the 2019 *in situ* temperature array records for the north basin and the south basin (**Figure 3**). The top graph in **Figure 3** shows that near-bottom waters (10.8 m depth) of the north basin fluctuated from 14 to more than 20 °C over short periods of time (e.g. ~ Sep 4), an indication that mixing of cold bottom waters and warm surface waters had taken place. Over the same time interval, bottom waters in the south basin remained low and presumably unmixed at about 11 °C during that same time interval.

All three basins were stratified during the summer season but to different degrees (**Figures 4 and 5**). The temperatures in the hypolimnion were colder in the deep southern basin and that large volume of dense water made the water column much less likely to mix. During this extended stratification, oxygen in the hypolimnion is consumed by microbes that also release CO<sub>2</sub>. As expected, oxygen concentrations were extremely low for a longer period of time in the southern basin (See **Figure 6**). Associated changes in the chemical environment ensue, including a decrease in pH and decreases in the oxidation reduction potential (ORP) from more than 400 mV at the surface to well under 100 mV near the bottom (See profile data in **Appendix I**). When the ORP declines below 200 mV, chemical reactions release P from the sediments into the pore water and sediment water interphase. That, in essence, is the phenomenon of internal P loading. As seen in **Figure 7**, the southern basin experienced the lowest hypolimnetic ORP levels in the lake, and these conditions persisted for a longer period of time. In conclusion, while there was hypolimnetic oxygen loss, ORP decrease and P buildup in all three basins, all the evidence points to the south basin having the most chemically extreme environment, where the bulk of the relic phosphorus is released into the water column of Conesus Lake.

### Blooms of Photosynthetic Picoplankton

Blooms of single-celled cyanobacteria have been a regular occurrence in Conesus Lake since at least 2015 (Bosch and colleagues, 2015). Whether these events are a new phenomenon is uncertain, but their regularity in recent years raises questions about the ecological conditions

trigger their onset and declines, and how these species interact with the colonial cyanobacteria that contribute to HABs in Conesus Lake.

In 2019 we studied the picoplankton community to explore temporal and spatial patterns of abundance and to better define the ecological conditions that lead to their onset and decline. A total of 72 samples were examined by fluorescence microscopy between June 19, when the typical blueish green color of the water was first observed, and August 20 when sampling was terminated for the season (See **Table 4**). Cell abundance ranged from a low/background level of less than  $25 \times 10^3$  cells/mL on August 20 to a high of more than  $500 \times 10^3$  cells/mL on the 23<sup>rd</sup> of July (**Figure 8**). The highest cell numbers were usually in the upper 5 m of the water column (**Figure 9**), where cell numbers exceeding  $300 \times 10^3$  per mL were not unusual. Overall there were two peaks in abundance (See **Figure 8**), one July 20-26 and a second from August 8-16. Photosynthetic picoplankton abundance declined after July 26 and was relatively low in profiles examined on July 30 and August 1.

The density of picoplankton cells was so high during the July peak that the turbidity and color of the lake were severely affected. As seen in **Table 5**, Secchi depth and turbidity data show the effect of these high cell numbers on water clarity. During the peak of the blooms, Secchi depths were typically around 1 m and turbidity values were over 5 NTUs and in one case over 7 NTUs. By contrast in June, before the blooms, Secchi depths were typically over 2.0 m and turbidity was below 3.5 NTUs. The trends in water column pigment concentrations indicated by *in vivo* fluorescence of chlorophyll-*a* and phycocyanin were not as obviously connected to picoplankton abundance. For example, phycocyanin RFUs were highest in our September sample. By that time the lake phytoplankton community was dominated by colonial cyanobacteria and picoplankton were less abundant, as indicated by water turbidity and color. In contrast, chlorophyll-*a* values were highest during the peak of the picoplankton bloom, possibly because some green algal species were a small part of the bloom community.

In a previous study of Conesus Lake picoplankton blooms, Bosch and colleagues (2015) reported that species of the cyanobacterial genera *Synechococcus* and *Synechocystis* dominated the community. These species were reported as abundant in Conesus Lake by earlier workers (Forest et. al., 1978). We submitted a surface sample collected on the 21<sup>st</sup> of July for analysis by *Phycotech Inc.*, who provide expert taxonomic analyses of lake organisms. The results of this analysis show that species of the cyanobacterial genus *Synechococcus* were once again most abundant, with more than  $100 \times 10^3$  cells/mL (see report from *Phycotech Inc.* in **Appendix II**).

Other common types included species of the cyanobacterial family Chroococcaceae ( $49 \times 10^3$  cells/mL) and species from the green algal family Chlorococcaceae ( $5 \times 10^3$  cells/mL). The total picoplankton abundance in this sample was  $151 \times 10^3$  cells/mL, which is similar to our own counts of approximately  $250 \times 10^3$  cells/mL for a duplicate sample.

## Conclusions

In recent years, our research group from SUNY Brockport and SUNY Geneseo has been studying the connection between summer water column mixing events that deliver phosphorus to surface waters and the onset of cyanobacterial blooms. To detect mixing we rely on *in situ* temperature sensor arrays that have been deployed in each basin of the lake. Regrettably, due to equipment problems, we were unable to monitor lake temperature for June through most of August in 2019 and we cannot speculate as to whether water column mixing may have been the trigger for the reported picoplankton blooms in July and August.

Two of the arrays were repaired by late August and we have good temperature data for most of September. From these data we were able to document a major mixing event that took place between September 14-15. This event is evident in our **Figure 3** graphs, which show that temperatures along the bottom increased to near surface levels as deep as the 16.8 m mark in the south basin. This mixing event was triggered by more than 12 hr of very high wind velocities exceeding 15 -25 mph (Wunderground Historical database for Rochester airport). The phosphorus data collected for 2019 also shows signs of this mixing event (**Table 1, 2, Figure 1**), as is indicated by a major drop in near bottom concentrations of total phosphorus and soluble reactive phosphorus between August 20 and September 21, and a concomitant increase in surface concentrations. Following the delivery of P to surface waters in mid-September we observed the establishment of a major bloom of colonial cyanobacteria dominated by *Dolichospermum* that continued well into October.

To summarize, in 2019 we saw major blooms of cyanobacterial picoplankton in July and August. During that time, colonial cyanobacteria that typically form HABs were not abundant in the lake. Colonial cyanobacteria bloomed in late September, when surface waters had cooled and after a mixing delivered vast amounts of P to surface waters. It may be that picoplankton compete for light and nutrient supplies with colonial forms. What factors trigger the early summer picoplankton blooms and how the single cell blooms affect the onset of HABs caused by colonial cyanobacteria are fruitful areas for future studies in Conesus Lake.

## II. Stream Bank Restoration Project Update for Tributary Program

### *Background*

In March 2008, the Livingston County Planning Department conducted a preliminary study of several high priority impacted streams to collect baseline data on suspended solids prior to streambank restoration. Pre-remediation data on total suspended solids were collected during the summer of 2008 from stream reaches of North McMillan and Wilkins Creeks and North Gully. Results indicated that sediment erosion was more evident (highest to lowest) at North McMillan, Wilkins, and least at North Gully (Makarewicz et al. 2008).

The rationale for our project in 2019 was to assess the effectiveness of the 2008 streambank stabilization projects that were implemented as part of the Conesus Lake Watershed Management Plan. In summer and fall 2019, we conducted a follow-up study to assess the effectiveness of remediation efforts to reduce stream bank erosion and improve overall water quality conditions.

### *Methods*

Pre-remediation sampling was conducted on stream reaches of North Gully, North McMillan Creek, and Wilkins Creek in 2008 to provide a baseline for comparison. The 2008 sampling design was replicated in 2019 to compare nutrient and sediment loss under comparable streamflow conditions. Samples were collected monthly from July until October (4 sampling events) during base flow conditions. In addition, we also sampled immediately following one hydrometeorologic event (2 October 2019) (>0.5 inches of precipitation in a 24h period). Water samples were collected at one upstream (“Reference”) and one downstream (“Remediated”) site of stabilized segments on each of the three streams (six total sites) (**Table 6; Figure 10**).

Water samples were collected, preserved, and analyzed using approved standard methodologies. All water samples were collected, documented, handled, and delivered to a NYSDOH ELAP-certified laboratory (Life Sciences Lab, ELAP #10248). Samples were analyzed within standard hold times for total phosphorus (TP), soluble reactive phosphorus, nitrate + nitrite (NO<sub>x</sub>), and total suspended solids (TSS). Sample water for dissolved nutrient analysis (orthophosphate, NO<sub>x</sub>) was filtered immediately on site using 0.45- $\mu$ m syringe filters. One field blank and one field duplicate were collected during each sampling event. In addition, water temperature ( $^{\circ}$ C), specific conductivity ( $\mu$ S/cm), pH, dissolved oxygen (LDO - %

saturation; mg/L), and turbidity (NTUs) were measured using YSI ProDSS multiprobe meter that was calibrated immediately prior to each sampling event.

### ***Results and Discussion***

Total suspended solids (TSS) are a measure of suspended particles in water. This indicator is a measure of soil and sediment being carried by the water at a given location. In general, TSS was relatively low at each of the three streams during baseflow conditions, with levels below detection (4 mg/L) for all four sampling events on North McMillan Creek. In contrast to results in 2008, TSS concentrations during baseflow conditions was highest at Wilkins Creek and lowest at North McMillan Creek. We did not observe a consistent pattern during baseflow conditions for upstream versus downstream locations within each stream. TSS was marginally higher downstream of the stabilized segment for North Gully, but marginally higher upstream for Wilkins Creek. During post-storm event sampling in October, we observed a 285% increase in TSS in North Gully and a 200% increase in TSS in Wilkins Creek. The increase in TSS concentrations in North Gully post-storm event was higher for the upstream segment (~420%) when compared to the downstream segment (~178%). These data provide evidence that streambank stabilization on North Gully is reducing erosion. In contrast, the increase in TSS concentrations in Wilkins Creek was higher for the downstream segment (~290%) when compared to the upstream segment (~117%). TSS concentrations were below lab detection limits for North McMillan Creek during all five sampling events. Similar overall patterns were observed for turbidity and total phosphorus (**Figure 11**).

During sampling events, we noted several important observations. (1) On North Gully, we observed that vegetation that was necessarily removed for construction equipment to stabilize the stream bank does not appear to have recovered. Assisting the landowner with replanting would likely increase the benefits of stream bank stabilization in this segment. (2) A construction project began on a bridge near the downstream site on Wilkins Creek. Furthermore, the upstream and downstream segments on Wilkins Creek were separated by the greatest distance of the three streams due to property access. Thus, disturbance and erosion due to construction as well as distance likely confounded the effects of stream bank stabilization assessed for Wilkins Creek. (3) At North McMillan Creek, we observed that the stream bank stabilization has degraded over time and is beginning to collapse. In addition, we did not observe a significant increase in water level in North McMillan Creek in response to the storm event, when compared to the other two

streams (see photos in Appendix). Therefore, contrasting results may be found in North McMillan during storm events occurring earlier in the year (e.g., spring). We recommend that this site be revisited, and the streambank re-stabilized, if funding becomes available in the future.

### **Acknowledgements**

Funding for this work was provided by a grant from the Livingston County Planning Department. The authors would like to acknowledge the support given to our research program and to our student researchers by Anne Baldwin, Director of Sponsored Research SUNY Geneseo, and Betsy Colon, Contracts and Grants Associate SUNY Geneseo, and Laura Merkl at Contracts and Grants Administrator for the Research Foundation at SUNY Brockport.

## References

- Bosch I, D. Connors, C. McCabe, G. Wong, A. Bowling and A. Kubik. 2015. Linkage Between Water Column Mixing of Phosphorus and Onset of Cyanobacterial Blooms in Conesus Lake, NY. Report to the Livingston County Planning Department. 63 pp
- Bosch, I. E. Reiter, M. Roncone, K. Rounds, K. Warner, S. Guyton, S. Bosch and K. Hanafin. 2017. Monitoring of Water Quality, Water Column Mixing and Blooms of cyanobacteria in Conesus Lake (NY), Summer 2017. Report to the Livingston County Planning Department. 59 pp
- Bosch I. M. Chislock, K. Warner, E. Bell and K. Hanafin. 2018. Monitoring of Internal Phosphorus Loading, Water Column Mixing, Cyanobacterial Blooms and Dreissinid Mussels in Conesus Lake NY (Summer 2018) Report to the Livingston County Planning Department. 56 pp
- Forest, H.S., Wade, J.Q., and Maxwell, T.F. 1978. The Limnology of Conesus Lake. *In Lakes of New York State: Ecology of the Finger Lakes*, ed. J.A Bloomfield, pp. 122-225. New York: Academic Press
- Makarewicz, J.C., T.W. Lewis, and C. Severson. 2008 Conesus Lake 2008: Baseline Data on the Stream Bank Restoration Project, Update on Water Quality of USDA Monitored Watersheds. *Technical Reports* 34. [http://digitalcommons.brockport.edu/tech\\_rep/34](http://digitalcommons.brockport.edu/tech_rep/34)
- Makarewicz, J.C. and T. W. Lewis. 2009. Conesus Lake Limnology 2009: Water Quality of USDA Monitored Watersheds, Internal Hypolimnetic Phosphorus Loading, Lake Chemistry, and Status of the Zooplankton. Report to the Livingston County Planning Department. 67 pp. Available at *Technical Reports*. 9. [http://digitalcommons.brockport.edu/tech\\_rep/9](http://digitalcommons.brockport.edu/tech_rep/9)
- Makarewicz, J.C. and T. W. Lewis. 2014. Trophic Status of Conesus Lake 2014: Long-Term Trends in Lake Chemistry and the Plankton Community. Report to the Livingston County Planning Department. 69 pp. Available at *Technical Reports*. 130. [http://digitalcommons.brockport.edu/tech\\_rep/130](http://digitalcommons.brockport.edu/tech_rep/130)
- USEPA. 1979. *Methods for the Chemical Analysis of Water and Wastes*. Environmental Monitoring and Support Laboratory. Environmental Protection Agency. Cincinnati, Ohio. EPA-600/4-79-020
- USEPA and NYSDEC. 2019. Total Maximum Daily Load (TMDL) for Phosphorus in Conesus Lake, Livingston County, NY. 123 pp ([http://www.dec.ny.gov/docs/water\\_pdf/tmdlconesusaug2019.pdf](http://www.dec.ny.gov/docs/water_pdf/tmdlconesusaug2019.pdf))
- Wilczewska-Sliwiska-, S., J. Maculewicz, A. Barreiro Felpeito and A. Latala. 2018. Allelopathic and Bloom-Forming Picocyanobacteria in a Changing World. *Toxins* 10: 48 (22 pg).

## Tables and Figures

**Table 1.** Total phosphorus at various depths for all three Conesus Lake basins, showing near-bottom accumulation that is indicative of internal loading.

Depth	TP ( $\mu\text{g/L}$ )			
	<sup>a</sup> 26-Jun	23-Jul	20-Aug	22-Sep
<b>North Basin</b>				
3 m	31	24	12	33
8 m	19	14	14	27
Near-bottom 11 m	<b>22</b>	<b>13</b>	<b>140</b>	<b>15</b>
<b>Center Basin</b>				
3 m	28	23	13	31
8 m	23	16	11	21
10 m	23	12	61	23
Near-bottom 12 m	<b>25</b>	<b>99</b>	<b>190</b>	<b>47</b>
<b>South Basin</b>				
3 m	29	24	14	27
10 m	20	11	16	25
14 m	23	20	39	100
<b>16 m</b>	19	75	420	180
Near-bottom 18 m	56	300	580	160

<sup>a</sup>On 26 June 2019, the field blank was collected after sampling using distilled water and bottles from SUNY-Geneseo and contained detectable concentrations of soluble reactive phosphorus.

**Table 2.** Soluble reactive phosphorus concentrations for all three basins. Soluble reactive phosphorus samples marked by an \* are greater than their associated total phosphorus concentrations and are flagged.

Depth	SRP ( $\mu\text{g/L}$ )			
	<sup>a</sup> 26-Jun	23-Jul	20-Aug	<sup>a</sup> 22-Sep
<b>North Basin</b>				
3 m	< 2	9.2	*23	9
8 m	< 2	< 2	5.9	25
near bottom 11 m	< 2	16	120	39
<b>Center Basin</b>				
3 m	< 2	< 2	< 2	22
8 m	< 2	< 2	< 2	6.7
10 m	< 2	< 2	51	7.2
near bottom 13 m	< 2	69	190	42
<b>South Basin</b>				
3 m	< 2	9.8	*51	< 2
10 m	< 2	< 2	8.9	< 2
14 m	< 2	2.9	240	75
16 m	< 2	33	*580	150
near bottom 18 m	19	260	410	170

<sup>a</sup>On 26 June 2019, the field blank was collected after sampling using distilled water and bottles from SUNY-Geneseo and contained detectable concentrations of soluble reactive phosphorus.

<sup>b</sup>The result of the laboratory control sample was less than the established limit for samples collected on 22 September 2019.

**Table 3.** Picoplankton cell counts for June and July. Peak abundance values recorded on July 23 are highlighted in boldface.

Date	Location	Sample Depth (m)	Cell # x 10 <sup>3</sup> /mL Mean ± StDev	# Duplicate Counts
19-Jun-19	Long Pt. Dock	0.3	31.5 ± 6.3	4
24-Jun-19	Long Pt. Dock	0.3	37.5 ± 1.6	6
26-Jun-19	Northern Basin	3	33.3 ± 5.6	6
	Central Basin	3	33.3 ± 10.7	6
	Southern Basin	3	49.3 ± 3.3	6
2-Jul-19	Southern Basin	1	32.3 ± 8.6	8
8-Jul-19	Northern Basin	1	43.8 ± 4.8	10
		4	39.8 ± 6.3	10
	Central Basin	0.3	42.6 ± 5.7	10
		2	48.4 ± 8.6	10
	Southern Basin	1	25.4 ± 6.2	10
4	66.8 ± 8.6	10		
18-Jul-19	Northern Basin	4	205.3 ± 3.2	10
		7	33.8 ± 6.0	10
	Central Basin	4	190.2 ± 13.0	10
		7	5.3 ± 2.5	10
	Southern Basin	3	152.8 ± 7.0	10
7	34.7 ± 5.3	10		
19-Jul-19	Northern Basin	2	375.8 ± 25.1	10
		4	406.3 ± 33.6	10
20-Jul-19	Northern Basin	0.3	361.0 ± 33.1	10
		Southern Basin	1.0	400.3 ± 31.0
		3	324.5 ± 18.5	10
		5	87.8 ± 28.2	10
		7	64.7 ± 18.2	10
23-Jul-19	Northern Basin	0.3	<b>353.3 ± 44.5</b>	10
		3	<b>404.0 ± 58.0</b>	10
	Central Basin	0.3	<b>367.5 ± 39.3</b>	10
		3	<b>388.87 ± 37.7</b>	10
	Southern Basin	0.3	<b>578.8 ± 36.7</b>	10
3	<b>552.5 ± 25.3</b>	10		
26-Jul-19	Northern Basin	0.3	266.0 ± 14.5	10
		3	240.3 ± 21.0	10
		5	117.3 ± 17.1	10
	Central Basin	0.3	191.3 ± 10.0	10
		3	176.5 ± 25.2	10
	Southern Basin	0.3	296.5 ± 32.4	10
		3	262.7 ± 33.6	10
		5	248.0 ± 18.7	10
7	23.5 ± 4.9	10		
30-Jul-19	Northern Basin	0.3	24.0 ± 5.0	10
		3	40.0 ± 5.4	10
		5	28.5 ± 7.2	10
		7	22.0 ± 6.7	10
	Central Basin	0.3	35.3 ± 7.6	10
		3	29.0 ± 6.0	10
	Southern Basin	0.3	26.5 ± 4.7	10
		3	30.3 ± 7.2	10
		5	23.5 ± 6.6	10
		7	17.5 ± 5.8	10

**Table 4.** Picoplankton cell counts for August showing a second summer abundance peak reaching concentrations of nearly 300 thousand cells/mL on the 16th of August.

Date	Location	Sample Depth (m)	Cell # x 10 <sup>3</sup> /mL Mean ± StDev	# Duplicate Counts
1-Aug-19	Southern Basin	0.3	46.4 ± 4.0	10
		1	31.9 ± 4.8	10
		3	34.7 ± 4.9	10
		5	191.3 ± 10.0	10
		7	176.5 ± 25.2	10
8-Aug-19	Southern Basin	1	225.6 ± 9.0	10
		3	263.6 ± 31.7	10
		5	298.9 ± 39.9	10
		7	87.9 ± 10.6	10
13-Aug-19	Long Pt. Dock	1	312.2 ± 30.9	10
	Leisure Time Dock	1	339.7 ± 31.7	10
16-Aug-19	Southern Basin	1	205.8 ± 10.5	10
		3	211.1 ± 12.4	10
		5	296.9 ± 15.8	10
		7	199.3 ± 15.7	10
20-Aug-19	Southern Basin	1	53.6 ± 16.6	10
		3	52.8 ± 4.3	10
		5	66.7 ± 9.0	10
		7	112.2 ± 22.6	10

**Table 5.** Indicators of phytoplankton biomass include chlorophyll-*a*, phycocyanin ( a cyanobacterial pigment), water turbidity and Secchi depth. The maxima in these metrics (highlighted in boldface) generally correspond to the mid-July peak in picoplankton cell numbers and the late September bloom of colonial cyanobacteria.

Date	Chlorophyll-a 0-6 m (RFU)	Phycocyanin 0-6 m RFU	Turbidity (NTU)	Secchi Depth (m)
<b><i>North Basin</i></b>				
26-Jun	NA	NA	3.16	1.72
2-Jul	1.19	NA	3.71	2.20
8-Jul	1.77	0.16	2.51	2.30
18-Jul	<b>3.08</b>	<b>0.15</b>	<b>6.22</b>	<b>1.01</b>
23-Jul	NA	NA	<b>7.13</b>	<b>1.10</b>
16 Aug	NA	NA	NA	2.25
20-Aug	1.66	0.16	1.25	2.30
22-Sep	1.26	<b>0.57</b>	<b>2.58</b>	<b>1.95</b>
<b><i>Central Basin</i></b>				
26-Jun	NA	NA	2.82	1.83
2-Jul	1.28	NA	3.71	2.20
8-Jul	1.68	0.20	2.48	2.08
18-Jul	<b>2.78</b>	<b>0.18</b>	<b>5.86</b>	<b>0.90</b>
23 July	NA	NA	NA	<b>0.85</b>
20-Aug	1.31	0.13	1.35	2.30
22-Sep	1.06	<b>0.59</b>	<b>2.40</b>	2.30
<b><i>South Basin</i></b>				
26-Jun	NA	NA	2.71	1.71
2-Jul	NA	NA	NA	2.75
8-Jul	1.26	0.16	2.92	2.15
18-Jul	<b>3.13</b>	<b>0.12</b>	<b>5.66</b>	0.70
23-Jul	NA	NA	NA	0.65
26-Jul	<b>1.96</b>	<b>0.28</b>	<b>5.58</b>	<b>0.80</b>
1-Aug	2.21	0.00	1.66	2.20
16-Aug	1.38	0.17	NA	2.20
20-Aug	1.37	0.13	1.35	2.40
22-Sep	1.13	<b>0.42</b>	<b>2.00</b>	<b>2.20</b>

**Table 6.** Sampling locations, justifications, and data collection.

Site Code	Sampling Location	GPS Coordinates		Sample Justification	Field Measurements <sup>1</sup>	Water Chemistry <sup>2</sup>
		North	West			
NMUP	Upstream-North McMillan	42°43'29.6"	77°42'23.7"	Reference site	Multiprobe	nutrients and suspended sediment
NMDN	Downstream-North McMillan	42°43'32.2"	77°42'25.4"	Remediated site	Multiprobe	nutrients and suspended sediment
NGUP	Upstream-North Gully	42°46'42.1"	77°42'31.7"	Reference site	Multiprobe	nutrients and suspended sediment
NGDN	Downstream-North Gully	42°46'42.6"	77°42'36.9"	Remediated site	Multiprobe	nutrients and suspended sediment
WCUP	Upstream-Wilkins Creek	42°49'23.3"	77°40'50.0"	Reference site	Multiprobe	nutrients and suspended sediment
WCDN	Downstream-Wilkins Creek	42°49'23.4"	77°41'09.7"	Remediated site	Multiprobe	nutrients and suspended sediment

<sup>1</sup>Water temperature (°C), specific conductivity (µS/cm), pH, dissolved oxygen (LDO - %, mg/L), turbidity (NTUs).

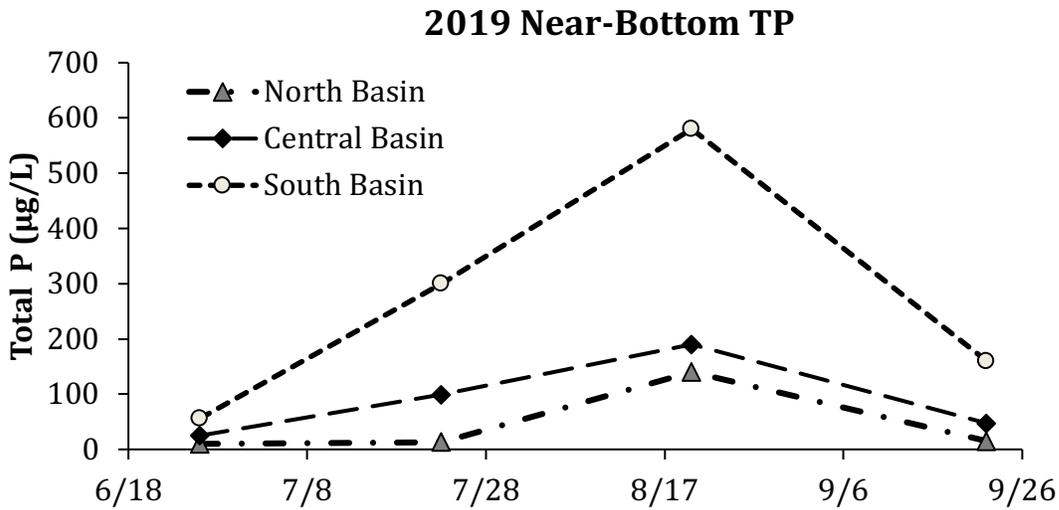
<sup>2</sup>Total phosphorus (TP), nitrate + nitrite (NO<sub>x</sub>), soluble reactive phosphorus (SRP), and total suspended solids (TSS).

**Table 7:** Water quality data (field measurements) for 2019 tributary sampling events.

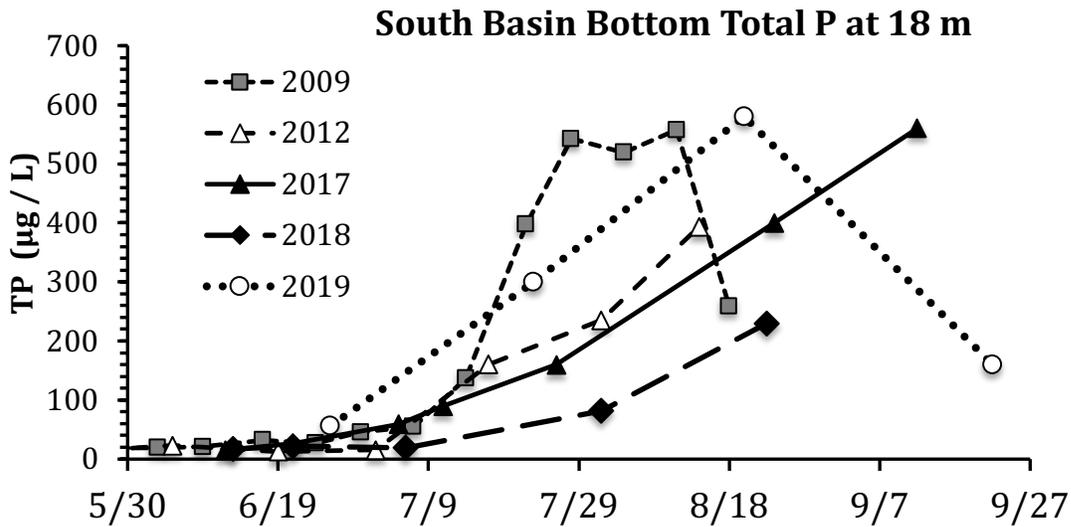
Site:	Date:	EVENT? Y or N:	Temperature (C):	Sp. Conductivity (uS/cm):	pH:	LDO (mg/L):	LDO (% saturation):	Turbidity (NTUs):
NGUP	7/23/2019	N	18.1	647	8.41	8.94	97.8	3.55
NGUP	8/13/2019	N	17.9	644	8.28	8.81	96.2	4.54
NGUP	9/18/2019	N	14.8	688	8.12	9.78	98.5	0.99
NGUP	10/2/2019	Y	17.2	586	8.25	8.88	95.6	22.8
NGUP	10/21/2019	N	8.9	750	8.32	11.73	103.8	0.62
NGDN	7/23/2019	N	18	643	8.47	9.13	99.6	3.52
NGDN	8/13/2019	N	18	639	8.31	8.96	98	2.98
NGDN	9/18/2019	N	14.1	681	8.16	10.76	103.6	1.05
NGDN	10/2/2019	Y	17.3	586	8.26	8.96	96.4	20.82
NGDN	10/21/2019	N	8.6	749	8.31	11.92	105	0.61
NMUP	7/23/2019	N	18	701	7.36	2.57	28	0.7
NMUP	8/13/2019	N	18.7	649	7.75	1.02	11.3	0
NMUP	9/18/2019	N	18.3	705	7.24	1.6	17.4	0.14
NMUP	10/2/2019	Y	18.9	714	7.4	2.13	23.7	0.29
NMUP	10/21/2019	N	15.5	761	7.66	4.06	42	0.1
NMDN	7/23/2019	N	14.4	649	7.79	5.66	56.3	2.57
NMDN	8/13/2019	N	17	666	7.88	5.25	56.3	1.33
NMDN	9/18/2019	N	16.3	707	7.39	5.52	57.5	0.15
NMDN	10/2/2019	Y	14.5	697	7.55	3.28	33.2	2.51
NMDN	10/21/2019	N	14.5	750	7.9	6.29	63.4	0.01
WCUP	7/23/2019	N	18.3	1114	8.3	8.63	94.9	1.38
WCUP	8/13/2019	N	18.7	1594	8.14	8.22	91.6	0.85
WCUP	9/18/2019	N	15.4	1493	7.93	9.79	100.2	0.48
WCUP	10/2/2019	Y	18.2	663	8.08	8.52	93.8	10.09
WCUP	10/21/2019	N	8.6	1204	8.21	11.47	101.2	0.48
WCDN	7/23/2019	N	18.4	1073	8.25	8.57	94.3	1.56
WCDN	8/13/2019	N	19	1470	8.06	7.85	87.9	0.98
WCDN	9/18/2019	N	15.2	1406	7.91	10.48	106.7	0.57
WCDN	10/2/2019	Y	18.5	684	7.93	8.29	91.4	18
WCDN	10/21/2019	N	8	1194	8	11.35	98.7	0.41

**Table 8:** Water quality data (lab measurements) for 2019 tributary sampling events. All chemical analyses were performed by Life Science Laboratories. Soluble reactive phosphorus samples marked by an \* are greater than their associated total phosphorus concentrations and are flagged.

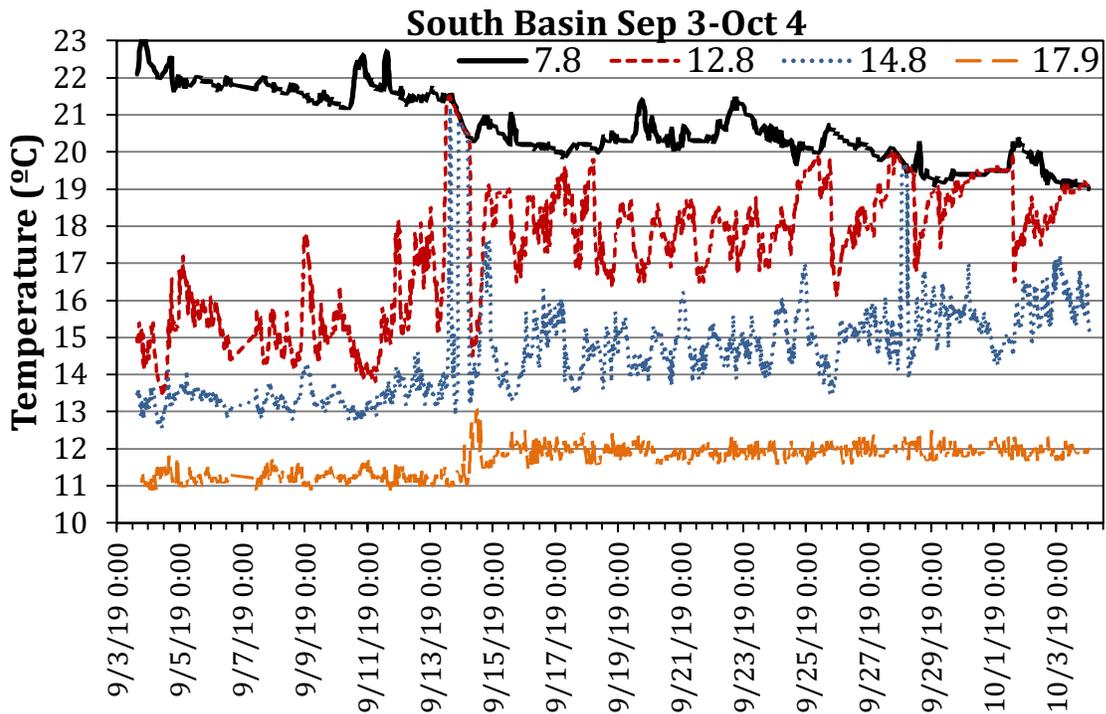
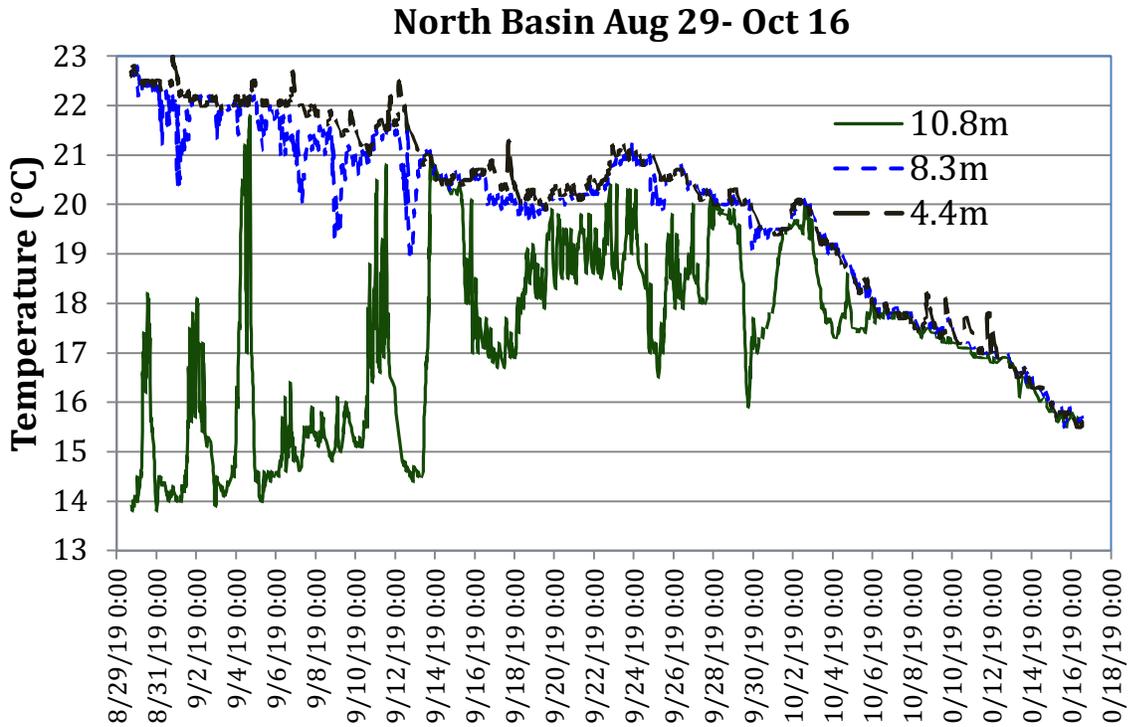
Site:	Date:	EVENT? Y or N:	TSS (mg/L)	Soluble Reactive Phosphorus (mg/L)	Total Phosphorus (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)
NGUP	7/23/2019	N	<4	0.021	0.042	0.33	<0.1
NGUP	8/13/2019	N	4.2	0.13*	0.027	0.36	<0.1
NGUP	9/18/2019	N	<4	0.03*	0.022	0.21	<0.1
NGUP	10/2/2019	Y	22	0.047	0.11	<0.1	<0.1
NGUP	10/21/2019	N	<4	0.019	0.027	0.46	<0.1
NGDN	7/23/2019	N	5.4	0.025	0.036	0.27	<0.1
NGDN	8/13/2019	N	<4	0.098*	0.021	0.38	<0.1
NGDN	9/18/2019	N	<4	0.068*	0.03	0.23	<0.1
NGDN	10/2/2019	Y	15	0.047	0.1	<0.1	<0.1
NGDN	10/21/2019	N	<4	0.02	0.021	0.46	<0.1
NMUP	7/23/2019	N	<4	0.33	0.017	0.32	0.1
NMUP	8/13/2019	N	<4	0.019*	0.0048	0.22	<0.1
NMUP	9/18/2019	N	<4	0.0064	0.0087	0.28	<0.1
NMUP	10/2/2019	Y	<4	0.016	0.021	<0.1	<0.1
NMUP	10/21/2019	N	<4	0.0046	0.0049	0.16	<0.1
NMDN	7/23/2019	N	<4	0.003	0.0054	0.31	<0.1
NMDN	8/13/2019	N	<4	0.018*	0.0058	0.14	<0.1
NMDN	9/18/2019	N	<4	0.0065*	0.0042	0.24	<0.1
NMDN	10/2/2019	Y	<4	0.0086	0.023	<0.1	<0.1
NMDN	10/21/2019	N	<4	0.026*	0.0047	0.13	<0.1
WCUP	7/23/2019	N	<4	0.045	0.058	0.57	0.1
WCUP	8/13/2019	N	4	0.036	0.044	0.52	<0.2
WCUP	9/18/2019	N	4.1	0.029	0.04	0.49	<0.2
WCUP	10/2/2019	Y	8.9	0.15*	0.11	0.38	<0.1
WCUP	10/21/2019	N	<4	0.023	0.033	0.18	<0.1
WCDN	7/23/2019	N	<4	0.047	0.06	0.39	<0.1
WCDN	8/13/2019	N	<4	0.079	0.079	0.36	<0.1
WCDN	9/18/2019	N	<4	0.061*	0.044	0.28	0.2
WCDN	10/2/2019	Y	16	0.065	0.13	0.31	<0.1
WCDN	10/21/2019	N	4.1	0.037	0.05	0.13	<0.1



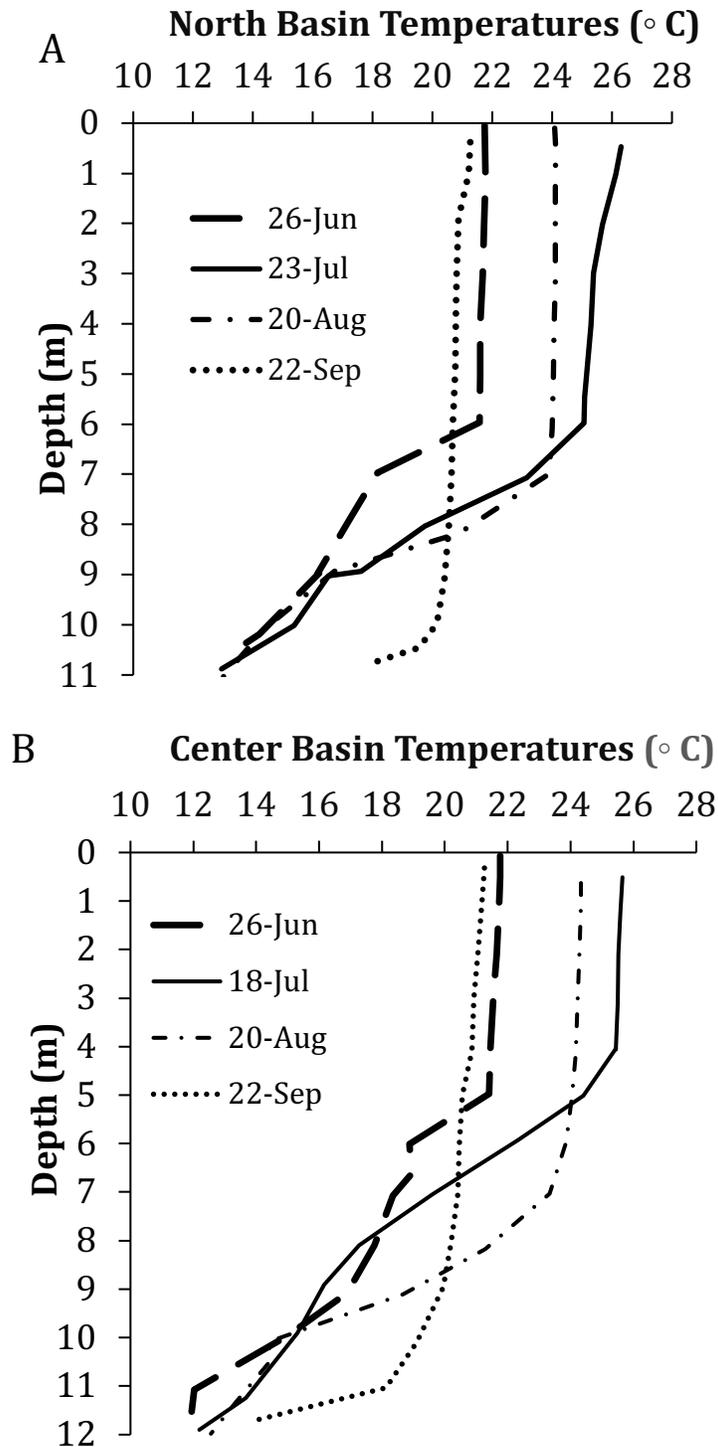
**Figure 1.** Total phosphorus concentrations within 1 m off the bottom shown for each of the three basins in Conesus Lake. The graphs show the high buildup in the deeper southern basin. Concentrations decline after the August 20 sampling most likely due to a mid-September mixing event.



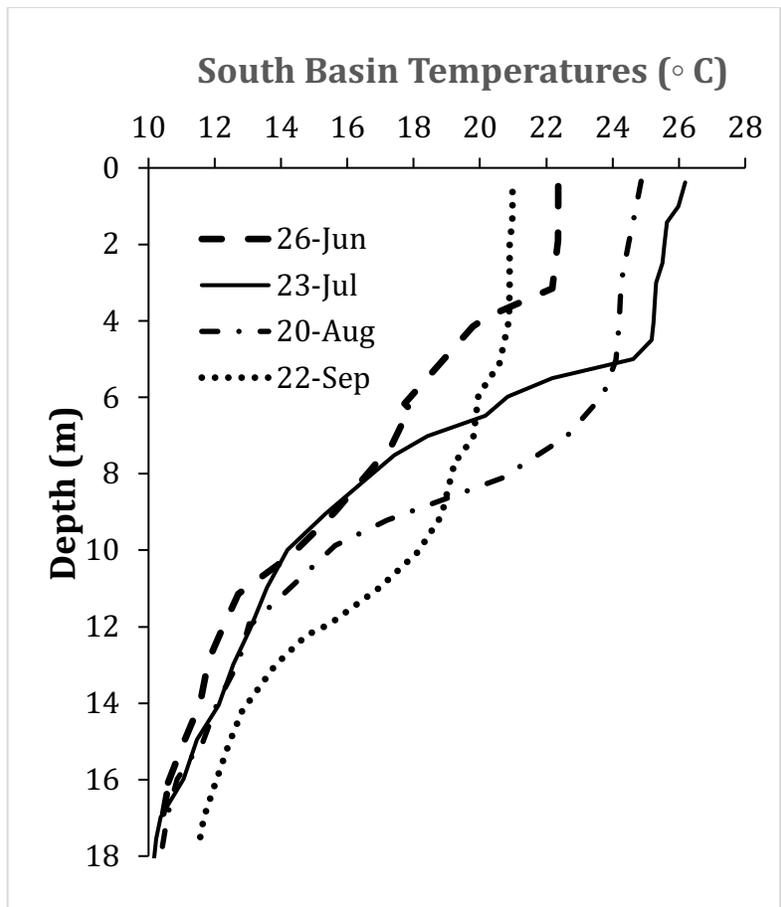
**Figure 2.** Buildup of total phosphorus near bottom in the deep southern basin based on 5 different studies. Maximum 2019 concentrations were comparable to those of previous years. In 2019, a sharp decline in concentrations after August was probably the result of a water column mixing. A similar phenomenon seems to have occurred in 2009.



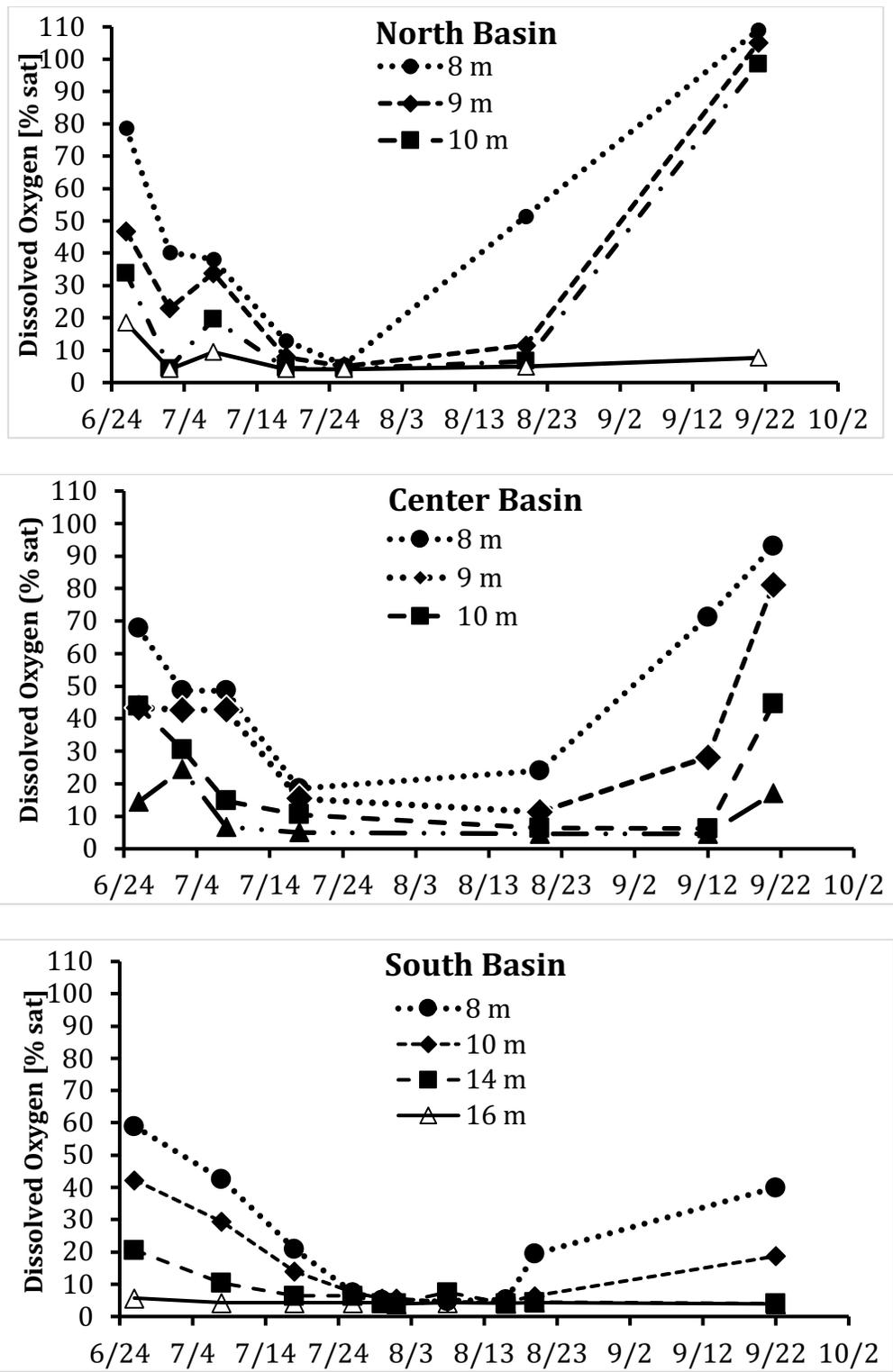
**Figure 3.** Data from *in situ* temperature arrays showing episodic spikes in deep water temperatures that we interpret as water column mixing events. The north basin shows frequent mixing events and both the north and south basins mixed essentially top to bottom during a Sept. 13-15 wind event.



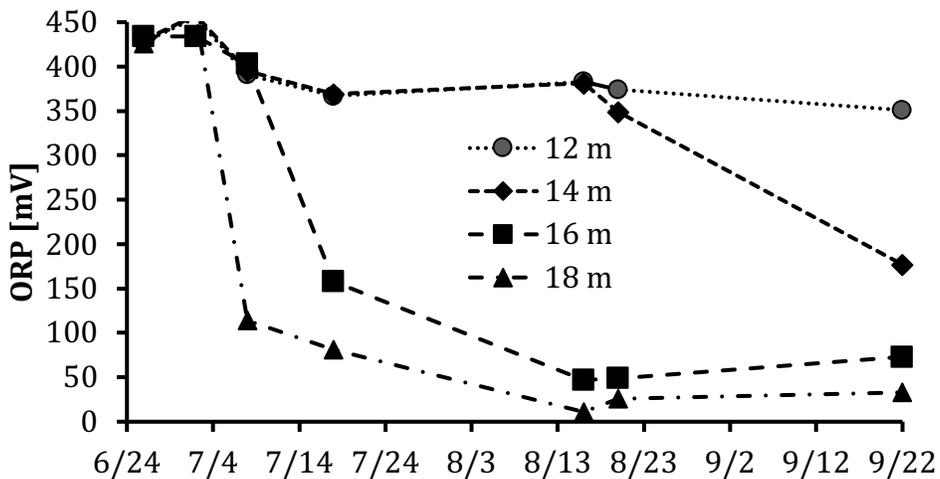
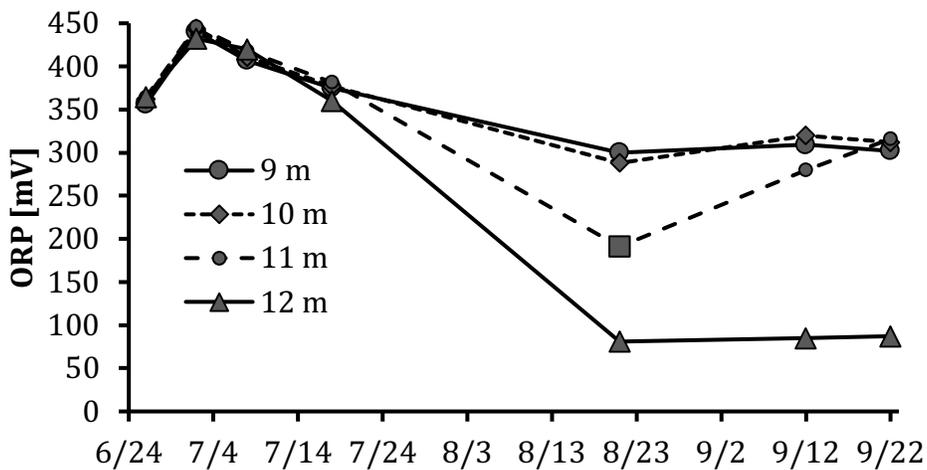
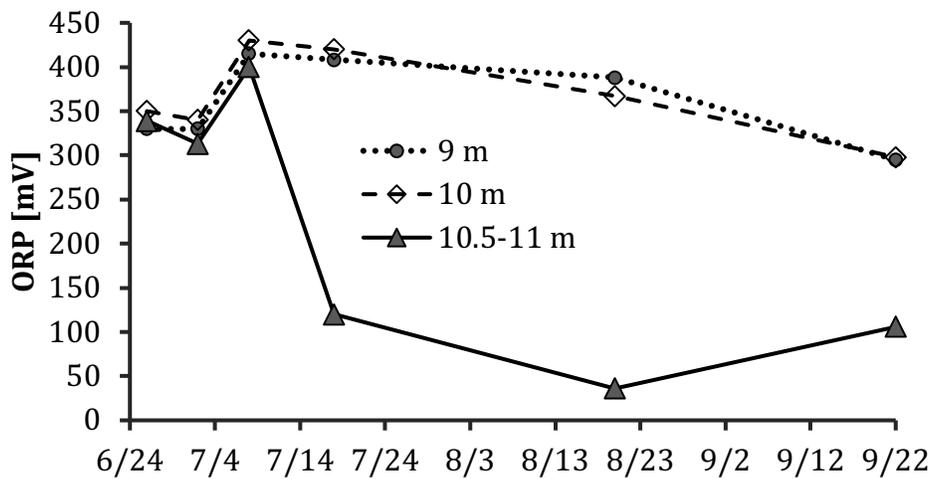
**Figure 4.** Temperature profiles showing trends in stratification in the shallower two basins of Conesus Lake. The North Basin stratification was prominent except in the September profile, by which time the mixed layer extended to a depth of 10 m (A). The stratification of the central basin is more pronounced, especially in the September profile (B).



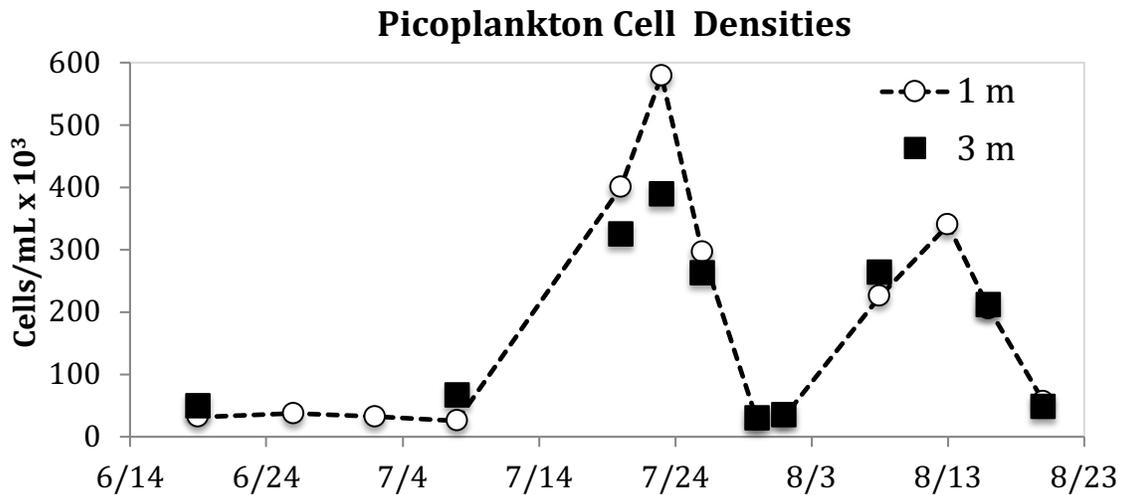
**Figure 5.** Temperature stratification in the deeper South Basin. This region has greater water column stability that is evident in the even in the 22 September profile.



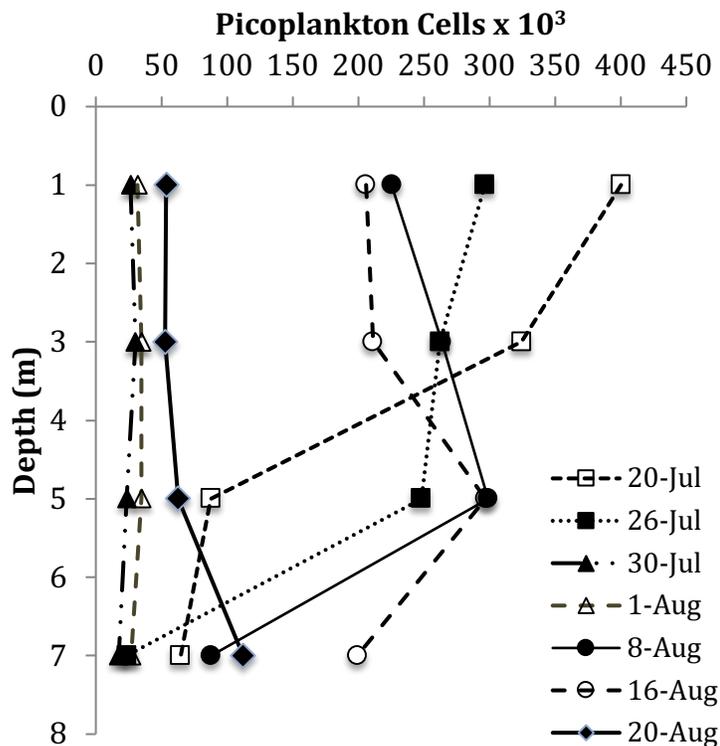
**Figure 6.** Hypolimnetic oxygen saturation in the three basins. In the South Basin, depths of 14 m and below (down to 18-20 m depth) remain without oxygen from early July well into September. This creates an ideal environment for internal loading of phosphorus.



**Figure 7.** Low oxidation reduction potentials near the bottom in the north (top), center and south basins of Conesus Lake (bottom). ORP values below ~150 mV reflect a chemical environment that promotes release of relic phosphorus from the sediments into the water. These conditions are more prominent in deep water regions of the south basin.



**Figure 8.** Picoplankton cell numbers in surface waters of the south basin. Peaks in abundance were occurred between the 8<sup>th</sup> and the 26<sup>th</sup> of July and high values were first found on July 20. There was a drop in cell numbers near the surface in late July and early August but a second lower peak occurred in mid-August. Counts were made by fluorescence microscopy.



**Figure 9.** Vertical distribution of picoplankton, showing that the highest densities were usually in the upper 5 meters of the water column. Blooms (high cell counts) as well as periods of relatively low cell counts are shown.

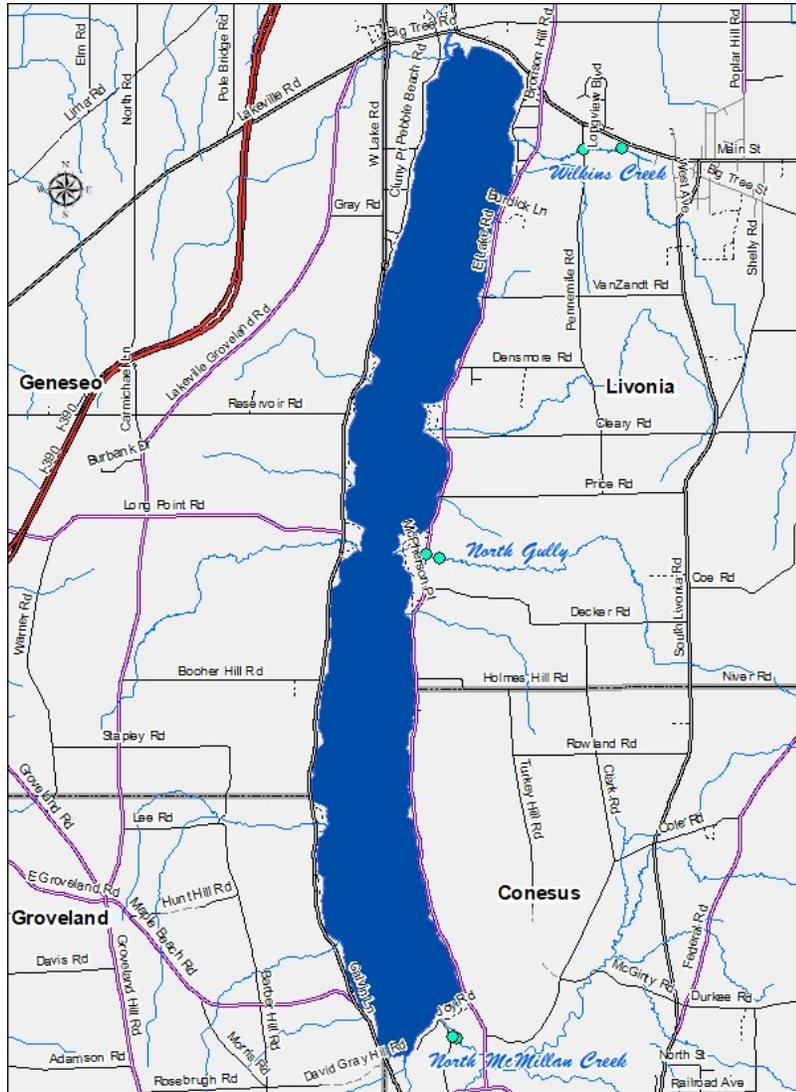
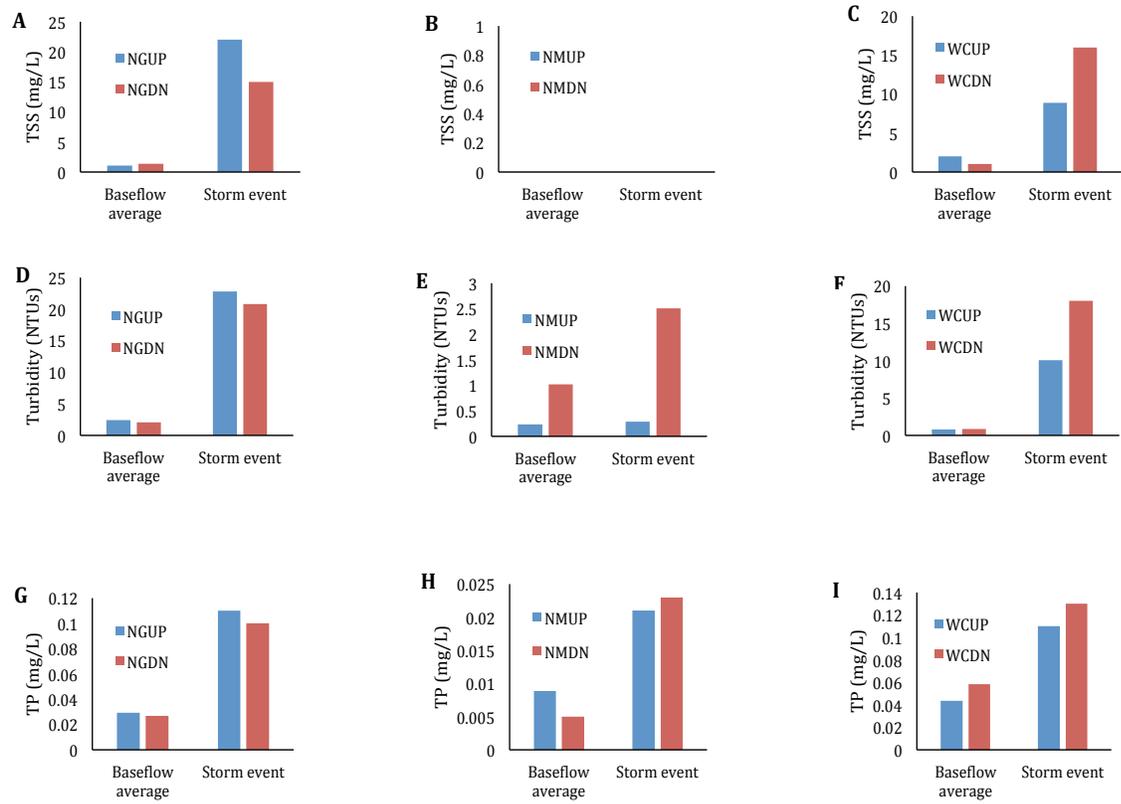


Figure 10: Map of Site Locations. Coordinates of sites are provided in Table 6.



**Figure 11:** (A)-(C) Total suspended solids (TSS), (D)-(F) turbidity, and (G-I) total phosphorus (TP) concentrations upstream and downstream of remediated segments for each of the three streams. “NG” = North Gully; “NM” = North McMillan Creek; and “WC” = Wilkins Creek. Mean concentrations for each parameter are calculated for baseflow conditions and compared to storm event conditions. Missing bars indicate that data were below method reporting levels.

## Appendices

### Appendix I. Hydrolab and YSI Profiles, Turbidity and Secchi Depth

#### North Basin 6/26/2019

Depth (m)	Temp [°C]	pH	ORP [mV]	Conduc-tivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbid-ity NTUs
0.05	21.75	8.41	277	434	131.4	11.53	NA	NA	3.16
0.5	21.77	8.35	281	433	131.8	11.56	NA	NA	
1.08	21.77	8.35	283	433	132	11.58	NA	NA	
2.08	21.71	8.32	287	433	132.5	11.64	NA	NA	
3.03	21.67	8.29	290	433	132.2	11.62	NA	NA	
4.04	21.59	8.27	292	433	131	11.53	NA	NA	
5.05	21.59	8.26	295	433	130.9	11.52	NA	NA	
5.96	21.57	8.24	297	433	128.6	11.33	NA	NA	
5.96	21.57	8.24	297	432	128.7	11.33	NA	NA	
6.97	18.16	7.81	318	444	79.9	7.53	NA	NA	
7.92	17.2	7.74	321	445	78.7	7.56	NA	NA	4.23
8.97	16.16	7.4	332	446	46.8	4.6	NA	NA	
8.97	16.2	7.39	331	445	48.5	4.76	NA	NA	
8.97	16.2	7.39	331	445	48.5	4.76	NA	NA	
10.19	14.21	7.19	337	448	33.8	3.46	NA	NA	5.86
10.65	13.04	7.15	339	451	18.5	1.94	NA	NA	

#### North Trough 6/26/2019

Depth (m)	Temp [°C]	pH	ORP [mV]	Conduc - tivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbid-ity NTUs
0.48	21.94	8.11	409	432	130.6	11.42	NA	NA	
1.09	21.9	8.03	413	432	130.7	11.44	NA	NA	
1.96	21.76	8.01	413	432	130.7	11.47	NA	NA	
3.01	21.68	8.02	412	433	130.8	11.5	NA	NA	
4.04	21.63	8.03	409	433	128.2	11.29	NA	NA	
5.05	21.57	8.05	407	433	128	11.27	NA	NA	
6.06	21.48	8.02	407	433	125	11.03	NA	NA	
8.08	16.42	7.48	429	446	58.9	5.75	NA	NA	
9.43	15.41	7.3	433	447	48.9	4.88	NA	NA	
10.23	14.4	7.22	435	448	40.4	4.12	NA	NA	
10.93	13	7.16	438	449	29.6	3.12	NA	NA	
11.74	12.14	7.06	193	454	6.1	0.66	NA	NA	

North Basin 7/2/2019

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.55	23.78	8.47	314	437	126.9	10.71		NA	
0.87	23.78	8.45	316	437	126.8	10.7	1	NA	
1.33	23.77	8.44	315	438	125.8	10.62		NA	
2.32	23.58	8.42	314	438	124.7	10.57	1.37	NA	
3.13	23.19	8.36	313	438	119.5	10.2		NA	
3.91	22.9	8.24	308	438	115.6	9.92		NA	
3.93	22.91	8.29	310	438	116.3	9.98	1.29	NA	
5.01	22.5	7.95	312	439	105.2	9.1		NA	
5.94	19.31	7.49	321	447	63.7	5.87	1.08	NA	
5.94	19.4	7.52	321	449	63.7	5.85		NA	
6.78	18.53	7.34	319	450	56.5	5.28		NA	
7.95	17.39	7.1	321	452	40.3	3.86	0.6	NA	
9.07	15.22	6.99	320	454	22.9	2.29		NA	
10.03	12.95	6.94	315	458	4.2	0.45	0.91	NA	
10.04	12.96	6.94	315	461	4.3	0.45		NA	
10.05	12.97	6.94	316	458	4.4	0.46		NA	
10.67	12.37	6.94	313	464	4.1	0.44		NA	

North Basin 7/8/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.5	25.71	8.53	388	441	129.1	10.51			
1.22	25.36	8.48	386	441	130.9	10.73	1.63	0.07	
2.33	25.16	8.44	388	438	131.1	10.79			2.23
2.98	25.09	8.44	386	440	129.3	10.66	2.26	0.18	
3.96	24.85	8.39	386	439	125	10.34			
4.9	24.31	8.29	388	442	113.1	9.45	1.6	0.18	
5.94	20.36	7.83	402	453	61.2	5.52	1.07	0.15	
7.07	18.73	7.6	410	456	45.5	4.24			
8.11	17.71	7.5	413	458	38.3	3.64	0.42	0.08	
8.99	16.79	7.46	414	459	33.8	3.27	0.35	0.06	
9.91	14.87	7.4	417	461	19.6	1.98	0.27	0.07	
10.52	13.97	7.3	420	463	9.4	0.97			

**North Basin 7/18/2019**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (%Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.62	25.61	7.69	406	429	129.8	10.6			
1.1	25.61	7.79	403	429	130.5	10.65	2.95	0.15	
2.02	25.58	7.82	402	430	129.2	10.55	3.26	0.18	
3.08	25.55	7.87	399	430	127.4	10.41	2.97	0.18	
4.16	25.49	7.89	397	431	125.9	10.3	2.97	0.14	6.22
5.26	25.21	7.78	397	433	110.7	9.1	3.25	0.14	
6.13	19.66	7.15	411	465	27.2	2.49	1.35	0.2	
7.19	18.22	7.02	414	468	19.5	1.84	0.96	0.25	10.87
8.28	16.15	6.89	417	471	12.9	1.27	0.54	0.27	
9.16	15.45	6.8	419	471	7.8	0.77	0.45	0.25	
10.15	14.01	6.74	420	473	4.6	0.47	0.4	0.14	
10.63	13.46	6.68	425	472	4.2	0.44			
11.09	12.82	6.61	120	485	4.1	0.43			

**North Basin 7/23/2019**

Depth (m)	Temp [°C]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.47	26.3	428	123.4	9.95	NA	NA	
1.02	26.12	428	124.3	10.05	NA	NA	6.47
1.48	25.92	428	124.1	10.07	NA	NA	
2.02	25.68	428	123.6	10.08	NA	NA	
2.51	25.54	427	123.4	10.08	NA	NA	
2.99	25.38	428	122.1	10.01	NA	NA	7.34
3.48	25.32	428	120.6	9.89	NA	NA	
4.02	25.29	428	119.4	9.8	NA	NA	
4.52	25.25	428	118.5	9.74	NA	NA	
5.46	25.09	429	113.2	9.33	NA	NA	
5.98	25.05	429	111.2	9.17	NA	NA	7.56
6.44	24.63	434	98.9	8.22	NA	NA	
7.07	23.14	455	36.7	3.13	NA	NA	
7.24	22.52	461	17.9	1.55	NA	NA	
7.5	22.1	466	15	1.3	NA	NA	
8.03	19.74	479	5.5	0.51	NA	NA	3.82
9.02	16.53	483	4.1	0.4	NA	NA	
10.01	15.38	485	4	0.4	NA	NA	
10.88	12.95	487	4.1	0.43	NA	NA	4.91

North Basin 8/20/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.1	24.08	8.42	393	441	164.8	13.83			
0.55	24.12	8.32	389	440	102.5	8.6			
1.01	24.11	8.36	384	440	103.4	8.67	1.58	0.2	1.2
1.54	24.11	8.35	384	440	103.4	8.68			
3.16	24.11	8.34	380	441	103.5	8.68	1.6	0.16	1.25
4.07	24.06	8.34	379	440	103	8.65	1.81	0.18	
5.03	24.04	8.33	377	440	102.5	8.61	1.66	0.11	1.3
6.1	23.99	8.29	377	440	101.3	8.52	1.48	0.15	
7	23.88	8.25	376	440	96.7	8.15	1.39	0.14	1.5
8.17	20.88	8.02	382	468	51.4	4.59	1.16	0.17	
8.94	16.71	7.73	388	484	11.5	1.12	2.22	0.29	
10.07	14.41	7.54	367	490	6.6	0.68	0.5	0.28	
11.05	12.99	7.27	36	501	4.9	0.52			1.5

North Basin 8/20/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)
0.55	24.33	8.43	309	442		
1.12	24.33	8.42	309	442	105.5	8.82
1.18	24.32	8.42	308	442	105.3	8.8
2.02	24.31	8.42	308	442	105.6	8.83
2.99	24.26	8.41	308	441	105.8	8.85
2.99	24.26	8.41	307	441	105.1	8.8
3.95	24.22	8.4	308	441	104.9	8.79
5.26	24.16	8.38	309	441	103.7	8.69
5.98	23.99	8.34	310	441	99.1	8.33
5.99	23.99	8.33	310	441	98.5	8.28
6.96	23.69	8.27	312	443	94.1	7.96
7.97	21.6	8.1	319	464	46.7	4.11
8.94	17.45	7.88	328	488	13.2	1.27
10.18	15.34	7.74	336	489	8.1	0.81
10.97	13.24	7.68	178	493	6.4	0.67
11.41	12.83	7.51	46	500	5	0.53

North Basin 9/22/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.38	21.26	8.45	287	442	117.4	10.4			
1	21.21	8.44	289	442	117.3	10.4	1.21	0.55	
1.9	20.86	8.42	290	443	116.6	10.41	1.3	0.57	
2.99	20.81	8.4	291	443	114.4	10.23	1.35	0.59	2.58
3.1	20.81	8.4	291	443	114	10.19			
3.62	20.79	8.4	291	443	113.9	10.19			
4.9	20.76	8.4	292	444	112.9	10.09	1.19	0.63	
6.01	20.68	8.38	293	444	112.3	10.06	1.24	0.58	
7.01	20.63	8.37	293	444	109.7	9.84	1.33	0.51	
8	20.55	8.36	294	443	108.9	9.78	1.34	0.44	2.00
9.08	20.4	8.31	295	442	105.2	9.48	1.14	0.34	
9.98	20.14	8.25	298	441	98.4	8.91	0.99	0.25	
10.46	19.54	7.88	311	445	45.7	4.19			
10.73	18.14	7.62	106	456	7.7	0.72	1.33	0.44	3.05

Center Basin 6/26/2019

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.07	21.76	8.44	309	433	133.4	11.7	N/A	N/A	
0.51	21.76	8.35	314	433	133.7	11.73	N/A	N/A	
0.99	21.74	8.3	317	433	132.9	11.67	N/A	N/A	
2.1	21.65	8.23	322	433	132.3	11.63	N/A	N/A	
2.91	21.56	8.23	322	433	131.4	11.57	N/A	N/A	2.82
4.06	21.45	8.21	324	432	129.7	11.45	N/A	N/A	
4.97	21.41	8.2	325	432	127.5	11.26	N/A	N/A	
6.01	18.88	7.81	341	442	85.4	7.93	N/A	N/A	
6.63	18.93	7.79	342	441	85.4	7.92	N/A	N/A	
7.07	18.34	7.71	344	443	81.1	7.61	N/A	N/A	
8.1	17.76	7.63	347	444	75.5	7.17	N/A	N/A	
9.08	16.9	7.55	350	446	67.8	6.56	N/A	N/A	4.73
10.03	14.87	7.41	356	448	43.4	4.38	N/A	N/A	
10.01	14.87	7.4	356	448	43.8	4.42	N/A	N/A	
11.07	12.02	7.27	362	451	15.7	1.69	N/A	N/A	5.20
11.61	11.93	7.21	364	452	14.2	1.53	N/A	N/A	
12.04	11.93	7.18	364	452	13.7	1.47	N/A	N/A	

**Center Basin 7/2/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.73	23.99	8.41	405	436	128.6	10.81	1.36	N/A	3.71
1.41	23.78	8.3	410	437	127.7	10.78		N/A	
3.06	23.03	8.19	415	437	125.4	10.73		N/A	
4.41	22.54	8.14	415	437	119.6	10.34	1.08	N/A	
5.1	21.53	7.99	419	441	105.2	9.27		N/A	
5.94	21.17	7.87	422	442	93.3	8.28	1.4	N/A	5.65
7.07	17.51	7.45	436	451	51.5	4.92		N/A	
7.96	16.82	7.36	438	449	48.7	4.71	0.57	N/A	
8.92	16.06	7.3	440	450	42.8	4.21		N/A	
9.94	14.77	7.17	444	452	30.5	3.09	0.5	N/A	
10.68	13.84	7.13	446	455	24.3	2.5		N/A	
11.97	12.63	7.04	432	453	16.1	1.7		N/A	
11.99	12.64	7.04	432	455	16	1.7		N/A	

**Center Basin 7/08/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.53	25.59	8.6	372	439	134.2	10.96			2.1
1.07	25.24	8.57	374	439	135.3	11.11	1.58	0.14	2.85
1.67	25.24	8.57	375	438	135.2	11.11			
1.99	25.06	8.53	377	439	134.7	11.1	2.08	0.28	
3.23	24.81	8.49	379	441	130.8	10.83	2.06	0.27	
4.47	23.92	8.35	384	444	111.2	9.36			
5.95	22.64	8.16	390	446	91.4	7.88	1.01	0.11	
6.81	19.73	7.93	399	455	59	5.39	0.66	0.07	
8.05	17.39	7.81	404	457	42	4.02	0.4	0.09	
9	15.96	7.72	407	460	29.2	2.89	0.28	0.11	
10.05	13.74	7.64	411	463	14.7	1.52	0.32	0.16	
11.04	12.51	7.57	418	466	6.7	0.71			
11.79	12.41	7.53	420	467	5.2	0.55			
11.92	12.33	7.5	420	468	4.8	0.52			

**Center Basin 7/18/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.51	25.65	8.18	337	429	132.5	10.8			
1.28	25.59	8.13	340	429	132.9	10.85	2.95	0.12	
2.1	25.52	8.04	345	431	131.2	10.72	3.07	0.12	
3.11	25.5	8.02	347	430	130.3	10.66	3.16	0.15	
4.05	25.43	7.95	349	431	117.5	9.62	3.13	0.18	5.86
4.04	25.43	7.95	349	431	118.2	9.68			
5.01	24.4	7.73	355	444	94.5	7.89	2.6	0.19	
5.93	22.32	7.33	364	457	50.2	4.36	1.75	0.3	
7.05	19.6	7.05	371	465	26.2	2.4	1.02	0.36	2.57
8.09	17.28	6.96	374	469	18.5	1.78	0.85	0.37	
8.91	16.17	6.9	375	470	15.4	1.51	0.5	0.41	
9.9	15.31	6.83	377	470	10.6	1.06	0.5	0.4	
11.24	13.67	6.77	382	469	5.1	0.53			
11.9	12.19	6.7	360	474	4.5	0.48			

**Center Basin 8/20/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.63	24.33	8.44	276	442	106.6	8.9			
1.07	24.33	8.41	278	442	106.6	8.9	1.07	0.14	
2.01	24.28	8.4	279	442	106.5	8.91	1.62	0.14	
3.05	24.23	8.4	279	442	107	8.96	N/A	0.2	1.35
4.16	24.17	8.39	280	442	106.3	8.91	N/A	0.2	
5.04	24.05	8.34	281	443	99.5	8.36	1.33	0.14	
5.97	23.86	8.28	284	443	92.8	7.82	1.21	0.09	
7.03	23.33	8.16	288	447	78.8	6.71	0.84	0.09	
8.18	21.28	7.9	297	462	24	2.12	0.79	0.13	1.3
9.1	18.68	7.81	300	474	11.3	1.05	0.69	0.42	
10.08	14.44	7.68	288	484	6.4	0.65	0.53	0.45	2.25
10.54	14.38	7.62	274	484	5.6	0.57			
11.33	13.35	7.42	109	486	4.7	0.49	0.35	0.33	
11.98	12.56	7.37	81	487	4.6	0.49	0.3	0.27	2.1

**Center Basin 9/12/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.51	21.71	8.42	286	446	103.6	9.1	N/A	N/A	
0.99	21.71	8.41	286	446	103.9	9.12	N/A	N/A	
2	21.71	8.41	287	446	103.2	9.06	N/A	N/A	
2.99	21.7	8.39	289	446	103.6	9.1	N/A	N/A	
4	21.69	8.41	289	446	102.9	9.04	N/A	N/A	
4.95	21.68	8.41	289	446	102.1	8.98	N/A	N/A	
6.08	21.58	8.36	292	447	98.2	8.64	N/A	N/A	
7.03	21.21	8.24	296	451	86.8	7.7	N/A	N/A	
7.99	20.78	8.12	301	455	71.2	6.36	N/A	N/A	
8.99	19.3	7.92	309	465	28.2	2.6	N/A	N/A	
9.92	16.76	7.72	320	481	6.2	0.6	N/A	N/A	
10.94	15.98	7.66	280	486	4.8	0.47	N/A	N/A	
12	14.94	7.6	212	487	4.6	0.46	N/A	N/A	

**Center Basin 9/22/19**

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.32	21.26	8.4	288	445	112.2	9.94			
0.99	21.18	8.4	289	445	112.5	9.98	1.17	0.44	
2	21.07	8.41	289	446	113.5	10.09	1.21	0.52	
3.02	20.93	8.44	290	445	114.1	10.17	1.33	0.65	2.4
4.09	20.87	8.43	290	445	113.8	10.16	1.36	0.76	
5	20.56	8.37	292	446	106.7	9.58	1.27	0.58	
6.07	20.45	8.33	294	446	101.9	9.17	1.17	0.43	
7.03	20.41	8.31	295	445	100.9	9.09	1.1	0.38	
8.07	20.2	8.22	298	446	93.1	8.42	0.86	0.29	1.55
8.96	19.94	8.08	302	446	81.3	7.39	0.72	0.2	
10.1	19.09	7.74	312	450	44.6	4.12	0.53	0.19	1.8
11.03	18.13	7.58	316	457	17	1.61			
11.7	14	7.42	87	489	4.1	0.42			3.05

South Basin 6/26/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.48	22.36	8.27	397	429	124.9	10.83	N/A	N/A	
0.97	22.36	8.24	397	431	124.9	10.83	N/A	N/A	
1.9	22.35	8.26	395	431	124.5	10.8	N/A	N/A	
3.15	22.18	8.21	398	431	123	10.71	N/A	N/A	2.71
3.9	20.2	8.02	404	435	98.7	8.93	N/A	N/A	
4.16	19.78	7.92	407	436	86.3	7.87	N/A	N/A	
6.21	17.91	7.58	416	443	68.2	6.46	N/A	N/A	
7.25	17.34	7.54	416	444	66.1	6.33	N/A	N/A	
9	15.63	7.45	420	446	52.7	5.23	N/A	N/A	
10.11	14.33	7.36	423	446	42.3	4.32	N/A	N/A	5.66
11.15	12.7	7.31	425	448	30.6	3.24	N/A	N/A	
12.12	12.19	7.22	428	449	22.7	2.43	N/A	N/A	
12.89	11.81	7.17	430	449	19.5	2.11	N/A	N/A	
14	11.55	7.13	430	449	20.6	2.24	N/A	N/A	5.71
15.03	11.05	7.09	432	449	18.4	2.02	N/A	N/A	
16.16	10.55	7.03	434	453	5.7	0.63	N/A	N/A	5.4
15.97	10.64	7.04	434	452	5.4	0.6	N/A	N/A	
17.01	10.42	7.01	426	454	4.6	0.51	N/A	N/A	4.35

South Basin 7/8/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.55	25.7	8.48	350	441	129	10.52			
0.96	25.4	8.47	353	440	133.4	10.93	1.12	0.07	2.92
1.95	25.3	8.49	354	438	134.8	11.06	1.58	0.15	
3.12	25.01	8.48	355	439	133.7	11.03	2	0.24	
3.93	24.81	8.47	356	439	132.5	10.97	2.01	0.21	
5.79	21.43	8.17	367	451	79.3	7	0.95	0.14	3.08
7.07	18.28	7.9	377	457	50.4	4.74	1.05	0.18	
8.1	16.95	7.81	381	460	42.5	4.11	0.62	0.15	
9.01	15.92	7.7	385	460	31.6	3.12	0.53	0.12	
9.92	15.49	7.64	387	460	29.4	2.93	0.32	0.09	
10.9	14.08	7.59	389	461	20.3	2.08	0.32	0.09	
12.09	13.04	7.56	391	459	24	2.52			
12.84	12.33	7.5	393	464	11.2	1.2			
13.95	11.93	7.46	395	460	10.4	1.12			
15.09	11.29	7.42	399	462	6	0.65			
15.84	10.86	7.39	403	464	4.6	0.51			
16.96	10.38	7.35	166	475	4.4	0.49			
17.47	10.36	7.35	135	474	4.3	0.48			
17.77	10.35	7.33	122	473	4.2	0.47			
18.08	10.32	7.33	114	473	4.2	0.47			

South Basin 7/18/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.52	26.08	8.25	324	429	141.6	11.45			
1.26	25.77	8.22	326	429	141.7	11.53	2.2	0.21	
2.18	25.56	8.13	329	431	136.5	11.15	3.7	0.01	
2.76	25.45	8.11	331	431	134.6	11.02	3.51	0.13	
4	24.93	8.05	334	435	123.1	10.17	3.26	0.1	
5.08	24.56	7.91	338	442	105.2	8.75	2.96	0.17	5.66
6.26	22.2	7.41	351	457	49.3	4.29	2.48	0.23	
6.28	22.28	7.3	353	457	46.3	4.02			
7.56	20.38	7.18	357	463	30.4	2.74	1.2	0.36	3.27
8.19	17.8	7.08	360	469	20.9	1.98	0.87	0.39	
9.35	15.84	7.03	362	466	19.1	1.89	0.45	0.45	
10	14.36	6.96	364	472	13.9	1.42	0.37	0.38	
10.89	13.75	6.92	365	468	15.6	1.61			
11.99	12.85	6.84	367	472	6.3	0.66			
12.9	12.35	6.79	368	469	6.9	0.74			
14.13	12.02	6.75	369	469	7.5	0.8			
15.2	11.49	6.72	370	466	6.3	0.69			
16.34	10.58	6.66	158	479	4.2	0.47			
17.09	10.35	6.66	117	479	4.1	0.46			
17.68	10.28	6.66	104	479	4.1	0.46			
18.15	10.17	6.66	81	483	4.1	0.46			

South Basin 7/26/19

Depth (m)	Temp [°C]	Conduc-tivity [µS/cm]	Oxygen % Sat	Oxygen mg/L	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.38	26.19	428	126.4	10.2			
1	25.99	425	125.8	10.2	1.4	0.25	5.95
1.43	25.63	427	125.2	10.22			
2	25.56	426	123.9	10.12	2.3	0.33	
2.49	25.5	427	123	10.06			
3.01	25.32	429	111.8	9.18	2.23	0.24	5.15
3.49	25.28	429	111	9.11			
4.03	25.24	430	111.4	9.15	2.15	0.26	
4.5	25.17	429	113.4	9.33			
5	24.63	441	78.2	6.5	2.38	0.29	5.65
5.5	22.19	467	16.3	1.42			
5.99	20.84	474	6	0.54	1.28	0.29	
6.48	20.17	476	6.4	0.58			
7.01	18.42	481	5	0.46	0.91	0.22	2.75
7.51	17.42	483	4.8	0.46			
7.98	16.79	481	7.4	0.71	0.7	0.23	
9.05	15.34	482	8.1	0.81	0.58	0.26	
10	14.18	480	7.5	0.77	0.55	0.33	
10.97	13.58	480	5	0.52			
12.07	13.05	477	5	0.52			
12.99	12.55	476	5.8	0.62			
14.05	12.11	474	6.4	0.68			
14.96	11.46	472	4.7	0.51			
15.98	11.05	480	4.1	0.45			
16.99	10.36	487	4	0.45			
17.55	10.23	488	4	0.45			
18.04	10.17	489	4	0.45			

South Basin 8/1/19

Depth (m)	Temp [°C]	Conduc-tivity [μS/cm]	Oxygen (% Sat)	Oxygen ( mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.42	25.53	426	106.6	8.71			
0.52	25.53	426	106.6	8.72			
1.01	25.35	426	106.4	8.72	1.84	-0.05	1.63
1.49	25.28	426	106.7	8.76			
2	25.28	426	106.2	8.72	2.17	-0.04	
2.01	25.28	426	106.3	8.72			
2.52	25.27	425	106.3	8.73			
3.01	25.24	426	106	8.71	2.21	-0.04	1.70
3.51	25.23	425	106	8.71			
4.51	25.21	425	105.2	8.65			
4.99	25.18	425	100.5	8.27	2.6	-0.04	2.05
5.53	24.72	429	84.2	6.98			
6.04	23.32	447	14.9	1.27	2.01	0.04	
6.55	21.78	460	4.9	0.43			
6.95	19.72	470	4.1	0.38	0.9	-0.05	1.28
7.47	17.84	474	4.1	0.39			
8.04	15.98	473	5.6	0.56	0.66	0	
8.98	14.87	475	4.5	0.46	0.57	0.12	
10.01	13.88	475	5.1	0.52	0.52	0.23	
11.12	13.15	471	4.2	0.44			
12	12.78	469	3.9	0.41			
13.03	12.29	472	3.9	0.42			
14.02	11.99	471	4.1	0.44			
14.98	11.46	468	3.9	0.43			
16.03	10.89	472	3.9	0.43			
17.07	10.35	486	3.9	0.44			

South Basin 8/8/2019

Depth (m)	Temp [°C]	Conduc-tivity [µS/cm]	Oxygen (% Sat)	Oxygen ( mg/L)	Chl - a RFUs	Phyco RFUs	Turbid-ity NTUs
0.52	25.17	443	95.5	7.86			N/A
1	25.17	443	95.3	7.84	1.22	-0.08	N/A
1.5	25.14	443	95.5	7.86			N/A
2.09	25.18	443	95.2	7.83	1.31	-0.08	N/A
2.52	25.18	444	95.3	7.84			N/A
3.09	25.13	443	94	7.74	1.25	-0.08	N/A
3.58	25.13	444	94.5	7.78			N/A
3.95	25.12	443	94	7.75	1.36	-0.08	N/A
4.48	25.09	444	93.4	7.69			N/A
5.6	21.96	471	32.1	2.8			N/A
5.98	20.91	477	7.4	0.66	1.29	-0.03	N/A
6.51	19.96	483	5.4	0.49			N/A
6.99	18.48	486	5.1	0.48	0.47	-0.01	N/A
7.47	17.77	488	4.9	0.46			N/A
8.01	17.01	488	4.8	0.47	0.48	0.14	N/A
9	15.21	491	4.5	0.45	0.49	-0.01	N/A
10.02	14.41	493	4.5	0.45	0.37	0.03	N/A
11.08	14.03	486	8.4	0.86			N/A
11.16	13.95	486	8.5	0.88			N/A
12.09	13.02	489	10.7	1.13			N/A
13.05	12.57	487	9.7	1.03			N/A
13.97	12.17	490	7.4	0.79			N/A
15.07	11.38	486	5	0.54			N/A
15.88	10.92	499	4.2	0.47			N/A
17.1	10.39	504	4.1	0.46			N/A
17.57	10.39	504	4.1	0.46			N/A

South Basin 8/16/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.41	25.16	8.18	359	444	106.9	8.8			N/A
0.76	25.11	8.18	358	444	107.1	8.82	1.15	0.12	N/A
1.55	24.88	8.17	358	441	107	8.85			N/A
2.94	24.47	8.17	358	442	106.8	8.9	1.49	0.22	N/A
3.98	24.32	8.14	359	441	105	8.78	1.91	0.22	N/A
5.03	24.23	8.07	360	440	96.6	8.08	1.32	0.13	N/A
6.04	23.58	7.89	366	445	76.9	6.52	1.05	0.16	N/A
6.56	22.31	7.61	375	455	38.2	3.32			N/A
7.01	20	7.46	379	473	9	0.82	0.92	0.15	N/A
7.51	18.89	7.43	379	476	6.4	0.6			N/A
7.89	17.81	7.37	379	481	5.2	0.49	0.62	0.26	N/A
8.99	15.83	7.34	380	484	4.7	0.47	0.46	0.28	N/A
10.02	14.24	7.29	381	484	4.5	0.46	0.38	0.12	N/A
11.16	13.56	7.25	383	481	4.2	0.44			N/A
11.91	13.05	7.21	383	480	4.1	0.43			N/A
12.67	12.73	7.21	382	479	4.2	0.44			N/A
12.98	12.46	7.18	381	479	4	0.43			N/A
14.13	11.95	7.17	381	480	4	0.43			N/A
14.96	11.49	7.13	202	485	4.1	0.44			N/A
16.11	10.72	7.06	47	494	4.1	0.46			N/A
16.97	10.48	7.04	21	496	4.1	0.45			N/A
17.51	10.34	7.03	11	497	4.1	0.46			N/A

South Basin 8/20/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conduc-tivity [μS/cm]	Oxygen (% Sat)	Oxygen ( mg/L)	Chl - a RFUs	Phyco RFUs	Turbid-ity NTUs
0.35	24.86	8.41	355	445	107.9	8.93			
1.16	24.67	8.42	353	445	108.4	9	0.77	0.07	
1.96	24.49	8.42	350	445	108	9	1.21	0.09	
3	24.25	8.4	349	444	105.8	8.86	1.89	0.17	1.35
4.05	24.19	8.36	349	444	105.2	8.81	2.09	0.18	
5.02	24.1	8.35	349	445	104.7	8.78	1.24	0.13	
5.93	23.71	8.22	353	447	83.8	7.08	1.02	0.11	1.35
7.01	22.62	8.05	358	456	60.2	5.2	0.94	0.15	
8.12	20.67	7.87	363	473	19.4	1.74	0.76	0.13	
9.21	17.2	7.64	369	489	6.7	0.65	0.71	0.24	
9.88	15.62	7.51	370	485	6.4	0.63	0.66	0.94	2.25
10.94	14.32	7.48	372	485	6.6	0.68			
11.94	13.09	7.45	374	484	4.7	0.5			
11.93	13.03	7.45	374	483	4.7	0.49			
12.94	12.71	7.42	372	483	4.4	0.47			
13.96	12.09	7.38	349	482	4.4	0.47			
15.25	11.53	7.33	215	488	4.4	0.48			
15.25	11.43	7.3	103	489	4.3	0.47			
15.98	10.86	7.22	49	493	4.3	0.47			
16.91	10.58	7.22	33	497	4.3	0.48			
17.9	10.39	7.21	26	499	4.3	0.48			

South Basin 9/22/19

Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [µS/cm]	Oxygen (% Sat)	Oxygen (mg/L)	Chl - a RFUs	Phyco RFUs	Turbidity NTUs
0.63	20.98	8.32	347	447	109.5	9.76			
1.27	20.98	8.31	348	446	109.8	9.77	0.95	0.35	1.60
1.89	20.91	8.32	348	446	110.1	9.82			
2.02	20.89	8.34	347	446	109.6	9.78	1.2	0.5	
3.09	20.89	8.34	347	446	109.7	9.78	1.19	0.45	2.4
3.99	20.88	8.33	347	447	109.9	9.81	1.2	0.48	
5.11	20.58	8.29	348	447	109.1	9.79	1.28	0.44	
5.95	19.96	8.13	353	448	87.7	7.97	0.98	0.3	
7.05	19.8	8.04	356	448	78.6	7.17	0.84	0.26	
7.74	19.21	7.8	365	453	46.7	4.31			
7.75	19.23	7.79	365	453	46.3	4.27	0.45	0.16	
9.09	18.84	7.63	369	454	36.9	3.43			
10.04	18.12	7.53	372	460	18.7	1.76	0.51	0.22	1.65
10.97	16.98	7.43	373	467	5	0.48			
11.92	15.47	7.39	351	476	4.2	0.42			
12.22	14.77	7.37	317	480	4	0.41			
13.01	13.82	7.35	274	486	4.1	0.42			
14.2	12.82	7.33	177	485	4	0.42			1.6
15.07	12.42	7.3	107	484	4	0.43			
16.18	11.97	7.27	73	486	3.9	0.42			1.55
16.98	11.67	7.25	42	491	3.9	0.42			
17.55	11.55	7.25	33	492	3.9	0.42			

Appendix II. Report from Phycotech Inc. Analysis of Phytoplankton from July 26 collection.



*Algae Analysis  
Report and Data Set*

Customer ID: 373

<b>Tracking Code:</b>	190001-373	<b>Sample ID:</b>	South 1 m	<b>Replicate:</b>	.
<b>Customer ID:</b>	373	<b>Sample Date:</b>	7/26/2019	<b>Sample Level:</b>	Discrete (Grab)
<b>Job ID:</b>	1	<b>Station:</b>	DEC Site	<b>Sample Depth:</b>	0
<b>System Name:</b>	Conesus Lake	<b>Site:</b>	South Basin	<b>Preservative:</b>	Glutaraldehyde
<b>Report Notes:</b>	.				

**Division: Chlorophyta**

Taxa ID	Genus	Species	Subspecies	Variety	Form	Morph	Structure	Count NU/ml	Relative Count	Algal Cell Count Cells/ ml	Relative Algal Cell Count
2688	*Chlorococaceae	spp	.	.	.	<=2 um spherical	Vegetative	5,102.628	3.29	5,102.628	3.26
<b>Sum Total Chlorophyta</b>								5,102.628	3.29	5,102.628	3.26

Summary for Division ~ Chlorophyta (1 detail record)

**Division: Cyanophyta**

Taxa ID	Genus	Species	Subspecies	Variety	Form	Morph	Structure	Count NU/ml	Relative Count	Algal Cell Count Cells/ ml	Relative Algal Cell Count
4282	*Chroococaceae	spp	.	.	.	<1 um spherical	Vegetative	49,112.794	31.69	49,112.794	31.36
10651	Cyanogranis	ferruginea	.	.	.	.	Vegetative	318.914	0.21	1,913.486	1.22
4323	Synechococcus	sp. 1	.	.	.	< 1um ovoid	Vegetative	100,457.988	64.81	100,457.988	64.15
<b>Sum Total Cyanophyta</b>								149,889.696	96.71	151,484.267	96.74

Summary for Division ~ Cyanophyta (3 detail records)

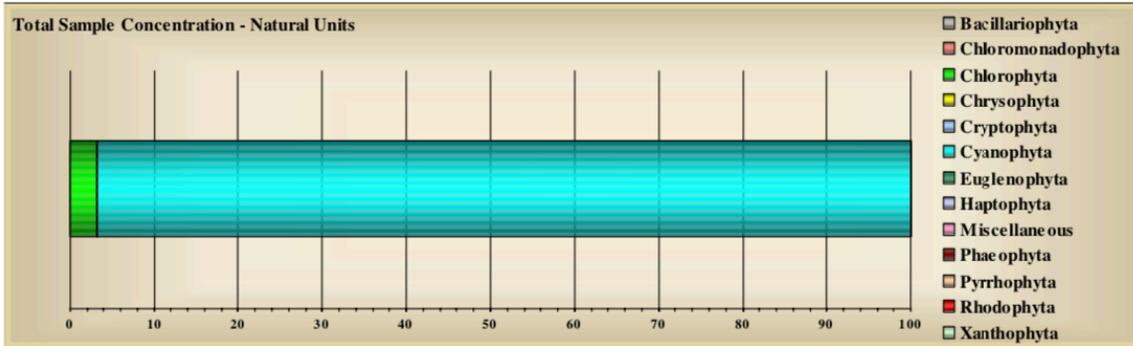
☒ = Identification is Uncertain  
\* = Family Level Identification

190001-373  
Phytoplankton - Grab

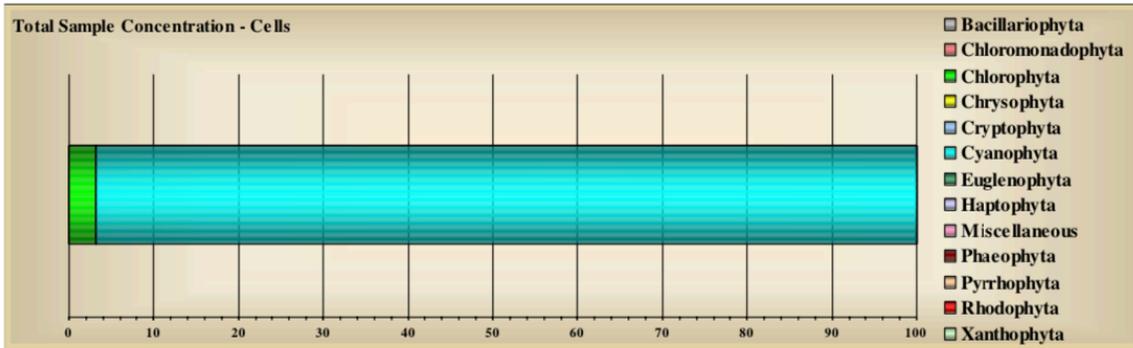
Thursday, January 16, 2020  
Page 2 of 4

Total Sample Concentration 154,992.324 NU/ml  
 Total Sample Cell Concentration 156,586.895 Cells/ml

S  
U  
M  
M  
A  
R  
Y



G  
R  
A  
P  
H  
I  
C  
S



☒ = Identification is Uncertain  
 \* = Family Level Identification

190001-373  
 Phytoplankton - Grab

Thursday, January 16, 2020  
 Page 3 of 4

Species List

Division: Chlorophyta

Taxa ID	Genus	Species	Subspecies	Variety	Form	PhysiState	Structure	Authority
2688	*Chlorococaceae	spp	.	.	.		Vegetative	(Brandt) Beijerinck

Division: Cyanophyta

Taxa ID	Genus	Species	Subspecies	Variety	Form	PhysiState	Structure	Authority
4282	*Chroococaceae	spp	.	.	.		Vegetative	N/A
10651	Cyano-granis	ferruginea	.	.	.		Vegetative	Hindak
4323	Synechococcus	sp. 1	.	.	.		Vegetative	Nageli

### Appendix III. Photos from tributary study sties

#### North McMillan:



North McMillan downstream during storm event... minimal increase in level.



North McMillan upstream during late spring... before water level lowered and became mainly groundwater.

**North Gully:**



North Gully during storm event.



North Gully upstream site showing loss of trees from restoration.

**Wilkins Creek:**



Wilkins Creek downstream site



Wilkins Creek upstream site

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 7/2/2019 2 PM  
 Name of Operator: CRESLOCK  
 Sonde Serial Number: 19F103172

LAB  
TEMP = 20.9°C

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	745.0	103.5	100	0.2%	0
Post-Calibration:	745.4	99.6	100	-0.1	0
Post-Field Check:	745.1	100.1	100	0.0	0

### 2. pH

	Observed	Actual		Observed	Actual	
Pre-Calibration:	6.97	7.02	<del>7.00</del>	10.07	10.04	<del>10.00</del>
Post-Calibration:	7.05	7.02	<del>7.00</del>	10.04	10.04	<del>10.00</del>
Post-Field Check:	7.06	7.02	7.00	<del>10.06</del> 10.04	10.04	10.00

	Observed	Actual		Observed	Actual	
Pre-Calibration:	—	4.00		8.05	8.02	8.00 QC
Post-Calibration:	—	4.00		8.01	8.02	8.00 QC
Post-Field Check:	—	4.00		7.99	8.02	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	226	235.2	<del>228</del>		
Post-Calibration:	235.2	↓	<del>228</del>		
Post-Field Check:	235.3	↓	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	1007	1000		0.1	0
Post-Calibration:	1001	1000		0.0	0
Post-Field Check:	1003	1000		0.0	0

	Observed	Actual			
Pre-Calibration:	508	500 QC			
Post-Calibration:	502	500 QC			
Post-Field Check:	500	500 QC			

Problems: N/A

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 7/8/2019 9:10 am

Name of Operator: Christock Matt Beers

Lab Temp = 20.6°C

Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	718.7	101.4	100	————	0
Post-Calibration:	748.7	101.4	100	————	0
Post-Field Check:	750.062	101.2	100	————	0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.01	7.00	10.04	10.00
Post-Calibration:	————	7.00	————	10.00
Post-Field Check:	7.05	7.00	10.09	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	————	<del>4.00</del>	————	<del>8.00 QC</del>
Post-Calibration:	————	4.00	8.00	8.00 QC
Post-Field Check:	————	4.00	8.00	8.00 QC

### 2. ORP (mV) -18.7°C = 501.1°C

	Observed	Actual			
Pre-Calibration:	240.5	239.2	<del>228</del>		
Post-Calibration:	239.1	239.2	228		
Post-Field Check:	236.6	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1001	1000	————	0
Post-Calibration:	————	1000	————	0
Post-Field Check:	1001	1000		0

	Observed	Actual		
Pre-Calibration:	————	500 QC		
Post-Calibration:	499.7	500 QC		
Post-Field Check:	502	500 QC		

Problems:

N/A

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time:

~~7/19/19~~ 7/19/19

Name of Operator:

DB

Sonde Serial Number:

19F103172

Turbidity: 0  
 Pre : 0.0  
 Post :  
 Post field: 0.15

106  
 100.00  
 96.15  
 ↓

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	750.062	101.2	100		0
Post-Calibration:			100		0
Post-Field Check:	741.5	99.4	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.05	7.00	10.09	10.00
Post-Calibration:		7.00		10.00
Post-Field Check:	7.06	7.00	10.13	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:		4.00	8.00	8.00 QC
Post-Calibration:		4.00		8.00 QC
Post-Field Check:		4.00	<del>8.00</del> 7.97	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	236.6	228			
Post-Calibration:		228			
Post-Field Check:	235.7	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1001	1000		0
Post-Calibration:		1000		0
Post-Field Check:	994	1000		0

	Observed	Actual			
Pre-Calibration:	502	500 QC			
Post-Calibration:		500 QC			
Post-Field Check:	501	500 QC			

Problems:

N/A

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 7/17/19 9:30 PM  
 Name of Operator: CHESLOCK  
 Sonde Serial Number: 19F103172

TEMP = 22.0°C  
 RhODAMINE WE FOR CAL/PC  
 OBS (CAL)    EXP (CAL)  
 16.10/0.00    16.40/0.00  
 OBS (PC)    EXP (PC)  
 16.38/0.00    16.00/0.00

### 1. DISSOLVED OXYGEN (% SATURATION) - TEMP = 23.0°C

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	745.4	100.1%	100	—	0
Post-Calibration:	NO CALIBRATION NEEDED - MC		100	—	0
Post-Field Check:	745.5	100.0	100	—	0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	8.02	8.00 <del>7.00</del>	—	10.00
Post-Calibration:	NO CAL. NEEDED - MC		—	10.00
Post-Field Check:	8.02	8.00 <del>7.00</del>	—	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	—	4.00	—	8.00 QC
Post-Calibration:	—	4.00	—	8.00 QC
Post-Field Check:	—	4.00	—	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	231.1	228		
Post-Calibration:	NO CAL. NEEDED - MC		228	
Post-Field Check:	230.4	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	483.0	500 <del>1000</del>	—	0
Post-Calibration:	NO CAL NEEDED - MC		—	0
Post-Field Check:	485.6	500 <del>1000</del>	0	0

	Observed	Actual		
Pre-Calibration:	—	500 QC		
Post-Calibration:	—	500 QC		
Post-Field Check:	—	500 QC		

Problems: NONE

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

LAB TEMP = 21.6°C

Date/Time: 7/20/19 830 AM (Pre-Cal); 430 PM (Post-Cal)

Name of Operator: CHRISTOCK

Sonde Serial Number: 19F103172

TEMP = 22.0°C

DI H<sub>2</sub>O  
 CML = 0.01 µS (Pre-Cal)  
 PC = 0.01 µS (Pre-Cal)

TEMP = 22.1°C  
 CML = 0.01 µS (Post-Cal)  
 PC = 0.00 µS (Post-Cal)

22.7°C  
 0.00 (CML Post-Cal)  
 -0.01 (PC Post-Cal)

### 1. DISSOLVED OXYGEN (% SATURATION) - TEMP = 24.5°C

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	742.5	99.8	100	_____	0
Post-Calibration:	7 NO CAL NEEDED -ML		100	_____	0
Post-Field Check:	742.6	98.9	100	_____	0

### 2. pH

	Observed	Actual		Observed	Actual
Pre-Calibration:	8.02	8.00 -7.00		_____	10.00
Post-Calibration:	NO CAL NEEDED -ML	7.00		_____	10.00
Post-Field Check:	8.01	8.00 -7.00		_____	10.00

	Observed	Actual		Observed	Actual
Pre-Calibration:	_____	4.00		_____	8.00 QC
Post-Calibration:	_____	4.00		_____	8.00 QC
Post-Field Check:	_____	4.00		_____	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	231.3	228			
Post-Calibration:	NO CAL. NEEDED -ML	228			
Post-Field Check:	230.8	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	_____	1000		_____	0
Post-Calibration:	_____	1000		_____	0
Post-Field Check:	_____	1000		_____	0

	Observed	Actual			
Pre-Calibration:	485.8	500 QC			
Post-Calibration:	NO CAL. NEEDED	500 QC			
Post-Field Check:	489.9	500 QC			

Problems:

NONE

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Lab temp: 21.2°C

Date/Time: 7/22/19 10:45 am  
 Name of Operator: Beers  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	744.982	101.5	100		0
Post-Calibration:	744.982	100.1	100		0
Post-Field Check:	745.23601	97.8	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.08	7.02 7.00	10.10	10.00
Post-Calibration:	7.06	7.02 7.00	10.05	10.00
Post-Field Check:	7.12	7.02 7.00	10.19	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	—	4.00	7.95	8.00 QC
Post-Calibration:	—	4.00	8.00	8.00 QC
Post-Field Check:	—	4.00	8.05	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	251.7	235.2 228			
Post-Calibration:	235.5	↓ 228			
Post-Field Check:		↓ 228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1028	1000		0
Post-Calibration:	1000	1000		0
Post-Field Check:	988	1000		0

	Observed	Actual			
Pre-Calibration:	486.4	500 QC			
Post-Calibration:	500	500 QC			
Post-Field Check:	499.6	500 QC			

**Problems:**

Turbidity

Pre cal	0 NTU	100 NTU
Post cal	0.05	99.07
Post field	0.02	100.07
	0.18	123.24

107 - accidentally agitated standard for 1<sup>st</sup> reading

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Lab temp: 19.9

Date/Time: 7/24/19 12:55pm  
 Name of Operator: Beers  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	748.4	<del>98.9</del> 98.9	100		0
Post-Calibration:	748.5	100.0	100		0
Post-Field Check:			100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.10	7.02 7.00	10.12	10.00
Post-Calibration:	7.02	7.00	9.99	10.00
Post-Field Check:		↓ 7.00		10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:		4.00	7.00	8.00 QC
Post-Calibration:		4.00	8.00	8.00 QC
Post-Field Check:		4.00		8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	232.1	228		
Post-Calibration:	221.6	228		
Post-Field Check:		228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	106	1000		0
Post-Calibration:	1001	1000		0
Post-Field Check:		1000		0

	Observed	Actual		
Pre-Calibration:	471.6	500 QC		
Post-Calibration:	499.9	500 QC		
Post-Field Check:		500 QC		

**Problems:**

Turb:

	DI O	100 NTU
Pre cal	0.9 1.0	<del>100</del>
Post cal	0.150	100.50
Post field		

# SUNY-Brockport Limnology Laboratory

YSI ProDSS Calibration Log

lab temp: 19.4°

Date/Time: 7/26/19 8:05

Name of Operator: Kate

Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	754.126	99.0	100		0
Post-Calibration:	754.1	100.0	100		0
Post-Field Check:	754.1	99.7	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.14	7.00	10.11	10.00
Post-Calibration:	6.98	7.00	9.99	10.00
Post-Field Check:	<u>        </u>	7.00	<u>        </u>	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	3.95	4.00	7.91	8.00 QC
Post-Calibration:	4.00	4.00	8.00	8.00 QC
Post-Field Check:	<u>        </u>	4.00	8.01	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	3.95	228			
Post-Calibration:	4.00	228			
Post-Field Check:	N/A	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:		1000	<u>        </u>	0
Post-Calibration:	1000 <del>998</del>	1000	<u>        </u>	0
Post-Field Check:	<u>        </u>	1000	<u>        </u>	0

	Observed	Actual		
Pre-Calibration:	<del>500</del> 503	500 QC		
Post-Calibration:	500	500 QC		
Post-Field Check:	501	500 QC		

Problems: None

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 7/29/19  
 Name of Operator: DB  
 Sonde Serial Number: 19F103172

Turbidity	0	100
Pre Cal	2.12	115.50
post cal	0.04	100.03
post field	0.01	130.07 (rinse bottle)

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	746.9	96.5	100		0
Post-Calibration:	746.5	100.0	100		0
Post-Field Check:	746.0	105.5	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.12	7.00	10.05	10.00
Post-Calibration:	7.01	7.00	10.00	10.00
Post-Field Check:	7.03	7.00	10.04	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:		4.00	8.04	8.00 QC
Post-Calibration:		4.00	8.00	8.00 QC
Post-Field Check:		4.00	7.92	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	228.45	228		
Post-Calibration:	228.2	228		
Post-Field Check:	210.7	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1150	1000		0
Post-Calibration:	995	1000		0
Post-Field Check:	993	1000		0

	Observed	Actual		
Pre-Calibration:	435.8	500 QC		
Post-Calibration:	499.8	500 QC		
Post-Field Check:	520	500 QC		

Problems: \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 7/31/2019 9 PM  
 Name of Operator: CHESLOCK  
 Sonde Serial Number: 19F103172

PreCAL = 0.10  
 CAL " " = 0.00  
 PostCAL = 0.00  
 PC PostCAL = 0.00

### 1. DISSOLVED OXYGEN (% SATURATION) TEMP = 20.9°C

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	749.3	106.8	100	————	0
Post-Calibration:	749.5	98.6	100	————	0
Post-Field Check:			100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.00	7.00	10.03	10.00
Post-Calibration:	————	7.00	————	10.00
Post-Field Check:		7.00		10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	————	4.00	————	8.00 QC
Post-Calibration:	————	4.00	7.98	8.00 QC
Post-Field Check:	————	4.00		8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	↑	228			
Post-Calibration:	N/A	228			
Post-Field Check:	↓	228			

### 3. Specific Conductivity (µS/cm) 20.4°C

	Observed	Actual	Observed	Actual
Pre-Calibration:	986.0	1000		0
Post-Calibration:	————	1000		0
Post-Field Check:	————	1000		0

	Observed	Actual		
Pre-Calibration:	————	500 QC		
Post-Calibration:	499.0	500 QC		
Post-Field Check:		500 QC		

Problems: N/A

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 8/8/19 9:05  
 Name of Operator: DB  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	739.4	98.6	100		0
Post-Calibration:	739.7	100.6	100		0
Post-Field Check:	742.7	104.3	100		0

### 2. pH

	Observed	Actual		Observed	Actual
Pre-Calibration:	7.04	7.02	7.00	10.11	10.00
Post-Calibration:	7.02	7.02	7.00	10.00	10.00
Post-Field Check:	7.10	↓	7.00	10.13	10.00

	Observed	Actual		Observed	Actual
Pre-Calibration:	<del>7.87</del>	4.00		7.87	8.00 QC
Post-Calibration:	<del>8.00</del>	4.00		8.00	8.00 QC
Post-Field Check:	<del>8.00</del>	4.00		8.00	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	222.6	228			
Post-Calibration:	228.1	228			
Post-Field Check:	232.2	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	1061	1000			0
Post-Calibration:	998	1000			0
Post-Field Check:	1048	1000			0

	Observed	Actual			
Pre-Calibration:	468.8	500 QC			
Post-Calibration:	500	500 QC			
Post-Field Check:	506	500 QC			

Problems: \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

**Date/Time:** 8/12/19  
**Name of Operator:** DB  
**Sonde Serial Number:** 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	746.1	109.0	100		0
Post-Calibration:	746.1	100.1	100		0
Post-Field Check:	745.2	99.7	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.17	7.00	10.05	10.00
Post-Calibration:	7.01	7.00	9.99	10.00
Post-Field Check:	7.06	7.00	10.13	10.00

	<del>Observed</del>	<del>Actual</del>	Observed	Actual
Pre-Calibration:		4.00	7.80	8.00 QC
Post-Calibration:		4.00	8.00	8.00 QC
Post-Field Check:		4.00	7.99	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	228.5	228		
Post-Calibration:	228.2	228		
Post-Field Check:	225.6	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1050	1000		0
Post-Calibration:	999	1000		0
Post-Field Check:	1026	1000		0

	Observed	Actual		
Pre-Calibration:	487.6	500 QC		
Post-Calibration:	499.3	500 QC		
Post-Field Check:	500	500 QC		

**Problems:** \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

**Date/Time:** 8/19/19 12:49 pm      lab temp: 20.4°C  
**Name of Operator:** Kate      post field - 8/22/19  
**Sonde Serial Number:** 19F103172      temp - 18.7°C

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	747.76	<del>100.9</del> 97.8	100	—	0
Post-Calibration:	747.4	<del>100.0</del> 100.0	100	—	0
Post-Field Check:	746.0	98.9	100	—	0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.13	7.00	10.09	10.00
Post-Calibration:	6.99	7.00	9.99	10.00
Post-Field Check:	7.05	7.00	10.16	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	3.89	4.00	7.99	8.00 QC
Post-Calibration:	4.00	4.00	8.00	8.00 QC
Post-Field Check:	4.03	4.00	8.04	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	<del>228</del>	228		
Post-Calibration:	<del>228</del>	228		
Post-Field Check:	<del>228</del>	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	996	1000	—	0
Post-Calibration:	1000	1000	—	0
Post-Field Check:	1002	1000	—	0

	Observed	Actual		
Pre-Calibration:	497.3	500 QC		
Post-Calibration:	500	500 QC		
Post-Field Check:	502	500 QC		

**Problems:** \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 8/27/19 2:30p  
 Name of Operator: Beers  
 Sonde Serial Number: 19F103172

Lab temp  
19.9

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	744.1	100.2	100		0
Post-Calibration:	744.1	100.0	100		0
Post-Field Check:	746.1	99.7	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.09	7.00	10.13	10.00
Post-Calibration:	7.01	7.00	9.99	10.00
Post-Field Check:	7.13	7.00	10.16	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:		4.00	7.86	8.00 QC
Post-Calibration:		4.00	8.00	8.00 QC
Post-Field Check:		4.00	8.03	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:	209.7	228		
Post-Calibration:	228.2	228		
Post-Field Check:	226.0	228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1028	1000		0
Post-Calibration:	1001	1000		0
Post-Field Check:	987	1000		0

	Observed	Actual		
Pre-Calibration:	492.6	500 QC		
Post-Calibration:	500	500 QC		
Post-Field Check:	548	500 QC		

**Problems:** \_\_\_\_\_

	Turbid, m	Bycal after	PostField
0	1.57	-0.30	0.04
100	837	100.1	94.35

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 9/10/14  
 Name of Operator: DTB  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	751.1	100.4%	100		0
Post-Calibration:	751.1	100.0	100		0
Post-Field Check:	748.6	99.9 %	100		0

### 2. pH

	Observed	Actual		Observed	Actual
Pre-Calibration:	7.23	7.00		10.07	10.00
Post-Calibration:	7.01	7.00		10.00	10.00
Post-Field Check:	<del>7.12</del> 7.09	7.00		10.12	10.00

	Observed	Actual		Observed	Actual
Pre-Calibration:		4.00		7.91	8.00 QC
Post-Calibration:		4.00		8.00	8.00 QC
Post-Field Check:		4.00		8.00	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	225.0	<del>228</del> 228			
Post-Calibration:	228.5	228			
Post-Field Check:	215.5	228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	<del>1000</del> 1002	1000			0
Post-Calibration:	1000	1000			0
Post-Field Check:	1006	1000			0

	Observed	Actual			
Pre-Calibration:	493	500 QC			
Post-Calibration:	300	500 QC			
Post-Field Check:	545	500 QC			

Problems: \_\_\_\_\_

Turb	0	100
precal	-0.12	91.2
postcal	-0.12	99.85
postfield	1.61	102.50

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 9/17/19  
 Name of Operator: DB  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	752.6	99.2	100		0
Post-Calibration:	752.6	100.0	100		0
Post-Field Check:			100		0

### 2. pH

	Observed	Actual		Observed	Actual
Pre-Calibration:	7.10	7.00		10.13	10.00
Post-Calibration:	7.02	7.00		9.99	10.00
Post-Field Check:	7.01	7.00		10.01	10.00

	Observed	Actual		Observed	Actual
Pre-Calibration:	<del>7.96</del>	<del>4.00</del>		7.96	8.00 QC
Post-Calibration:	<del>8.00</del>	<del>4.00</del>		8.00	8.00 QC
Post-Field Check:	<del>8.00</del>	<del>4.00</del>		8.02	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:	215.5	228			
Post-Calibration:	227.9	228			
Post-Field Check:	<i>Actual</i>	228			

*SUNNY, 9/22/19, 20m depth*

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	1075	1000			0
Post-Calibration:	1000	1000			0
Post-Field Check:	1002	1000			0

	Observed	Actual			
Pre-Calibration:	460.9	500 QC			
Post-Calibration:	500	500 QC			
Post-Field Check:	501	500 QC			

Problems: \_\_\_\_\_

	Turb	Pre-Cal	Post cal	post field
0		0.01	0.00	0.00
100		102.23	99.89	100.03

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 9/22/19 10:39a  
 Name of Operator: Kate  
 Sonde Serial Number: 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	748.7	99.4	100		0
Post-Calibration:	748.7	100.00	100		0
Post-Field Check:	748.6	100.02	100		0

### 2. pH

	Observed	Actual		Observed	Actual
Pre-Calibration:	6.90	7.00		10.10	10.00
Post-Calibration:	7.00	7.00		10.00	10.00
Post-Field Check:	7.01	7.00		10.02	10.00

	Observed	Actual		Observed	Actual
Pre-Calibration:		4.00		7.86	8.00 QC
Post-Calibration:		4.00		8.00	8.00 QC
Post-Field Check:		4.00		7.99	8.00 QC

### 2. ORP (mV)

	Observed	Actual			
Pre-Calibration:		228			
Post-Calibration:		228			
Post-Field Check:		228			

### 3. Specific Conductivity (µS/cm)

	Observed	Actual		Observed	Actual
Pre-Calibration:	992	1000			0
Post-Calibration:	1000	1000			0
Post-Field Check:	1000	1000			0

	Observed	Actual			
Pre-Calibration:	506	500 QC			
Post-Calibration:	500	500 QC			
Post-Field Check:	501	500 QC			

Problems: \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Temp	0	100
Pre cal	0.10	98.46
Post cal	0.05	99.85
Post field	2.57	102.47

**Date/Time:** 10/1/14

**Name of Operator:** DB

**Sonde Serial Number:** 19F103172

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	74.5	106.7	100		0
Post-Calibration:	74.5	100.0	100		0
Post-Field Check:	749.2	99.9	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.15	7.00	10.09	10.00
Post-Calibration:	7.01	7.00	10.00	10.00
Post-Field Check:	7.06	7.00	10.12	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:		4.00	7.95	8.00 QC
Post-Calibration:		4.00	8.00	8.00 QC
Post-Field Check:		4.00	8.00	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:		228		
Post-Calibration:		228		
Post-Field Check:		228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	922	1000		0
Post-Calibration:	1000	1000		0
Post-Field Check:	1006	1000		0

	Observed	Actual		
Pre-Calibration:	541	500 QC		
Post-Calibration:	500	500 QC		
Post-Field Check:	637	500 QC		

**Problems:** \_\_\_\_\_

# SUNY-Brockport Limnology Laboratory

## YSI ProDSS Calibration Log

Date/Time: 10/20/19  
 Name of Operator: DB  
 Sonde Serial Number: 19F103177

	0 MV	100 MV
Pre cal	0.12	101.73
Post cal	0.08	101.48
Post Field	0.16	100.64

### 1. DISSOLVED OXYGEN (% SATURATION)

	BP (mm Hg)	Observed (%)	Actual (%)	Observed (%)	Actual (%)
Pre-Calibration:	746.3	94.6	100		0
Post-Calibration:	746.3	100.7	100		0
Post-Field Check:	746.4	101.3	100		0

### 2. pH

	Observed	Actual	Observed	Actual
Pre-Calibration:	7.16	7.00	10.14	10.00
Post-Calibration:	7.02	7.00	10.00	10.00
Post-Field Check:	7.17	7.00	10.00	10.00

	Observed	Actual	Observed	Actual
Pre-Calibration:	<del>X</del>	4.00	8.09	8.00 QC
Post-Calibration:	<del>X</del>	4.00	7.98	8.00 QC
Post-Field Check:	<del>X</del>	4.00	8.09	8.00 QC

### 2. ORP (mV)

	Observed	Actual		
Pre-Calibration:		228		
Post-Calibration:		228		
Post-Field Check:		228		

### 3. Specific Conductivity (µS/cm)

	Observed	Actual	Observed	Actual
Pre-Calibration:	1006 <sup>→6</sup>	1000	<del>2.0</del>	0
Post-Calibration:	1000	1000	---	0
Post-Field Check:	1055	1000	---	0

	Observed	Actual		
Pre-Calibration:	502	500 QC		
Post-Calibration:	500	500 QC		
Post-Field Check:	504	500 QC		

Problems: \_\_\_\_\_

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	6/26 2014	0615	<del>0.13</del> 0.13	1800 m 0.13	on lake calibrated for lake level	BOSCH
2. Temperature (deg C)	/	/	Serial 21.01 21.0 Therm	22.76/ 22.50	compared to thermometer 0.04	IB
3. Light (uE/sec/m <sup>2</sup> )	/	/	0 PAR	0 w/ foil	w/ foil cover	IB
4. Conductance (uS/cm <sup>2</sup> )	/	/	1412	1390 1412	22 1412 = 0.02	IB
5. pH	/	/	7.410	7.24 7	0.03	IB
6. ORP (mVolts)	/	/	430	424 430	0.01	IB
7. LDOxygen (% Saturation)	/	/	100%	98.7% 100	0.03	IB
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity			20	20.3 20.0	0.02	IB

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	7/2	1530	0 m <del>0 m</del> lake	0 m lake	Both zeroed in lake	J. Bosch 7/2/1980 IB 1930
2. Temperature (deg C)	"	"	22.0 / 22.0 21.8 Therm	22.54 22.1, 22.5	consistent w/ Thermometers	
3. Light (uE/sec/m <sup>2</sup> )	"	"	0	0	w/ foil cover	
4. Conductance (uS/cm <sup>2</sup> )	"	"	1412 <del>1412</del> IB	1402		
5. pH	"	"	7.10	7.27 10.16	0.04 / 0.06 or 4.0% 40.02 OFF %	
6. ORP (mVolts)	"	"	430	427		
7. LDOxygen (% Saturation)	"	"	100.2	99.3	Between 99.0-99.3	
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)		15:45	20.3 20.1	20.1 20.2	close to 20.0 standard	2030 FINISHED

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	7/15/19	10:00	on board at 0 m			IB Bosch
2. Temperature (deg C)			21.26 21/21.8	23.07 22.5/23	→ Two Thermometers	IB
3. Light (uE/sec/m <sup>2</sup> )			0 PAR	0		IB
4. Conductance (uS/cm <sup>2</sup> )			1390 → 1412	1411	New standard Exp 6/2020	IM
5. pH		4.87 4.97-7.10	→	7.58 JUL 7 10.26 m 10		IM
6. ORP (mVolts)			427 → 430	407 SF 430 STAND	$\frac{23}{430} = 0.05$ 5%	IB
7. LDOxygen (% Saturation)			101.3 → 100 From #3 calibration	101.590 in lab		IB
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			20.2 20 NTU standard	20.4 NTU 20 NTU STD	New standard set New Formazin Exp 9/20/20	IB

Exp 9/20/20

Thurs. 7/18/19

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	7/18	0900	0	0.1	- after lake calibration	Bosch
2. Temperature (deg C)			23.16 23.1, 22.9	<del>22.49</del> 22.49°C	therm - 22.8°C - 22°C	Bosch
3. Light (uE/sec/m <sup>2</sup> )			0	1		Bosch
4. Conductance (uS/cm <sup>2</sup> )			1412	1398		
5. pH			7.10	6.96 + 10.4		
6. ORP (mVolts)			430	421		
7. LDOxygen (% Saturation)			100% 500	98.7		
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			19.9 20	20.1 20	✓	

1 Burn  
↓

7/23/19

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	7/23	0:400	0.0 m			Burr/Benoit
2. Temperature (deg C)	↓	↓	21.4 21.0 21.4	<del>21.4</del> <del>21.0</del>		↓
3. Light (uE/sec/m <sup>2</sup> )			0			
4. Conductance (uS/cm <sup>2</sup> )			1412			
5. pH			7.11			
6. ORP (mVolts)			not calibrated		NO DATA FROM HYDRO 5 - DATA FROM BROCKPORT	
7. LDOxygen (% Saturation)			<del>98.1</del> 100			
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			<del>not</del> 20.8 <del>calibrated</del>			

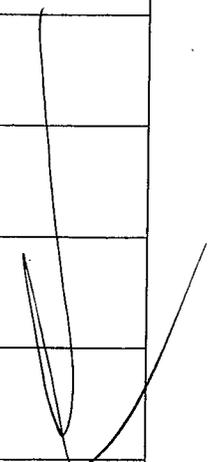
Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	7/30	9:44	0.00m	0		GB
2. Temperature (deg C)	↓	↓	21.1°C 21.3°C Hydrolab 21.2°C	25.4°C 25.0°C Hydrolab 25.48°C		GB
3. Light (uE/sec/m <sup>2</sup> )			0	0		GB
4. Conductance (uS/cm <sup>2</sup> )			1412	1462	3.5% higher than standard	GB
<del>5. pH</del>						
<del>6. ORP (mVolts)</del>						
7. LDOxygen (% Saturation)			100%	100.5		GB
8. <i>In vivo</i> Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)						

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	8/17/2019	0900	0	0	passed	Bosch
2. Temperature (deg C)			20.4 21.4 Hydro 21.17	20.5 25.7 REFS Hydro 25.7	passed	
3. Light (uE/sec/m <sup>2</sup> )			Zero	1	passed	
4. Conductance (uS/cm <sup>2</sup> )			1412 1400 REFIS 1402	1402	passed	
5. pH			—			
6. ORP (mVolts)			—			
7. LDOxygen (% Saturation)			100	101	<del>passed</del> passed	
8. In vivo Chlorophyll a (volts)	NA	NA	NA Set to NOT done	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)		0920	20.4 REFIS 20.0	20.0 20.0	passed	

Internal batteries on Hydrolab at 17%  
8 C-cells need to be replaced

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	8/5	11:30	0	0		EAB ↓
2. Temperature (deg C)	↓	↓	21.8-20.9 -21.42	25.2 25.8 -26.21		↓
3. Light (uE/sec/m <sup>2</sup> )			0	0		
4. Conductance (uS/cm <sup>2</sup> )			1412	1412		
5. pH			X	X		
6. ORP (mVolts)			X	X		
7. LDOxygen (% Saturation)			98	101.1		
8. <i>In vivo</i> Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)						

8-A-19

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)		12:09 PM	0			8/18/19
2. Temperature (deg C)			21.5°C 20.8°C			
3. Light (uE/sec/m²)			0			
4. Conductance (uS/cm²)			1912			
5. pH			X	X		
6. ORP (mVolts)			X	X		
7. LDOxygen (% Saturation)			700 mm Hg <del>100.8 [SAT]</del>			
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)						

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	8/16		0 m	8/17 0 m	✓	Bosch
2. Temperature (deg C)				22.14 22.2		Bosch
3. Light (uE/sec/m <sup>2</sup> )			0 uE	0 uE	✓	Bosch
4. Conductance (uS/cm <sup>2</sup> )			1412	1415	✓ → 9.9/10	Bosch
5. pH				need 6.64 calibrated to 7 0.05 520	will need new reference <del>with</del> SOLUTION	Bosch
6. ORP (mVolts)				450 430 SEND	50% OFF	Bosch
7. LDOxygen (% Saturation)				Reacts 100.1 A/Tm 24 hr	checks out after 24	Bosch
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	—
9. Turbidity (20 NTU Cal)				20.1 20.1 DE 20NTU	checks out	Bosch

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	8/20	7:42	0	0		EAB G+B
2. Temperature (deg C)	8/20	7:43	21, 20.2, 21.22	25.5 24.9		↓
3. Light (uE/sec/m <sup>2</sup> )	↓	7:43	0	0		↓
4. Conductance (uS/cm <sup>2</sup> )			1412	1412		
5. pH			7/10	7/10		
6. ORP (mVolts)			430	430	✓	
7. LDOxygen (% Saturation)			100.3	100.8		
8. <i>In vivo</i> Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			✓ 203/20	✓ 2049 20	✓	

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	9/2/12	1300	0	0	ON SITE	IB
2. Temperature (deg C)		-	22 22.225	21.0 21.2 21.0 LAB	✓	IB
3. Light (uE/sec/m <sup>2</sup> )		✓	0	0		IB
4. Conductance (uS/cm <sup>2</sup> )		✓	1413	1415	✓	IB
5. pH			7.10	7.2 10.1	✓	IB
6. ORP (mVolts)			430	428	✓	IB
7. LDOxygen (% Saturation)			100%	99.9%	✓	IB
8. In vivo Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			20.1	20.1	✓	IB

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	2/12/19	1300	0	0		Bosch
2. Temperature (deg C)			21.2 2.4	21.3 2.4		
3. Light (uE/sec/m <sup>2</sup> )			0	0		
4. Conductance (uS/cm <sup>2</sup> )			1412	1417		
5. pH			7.910	7.1 10.0		
6. ORP (mVolts)			430 mV	428		
7. LDOxygen (% Saturation)			100%	101%		
8. <i>In vivo</i> Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)			20.1 20	20.0	✓	

Calibration Sheet for Hydrolab 5 Sensors	Date	Time	PreDeploy Calibration Value	Post Deploy Calibration Value	Comments	Calibrations Done by
1. Depth (m)	9/22	12:21	0 m	0 m <sup>1900</sup>	checks	Busch
2. Temperature (deg C)			21.2 21.0 21.6 °C	21.68 21.75	✓	IB
3. Light (uE/sec/m <sup>2</sup> )			0 uE	0 uE	✓	IB
4. Conductance (uS/cm <sup>2</sup> )			1412 uS/cm	1406	✓	IB
5. pH			7.0 10.0	7.02 9.98	✓	IB
6. ORP (mVolts)			430 mV	429	✓	IB
7. LDOxygen (% Saturation)			100%	102.1	✓	IB
8. <i>In vivo</i> Chlorophyll a (volts)	NA	NA	NA	NA	Calibration not needed	
9. Turbidity (20 NTU Cal)		19.5 19.6	→ →	20.1	✓	IB







**Conesus Lake Summer 2019 Field Datasheet**

Date: 6/18/19  
 Field Crew Members: Bosha / J. ...

Site: CONESUS SAVINA  
 Start Time: \_\_\_\_\_  
 End Time: \_\_\_\_\_  
 Waves: \_\_\_\_\_  
 Cloud cover: \_\_\_\_\_  
 Secchi disk (m): \_\_\_\_\_

✓	CHECKLIST
	Hydrolab
	Light meter
	Depth-integrated water sample (subtainer on ice)
	Discrete water samples (1L bottles on ice)
	Zooplankton (ethanol preserved)
	Zooplankton (live)

DO V20 - Typical Distans  
~~Prokaryotic Count~~

DEPTH ~ 17.8 M  
 SAMPLE DEPTH = 17 M FOR  
 BUELDM

W 42.75258  
 W 77.71512

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (µg/L)	Chl - a (volts)	Phyco. (µg/L)	Phyco. (volts)	ORP	PAR (microEinsteins)
0											
1											
2											
3								349.51			
4											
5											
6											
7											
8											
9											
10								258.14			
11											
12											
13											
14											
15											
16								243.65			
17								223.86			
18											
19											
20											
21											
22											

17M - 222.48  
 dup.



**Conesus Lake Summer 2019 Field Datasheet**

Date: 6/26/19  
 Field Crew Members: BOYD/CROSS/CR/LAB

Site: NORDEN - CROWDEN  
 Start Time: 10:10 AM  
 End Time:  
 Waves:  
 Cloud cover:  
 Secchi disk (m): 1.72 M

✓	CHECKLIST
	Hydrolab
	Light meter
	Depth-integrated water sample (subtainer on ice)
	Discrete water samples (1L bottles on ice)
	Zooplankton (ethanol preserved)
	Zooplankton (live)

DEPOD FOC NORDEN SAMPLE = 11 M (0.5M OFF BOTTOM)

IN 2020 TO FOCUS

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (µg/L)	Chl - a (volts)	Phyco. (µg/L)	Phyco. (volts)	ORP	PAR (microEinsteins)
0											
1											
2											
3								280.99			
4											
5											
6											
7											
8								288.74			
9											
10											
11								293.12			
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											

NORDEN BASIN - DEEP TROWEN  
 DEPOD ~ 11 M  
 SURFACE TEMP = 22°C  
 SECCHIDISK = 2M  
 GPS: 42.81525 N  
 77.70137 W

N 42.81192  
 W 77.70879







\* SEE SOUTH OFF NORTH

YSE PRODS = SONDE

**Conesus Lake Summer 2019 Field Datasheet - Picocyanobacteria Monitoring**

Date: 7/8/2019  
 Field Crew Members: BOSCH B. LABROU LABS

✓	CHECKLIST
✓	Hydrolab
✓	Secchi disk
✓	Van don/discrete water samples
✓	-Chlorophyll/Picocyanobacteria
✓	-Turbidity

Site/GPS:	NORTH
Start Time:	1:30 PM
End Time:	
Wind/Direction:	NORTH (LIGHT)
Waves:	NO WAVES (2.1')
Air Temperature (°C):	24.0°C
Cloud Cover:	PARTLY SUNNY
Secchi disk (m):	2.3

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	25.7	434.5	8.74	9.96	125.5	1.23	0.03	167.3	SED	
1	25.5	432.9	8.76	10.10	127.1	1.63	0.07	164.0	1-LAB	
2	25.1	433.7	8.77	10.22	127.4	1.95	0.19	164.0	DATA	(2.3, 2.2)
3	25.0	433.4	8.76	10.22	127.3	2.26	0.18	165.3		(2.1, 2.1)
4	24.8	431.2	8.71	9.90	123.1	2.28	0.24	165.8		(3.08, 3.07)
5	24.2	435.9	8.60	9.10	111.7	1.60	0.18	168.9		(2.44, 2.57)
6	20.8	450.8	8.03	5.71	65.7	1.07	0.15	183.2		
7	19.0	451.7	7.76	4.33	47.8	0.67	0.10	188.0		
8	17.9	452.6	7.67	3.80	41.2	0.42	0.08	190.1		
9	16.8	454.0	7.60	3.25	34.2	0.35	0.06	191.8		
10	15.1	459.0	7.53	1.90	19.3	0.27	0.07	174.0	↓	
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

- SED HARD TURBIDIMETER

KSEE SOUND OFF NOISE

YSE PRODS = SONDE

**Conesus Lake Summer 2019 Field Datasheet - Pico cyanobacteria Monitoring**

Date: 7/18/2019  
 Field Crew Members: BOSCA & CRESWELL LABS

✓	CHECKLIST
✓	Hydrolab
✓	Secchi disk
✓	Van dorn/discrete water samples
✓	-Chlorophyll/Picocyanobacteria
✓	-Turbidity

Site/GPS:	CENTER
Start Time:	2:23 PM
End Time:	
Wind/Direction:	NORW (20KPH)
Waves:	NONE (2.1')
Air Temperature (°C):	24.0°C
Cloud Cover:	PARTLY SUNNY
Secchi disk (m):	2.08

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	25.7	432.4	8.78	10.25	129	1.15	0.11 <sup>0.1</sup>	200.0	SED	2.08/2.13
1	25.3	433.7	8.78	10.45	130.7	1.58	0.08 <sup>0.14</sup>	205.8	M-LAB	
2	24.9	433.8	8.78	10.40	129.1	2.08	0.27 <sup>0.28</sup>	202.0	17KPH	(2.54, 2.71)
3	24.7	434.1	8.75	10.18	125.2	2.06	0.21 <sup>0.27</sup>	201.1		
4	24.2	436.0	8.60	8.99	110.1	1.66	0.15 <sup>0.21</sup>	202.7		
5	23.5	439.6	8.57	8.36	100.8	1.50	0.13 <sup>0.19</sup>	204.2		
6	21.6	446.0	8.13	6.94	75.8	1.01	0.05 <sup>0.11</sup>	210.9		
7	19.5	450.8	7.89	4.90	51.8	0.66	0.07	216.4		
8	17.5	452.8	7.66	3.69	39.7	0.40	0.03 <sup>0.09</sup>	221.0		
9	16.1	455.2	7.57	2.82	29.4	0.28	0.05 <sup>0.11</sup>	223.8		
10	13.7	459.0	7.44	0.97	9.8	0.32	0.10 <sup>0.16</sup>	227.9		
11	12.5	463.3	7.43	0.00	0.0	0.13	0.29	239.6		
12	12.4	463.7	7.44	-0.03	-0.3	0.50	0.40	239.5		
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

(2.93, 2.71)



**Conesus Lake Summer 2019 Field Datasheet - Picocyanobacteria Monitoring**

Date: 7/18/19  
 Field Crew Members: M. BIRDS & BOSCH

✓	CHECKLIST
✓	Hydrolab
✓	Secchi disk
✓	Van dorn/discrete water samples
✓	-Chlorophyll/Picocyanobacteria
✓	-Turbidity

Site/GPS:	N0201
Start Time:	10:13
End Time:	10:30
Wind/Direction:	NE
Waves:	CHOP
Air Temperature (°C):	21°C
Cloud Cover:	OVERCAST
Secchi disk (m):	6.01 M

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	25.5	418.5	8.70	10.17	128.0	3.07	0.12	152.5		
1	25.5	418.6	8.71	10.21	128.3	2.95	0.15	150.0		
2	25.5	418.8	8.70	10.12	127.3	3.26	0.18	148.2		
3	25.5	419.3	8.67	9.95	124.9	2.97	0.18	147.6		
4	25.5	419.8	8.65	9.86	123.8	2.97	0.14	147.4	SED	6.32/6.02; 6.23/6.10
5	25.4	420.6	8.63	9.67	121.2	3.25	0.14	148.0	X-LAB	
6	20.5	453.3	7.82	2.89	31.5	1.35	0.22	162.8		
7	18.3	458.3	7.62	1.79	19.3	0.96	0.25	171.5		3.24/3.24; 3.34
8	16.6	461.1	7.56	1.09	11.3	0.54	0.27	173.1		
9	15.6	461.1	7.52	0.66	6.7	0.45	0.25	173.9		
10	14.5	464.4	7.49	0.07	0.6	0.40	0.14	174.2		
11	13.0	473.5	7.45	0.01	0.0	0.52	0.11	-95.2		
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

HAW TURBIDITY

**Conesus Lake Summer 2019 Field Datasheet - Picocyanobacteria Monitoring**

Date: 7/18/19  
 Field Crew Members: M. BOWEN & BOSCH

✓	CHECKLIST
✓	Hydrolab
✓	Secchi disk
✓	Van dorn/discrete water samples
✓	-Chlorophyll/Picocyanobacteria
✓	-Turbidity

Site/GPS:	CENTRE
Start Time:	1050AM
End Time:	1114
Wind/Direction:	NE
Waves:	CALM
Air Temperature (°C)	33°
Cloud Cover:	OVERCAST
Secchi disk (m):	0.7

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	25.1	417.3	8.70	10.85	128.6	2.49	0.14	172.0	500	
1	25.5	418.3	8.70	10.35	130.1	2.95	0.10	167.0	n-100	
2	25.5	418.5	8.71	10.32	129.5	3.07	0.10	164.0		
3	25.4	419.7	8.70	10.23	128.3	3.16	0.15	162.0		
4	25.4	419.4	8.68	9.99	125.2	3.13	0.18	160.8		5.46/6.35; 5.71/5.90
5	24.4	433.3	8.41	7.52	91.9	2.60	0.19	167.0		
6	22.4	445.9	8.02	4.16	52.0	1.75	0.30	177.0		
7	19.7	455.1	7.70	2.44	27.2	1.00	0.36	182.0		3.24/2.58; 2.17/2.07
8	17.8	457.9	7.60	1.70	18.5	0.85	0.37	185.3		
9	16.8	462.9	7.57	1.36	14.0	0.50	0.41	187.0		
10	15.6	462.5	7.50	0.64	6.4	0.50	0.40	188.9		
11	14.1	463.8	7.48	0.09	0.8	0.38	0.30	193.1		
12	12.3	469.0	7.25	0.01	0.1	0.33	0.17	170.0		
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

NAW

↓







**Conesus Lake Summer 2019 Field Datasheet**

Date: 7/23/19  
 Field Crew Members: JB/KB/GB/EB/SB

✓	CHECKLIST
✓	Hydrolab
✓	Secchi disk
✓	Van dorn/discrete water samples
✓	-Total phosphorus (acid-preserved)
✓	-Orthophosphate (<0.45µm filtered)

Site/GPS:	Center
Start Time:	11:27 am
End Time:	12:02 pm
Wind/Direction:	N 5 mph
Waves:	< 1 ft
Air Temperature (°C)	26.1
Cloud Cover:	high
Secchi disk (m):	0.85 m

Depth - 12.8 m

Hydrolab		Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity		Turb. (FNU)
Depth (m)	(NTUs)										Turb. (µg/l)		
0		26.3	412.9	8.67	9.83	120.2			97.1				4.04
1		26.3	413.8	8.66	9.35	119.8			106.4		2.13	2.21	4.09
2		25.8	413.2	8.61	9.14	116.0			106.1				4.58
3		25.7	413.6	8.53	8.78	111.0			107.2		7.79	2.56	4.38
4		25.7	413.8	8.5	8.44	106.6			107.9				4.2
5		25.6	414.0	8.48	8.39	106.0			108.3		6.62	6.47	4.34
6		23.6	438.3	7.92	4.02	48.8			118.9				3.11
7		20.5	461.8	7.80	0.79	9.3			124.5				2.54
8		18.7	462.7	7.68	0.72	8.0			126.0		1.93	1.86	2.1
9		16.6	466.6	7.65	0.21	2.3			127.2				2.22
10		15.7	467.0	7.62	0.09	1.0			128.0		1.06	1.10	2.15
11		13.5	468.3	7.57	0.04	0.4			110.4				1.95
12		12.2	468.0	7.54	0.02	0.2			-28.4		1.95	2.07	1.32
13		-											
14		-											
15		-											
16		-											
17		-											
18		-											
19		-											
20		-											
21		-											
22		-											

NAW

YSS











VERY CLOUDY  
DON'T SEE VISIBLE  
COLORS

**Conesus Lake Summer 2019 Field Datasheet - Picrocyanobacteria Monitoring**

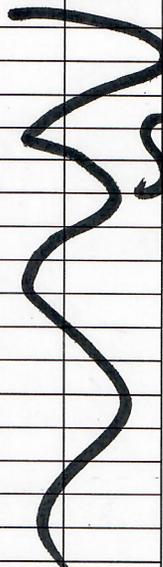
Date: ~~8/2/19~~ **8/9/19**  
 Field Crew Members: **MC/EJ/AN/SB**  
 Site/GPS: **SOUTH**  
 Start Time: **3:15 PM**  
 End Time:  
 Wind/Direction:  
 Waves:  
 Air Temperature (°C): **25.1**  
 Cloud Cover:  
 Secchi disk (m): **2.55**

✓	CHECKLIST
✓	HydroLab
✓	Secchi disk
✓	Van dorn/discrete water samples
✓	-Chlorophyll/Picrocyanobacteria
✓	-Turbidity

~~DO = 9.6x~~  
7.2

~~PH = 8.37~~

HydroLab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	25.1	424.6	8.37	7.71	99.6	0.82	-0.08	146.4		
1	25.1	424.6	8.36	7.89	99.4	1.22	-0.08	140.5		
2	25.1	424.7	8.37	7.88	99.2	1.31	-0.08	137.2		
3	25.0	424.7	8.37	7.85	98.8	1.25	-0.08	135.5		
4	25.0	424.9	8.36	7.78	98.0	1.36	-0.08	134.6		
5	25.0	425.7	8.33	7.57	95.7	1.32	-0.08	133.8		
6	21.7	452.2	7.67	0.86	10.0	1.29	-0.03	146.5		
7	19.3	466.4	7.59	0.14	1.6	0.47	-0.01	150.3		
8	17.5	470.5	7.58	0.10	1.1	0.48	0.14	149.6		
9	15.4	473.7	7.57	0.07	0.7	0.49	-0.01	150.2		
10	14.6	474.0	7.55	0.05	0.5	0.37	0.03	150.0		
11	13.7	470.1	7.55	1.16	11.6	0.41	0.04	150.0		
12	13.2	470.9	7.55	1.17	11.5	0.42	0.06	150.1		
13	12.9	472.4	7.53	0.56	5.4	0.37	0.17	150.3		
14	12.3	472.0	7.50	0.04	0.4	0.35	0.26	152.3		
15	11.6	473.3	7.45	0.02	0.2	0.27	0.07	159.2		
16	10.8	483.6	7.39	0.01	0.1	0.29	0.10	-130		
17	11.1	472.5	7.43	0.01	-0.1	0.31	0.13	-135		
18										
19										
20										
21										
22										



SEE SID'S  
M-LAB





**Conesus Lake Summer 2019 Field Datasheet**

Date: 8/20/19  
 Field Crew Members: BROOKHART/GENESCO

✓	CHECKLIST
	Hydrolab
	Secchi disk
	Van dorn/discrete water samples
	-Total phosphorus (acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Site/GPS:	NOLA
Start Time:	9:08
End Time:	9:48
Wind/Direction:	LS, MBL N
Waves:	SL
Air Temperature (°C):	~75°F
Cloud Cover:	Sunny/CLEAR
Secchi disk (m):	2.3m

bottom - 10m QC - 10.5  
 tot. depth - 11.1m

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	24.0	423.3	8.39	8.38	102.0	1.39	0.22	140.1		
1	24.0	423.7	8.44	8.39	102.2	1.58	0.20	136.9		1.2/1.2
2	24.0	423.8	8.44	8.39	102.1	1.72	0.18	134.3		
3	24.0	423.7	8.44	8.34	101.6	1.60	0.16	133.3		1.2/1.3
4	24.0	423.7	8.44	8.33	101.3	1.81	0.18	131.2		
5	24.0	423.7	8.44	8.31	101.1	1.66	0.11	130.3		1.4/1.2
6	23.9	423.7	8.43	8.22	99.9	1.48	0.15	130.3		
7	23.8	423.8	8.40	7.94	96.2	1.39	0.14	131.0		1.4/1.6
8	21.6	425	8.4	5.18	61.0	1.16	0.17	140.5		1.4/1.6
9	16.3	470.7	7.62	0.18	1.8	5.22	7.29	147.5		
10	14.5	474.1	7.53	0.06	0.6	0.50	0.28	43.4		
11	13.0	486.1	7.48	0.03	0.3	0.54	0.32	-101.4		1.6
12										1.4/2
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

10.5 QC - bottom

**Conesus Lake Summer 2019 Field Datasheet**

Date: 8/20/19  
 Field Crew Members: Brock Holt / Genie

✓	CHECKLIST
	Hydrolab
	Secchi disk
	Van dorn/discrete water samples
	-Total phosphorus (acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Bottom 12m

Site/GPS:	CENTER
Start Time:	10:12
End Time:	
Wind/Direction:	25 MPH N
Waves:	2'
Air Temperature (°C):	~75°F
Cloud Cover:	5.00% / 1.50%
Secchi disk (m):	2.3m

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	24.2	424.9	8.46	8.59	105.0	0.94	0.13	104.0		
1	24.2	425.1	8.48	8.60	105.1	1.07	0.14	105.0		
2	24.2	425.1	8.48	8.62	105.3	1.62	0.15	105.6		
3	24.2	425.2	8.48	8.61	105.0	—	0.20	106.8		1.4 1.3
4	24.1	425.2	8.46	8.44	103.0	—	0.20	108.8		
5	24.0	425.2	<del>8.48</del>	7.79	94.4	1.33	0.14	111.9		
6	23.7	426.4	8.27	7.32	86.5	1.21	0.09	114.4		
7	23.2	431.5	8.01	5.46	65.1	0.84	0.09	119.7		
8	21.5	447.3	7.69	1.54	17.4	0.79	0.13	125.5		1.2 1.4
9	18.2	467.3	7.58	0.28	3.0	0.69	0.42	129.1		
10	15.0	474.7	7.54	0.10	1.0	0.53	0.45	17.3		2.3 2.2
11	13.8	475.7	7.52	0.04	0.4	0.35	0.33	-51.3		
12	12.6	478.3	7.50	0.01	0.11	0.30	0.27	-135.5		2.1 2.1
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

PH 8.37



Conesus Lake Summer 2019 Field Datasheet

Date: 9/22/2019  
 Field Crew Members: SB/KB/ML

✓	CHECKLIST
	Hydrolab
	Secchi disk
	Van dom/discrete water samples
	-Total phosphorus (acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Site/GPS:	SOUTH
Start Time:	2:27 PM
End Time:	
Wind/Direction:	SW
Waves:	~0.5'
Air Temperature (°C):	21.6
Cloud Cover:	Cloudy - 70%
Secchi disk (m):	2.20 m

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	20.9					0.95	0.35			
1	20.9					1.10	0.43			1.6, 1.6
2	20.8					1.20	0.50			
3	20.8					1.19	0.45			2.4, 2.4
4	20.8					1.20	0.48			
5	20.6					1.28	0.44			
6	19.8					0.98	0.30			
7	19.6					0.84	0.26			
8	19.0					0.45	0.16			
9	19.0					0.53	0.20			
10	18.4					0.51	0.22			1.6, 1.7
11	17.5				0.46	0.43	0.43			
12	15.6					0.55	0.32			
13	14.0					0.38	0.27			
14	13.1					0.33	0.27			1.6, 1.6
15	12.6					0.29	0.32			
16	12.1					0.29	0.34			
17	11.7					0.29	0.34			1.6, 1.5
18										
19										
20										
21										
22										

SD Main 7106

Depth ~ 17.8 m



Conesus Lake Summer 2019 Field Datasheet

Date: 9/22/19  
 Field Crew Members: MC, SB, KB

✓	CHECKLIST
	Hydrolab
	Secchi disk
	Van dom/discrete water samples
	-Total phosphorus (acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Site/GPS: North  
 Start Time: 5:00 p  
 End Time:  
 Wind/Direction: SW  
 Waves: 20.5'  
 Air Temperature (°C):  
 Cloud Cover: ~50%  
 Secchi disk (m): 1.95m

Hydrolab	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Chl - a (RFUs)	Phyco. (RFUs)	ORP (mV)	PAR (µE)	Turbidity (NTUs)
0	21.2					1.22	0.53			
1	21.2					1.21	0.55			
2	21.0					1.30	0.57			
3	20.9					1.35	0.57			2.3/2.8
4	20.7					1.30	0.63			
5	20.7					1.19	0.63			
6	20.6					1.24	0.68			
7	20.5					1.33	0.51			
8	20.4					1.34	0.44			1.7/2.3
9	20.3					1.11	0.34			
10	20.1					0.89	0.25			
10.5	19.9					0.79	0.20			
11	18.3					1.83	0.44			3.0/3.1
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										

QC: 2.7/2.5

Bottom

# Conesus Tributaries Summer 2019 Field Datasheet

Date: 7/25/19  
 Field Crew Members: MC, DB, MB, CS  
 Start Time: 8:02  
 End Time: 11:35  
 Air Temperature (°C): 20.6 °C  
 Cloud Cover: 10-70%

✓	CHECKLIST
✓	Hydrolab
✓	Water samples (Including FB/ED)
✓	-TSS (1L Nalgene)
✓	-Total phosphorus (acid-preserved)
✓	-NOx (<0.45µm filtered, acid-preserved)
✓	-Orthophosphate (<0.45µm filtered)

Site	Sample Time	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Turbidity (NTUs)	Notes:
North Gully Reference = Upstream	10:01	18.1	647	8.41	8.94	97.8	3.55	ORP 107.8 mv
North Gully Remediated = Downstream	9:32	18.0	643	8.47	9.13	99.6	3.52	ORP 103.5 mv
North McMillan Creek Reference = Upstream	11:16	18.0	701	7.36	9.57	28	7.0	ORP 140.7 mv
North McMillan Creek Remediated = Downstream	10:43	14.4	649	7.79	5.86	56.3	2.57	ORP 143.1 mv - ORP
Wilkins Creek Reference = Upstream	8:48	18.3	1114	8.30	8.63	94.9	1.38	ORP 261.5 mv
Wilkins Creek Remediated = Downstream	8:02	18.4	1073	8.25	8.57	94.3	1.56	ORP 261.5 mv

Site Dup: NMDN 10:45 14.3 642 7.62 5.61 55.3 2.68 133.0 mv ORP

# Conesus Tributaries Summer 2019 Field Datasheet

Date: 8-13-19  
 Field Crew Members:

Start Time: 8:04  
 End Time:  
 Air Temperature (°C)  
 Cloud Cover:

✓	CHECKLIST
	HydroLab
	Water samples (Including FB/FD)
	-TSS (1L Nalgene)
	-Total phosphorus (acid-preserved)
	-NOx (<0.45µm filtered, acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Site	Sample Time	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Turbidity (NTUs)	Notes:
North Gully Reference = Upstream	9:43	17.9	644	8.29	8.81	96.2	21.35	ORP: 87.7 orange hood slow crayfish
North Gully Remediated = Downstream.	9:20	18.0	639	8.31	8.96	98.0	22.34	ORP: 68.9
North McMillan Creek Reference = Upstream	10:50	18.7	649	7.75	1.02	11.3	①	ORP: 58.3
North McMillan Creek Remediated = Downstream	10:24	17.0	666	7.88	5.25	56.3	6.81	ORP: 77.6
Wilkins Creek Reference = Upstream	8:43	18.7	1594	8.14	8.72	91.6	4.51	ORP: 55.8
Wilkins Creek Remediated = Downstream	8:05	19.0	1470	8.06	7.85	87.9	4.71	ORP: 98.5

Site DUG  
 N6 U6

9:43 17.8 644 8.28 8.78 98.9 22.45

86.9

FB

-0.40

Turb NTU

4.54

2.98

-0.01

1.33

0.85

0.98

3.38

# Conesus Tributaries Summer 2019 Field Datasheet

Date: 9-18-19  
 Field Crew Members: DJ, MB

Start Time: 12:00  
 End Time: 3:45  
 Air Temperature (°C) →  
 Cloud Cover: →

✓	CHECKLIST
	HydroLab
	Water samples (Including R/B/D)
	-TSS (1L Nalgene)
	-Total phosphorus (acid-preserved)
	-NOx (<0.45µm filtered, acid-preserved)
	-Orthophosphate (<0.45µm filtered)

Site	Sample Time	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Turbidity (NTUs)	Notes:
North Gully Reference = Upstream	3:27 <del>12:00</del>	14.8 <del>15.2</del>	688 <del>1406</del>	8.12 <del>7.11</del>	1509.78	98.5	0.91	92.6
North Gully Remediated = Downstream	3:03	14.1	681	8.16	10126	103.6	1.05	84.9
North McMillan Creek Reference = Upstream	11:24	18.3	705	7.24	1.6	17.4	0.14	1042 ORP
North McMillan Creek Remediated = Downstream	1:09	16.3	707	7.39	5.52	57.5	.15	87.5 ORP
Wilkins Creek Reference = Upstream	12:23	15.4	1443	7.93	9.79	100.2	0.48	<del>115.1</del> ORP
Wilkins Creek Remediated = Downstream	12:00	15.2	1406	7.91	10.48	106.7	.57	150 ORP

Site: DJP, NMP

12:13 706 7.24 1.52 16.5 0.17

101

Rain previous night and during sampling

Spencer

Conesus Tributaries Summer 2019 Field Datasheet

Random Order for Conesus Tributary Site Duplicates  
VIA Random.org

Date: 10/2/19  
Field Crew Members: OGS

Start Time: 9:00  
End Time: 11:30  
Air Temperature (°C): 65  
Cloud Cover: 100% drizzle

✓	CHECKLIST
	HydroLab
	Water samples (Including TB/FD)
	-TSS (1L Nalgene)
	-Total phosphorus (acid-preserved)
	-NOx (<0.45µm filtered, acid-preserved)
	-Orthophosphate (<0.45µm filtered)

- 1) NMDN
- 2) NGUP
- 3) NMUP
- 4) NGDN
- 5) WCDN
- 6) WUCP

HydroLab	Sample Time	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Turbidity (NTUs)	Notes:
North Gully Reference = Upstream	11:05	17.2	586	8.75	8.88	95.6	22.80	
North <del>McMillan</del> McMillan Creek Remediated = Downstream	11:15	14.5	697	7.55	3.28	33.2	8.51	Clear water, low flow
North <del>McMillan</del> McMillan Creek Reference = Upstream	12:10	18.9	714	7.40	2.13	29.78	0.29	No water, lowest oxygen
North <del>McMillan</del> McMillan Creek Remediated = Downstream	10:20	17.3	576	8.26	8.96	96.4	20.82	
Wilkins Creek Reference = Upstream	9:50	18.2	663	8.08	8.52	93.8	10.09	
Wilkins Creek Remediated = Downstream	9:05	18.5	681	7.93	8.29	91.4	10.06	
Site Duplicate = NGDN	10:20	17.3	586	8.25	8.95	96.4	20.75	

Discharge  
down millins

North classification

Distance	0.5m	1m	2m	3m
0.5m	.18			
1m	.12	.18		
2m	.35	.22		
3.0m	.22	.16		
3.5m	.07	.12		

NE

Distance	1m	2m	3m
1m	.10	.12	
2m	.15	.16	
3m	.05	.12	

NM

Distance	0.5m	1m
0.5m	.06	.09
1m	.05	.13

Conesus Tributaries Summer 2019 Field Datasheet

Random Order for Conesus Tributary Site Duplicates  
VIA Random.org

Date: 10/21/19  
Field Crew Members: DB, EM  
Start Time: 8:10  
End Time:  
Air Temperature (°C): 15.0  
Cloud Cover: 0%

✓	CHECKLIST
	Hydrolab
	Water samples (Including FB/FD)
	-TSS (1L Nalgene)
	-Total phosphorus (acid-preserved)
	-NOx (<0.45µm filtered, acid-preserved)
	-Orthophosphate (<0.45µm filtered)

- 1) NMDN
- 2) NGUP
- 3) NMUP
- 4) NGDN
- 5) WCDN
- 6) WCUP

Site	Hydrolab	Sample Time	Temp (°C)	Sp. Cond. (µS/cm)	pH	LDO (mg/L)	LDO (% SAT)	Turbidity (NTUs)	Notes:
North Gully Reference = Upstream		11:21	8.9	750	8.32	11.73	103.8	0.62	Saw crayfish
North Gully Remediated = Downstream		10:45	8.6	749	8.31	11.92	105.0	0.61	Saw crayfish
North McMillan Creek Reference = Upstream		12:08	15.5	761	7.16	4.06	42.0	0.1	
North McMillan Creek Remediated = Downstream		12:10	14.5	750	7.90	6.29	63.4	6.01	
Wilkins Creek Reference = Upstream		9:55	8.6	1204	8.21	11.47	101.2	0.48	Saw crayfish
Wilkins Creek Remediated = Downstream		8:45	8.0	1194	8.00	11.35	98.7	0.41	Saw crayfish
Site Duplicate = WCDN		8:50	8.0	1192	8.02	11.31	98.2	0.45	

- Crayfish released if caught in kicknet

WCDN

Distance across (m)	Depth (m)	Flow (m/s)
0.5	0.05	0.12
1	0.12	0.10
2	0.19	0.10
2.5	0.23	0.10
3m	0.07	0.09

WCUP

Distance across (m)	Depth (m)	Flow (m/s)
0.5	0.07	0.09
1	0.08	0.15
2	0.03	0.13
2.5	0.0	0.0
3	0.08	0.11
4	0.08	0.07

NGUP/ND

Distance across (m)	Depth (m)	Flow (m/s)
0.5	0.05	0.06
1	0.11	0.10
2	0.13	0.20
2.5	0.12	0.18
3	0.08	0.15
3.5	0.05	0.16

cut of water



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

Prepared For  
**SUNY Geneseo**

LSL Project ID: **1909924**

Receive Date/Time: 06/26/19 14:11

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box 424  
Wayland, NY 14572  
Tel. (585) 728-3320  
Fax (585) 728-2711  
NYS DOH ELAP #11667

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032  
  
LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

 Date: 7/12/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:

-- LABORATORY ANALYSIS REPORT --

SUNY Geneseo Geneseo, NY

Sample ID: 20190626\_FLIVI\_North3-WS LSL Sample ID: 1909924-001  
Location: Conesus Lake North Basin  
Sampled: 06/26/19 10:35 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep	Analysis	Analyst
Analyte	Result Units	Date	Date & Time	Initials

(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.031 mg/l		7/11/19	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The results of the matrix spike and matrix spike duplicate samples associated with this analysis were less than the established control limit.</i>				

Sample ID: 20190626\_FLIVI\_North8-WS LSL Sample ID: 1909924-002  
Location: Conesus Lake North Basin  
Sampled: 06/26/19 10:36 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep	Analysis	Analyst
Analyte	Result Units	Date	Date & Time	Initials

(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.019 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_NorthB-WS LSL Sample ID: 1909924-003  
Location: Conesus Lake North Basin  
Sampled: 06/26/19 10:37 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep	Analysis	Analyst
Analyte	Result Units	Date	Date & Time	Initials

(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.022 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_Center3\_WS LSL Sample ID: 1909924-004  
Location: Conesus Lake Center  
Sampled: 06/26/19 11:05 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep	Analysis	Analyst
Analyte	Result Units	Date	Date & Time	Initials

(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.028 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_Center8\_WS LSL Sample ID: 1909924-005  
Location: Conesus Lake Center  
Sampled: 06/26/19 11:06 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep	Analysis	Analyst
Analyte	Result Units	Date	Date & Time	Initials

(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.023 mg/l		7/11/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report Prepared For SUNY Geneseo

LSL Project ID: 1909925

Receive Date/Time: 06/26/19 14:11

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box 424  
Wayland, NY 14572  
Tel. (585) 728-3320  
Fax (585) 728-2711  
NYS DOH ELAP #11667

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

Date:

7/15/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190626\_FLIVI\_North3\_WS      **LSL Sample ID:** 1909925-001  
**Location:** Conesus Lake North Basin  
**Sampled:** 06/26/19 10:35      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:09	HKB

**Sample ID:** 20190626\_FLIVI\_North8\_WS      **LSL Sample ID:** 1909925-002  
**Location:** Conesus Lake North Basin  
**Sampled:** 06/26/19 10:36      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:10	HKB

**Sample ID:** 20190626\_FLIVI\_NorthB\_WS      **LSL Sample ID:** 1909925-003  
**Location:** Conesus Lake North Basin  
**Sampled:** 06/26/19 10:37      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:11	HKB

**Sample ID:** 20190626\_FLIVI\_Center3\_WS      **LSL Sample ID:** 1909925-004  
**Location:** Conesus Lake Center  
**Sampled:** 06/26/19 11:05      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:12	HKB

**Sample ID:** 20190626\_FLIVI\_Center8\_WS      **LSL Sample ID:** 1909925-005  
**Location:** Conesus Lake Center  
**Sampled:** 06/26/19 11:06      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:13	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**- - LABORATORY ANALYSIS REPORT - -**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190626\_FLIVI\_Center10\_WS      **LSL Sample ID:** 1909925-006  
**Location:** Conesus Lake Center  
**Sampled:** 06/26/19 11:10      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:13	HKB

**Sample ID:** 20190626\_FLIVI\_CenterB\_WS      **LSL Sample ID:** 1909925-007  
**Location:** Conesus Lake Center  
**Sampled:** 06/26/19 11:15      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:14	HKB

**Sample ID:** 20190626\_FLIVI\_South3\_WS      **LSL Sample ID:** 1909925-008  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 11:49      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:15	HKB

**Sample ID:** 20190626\_FLIVI\_South10\_WS      **LSL Sample ID:** 1909925-009  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 11:54      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:16	HKB

**Sample ID:** 20190626\_FLIVI\_South14\_WS      **LSL Sample ID:** 1909925-010  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 11:56      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:17	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

- - LABORATORY ANALYSIS REPORT - -

SUNY Geneseo Geneseo, NY

Sample ID: 20190626\_FLIVI\_South16\_WS LSL Sample ID: 1909925-011  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 11:58 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	<0.002 mg/l		6/28/19 09:21	HKB

Sample ID: 20190626\_FLIVI\_SouthB\_WS LSL Sample ID: 1909925-012  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 12:04 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.019 mg/l		6/28/19 09:21	HKB

Sample ID: 20190626\_FLIVI\_SouthB\_QL LSL Sample ID: 1909925-013  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 12:09 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.0037 mg/l		6/28/19 09:22	HKB

Sample ID: 20190626\_FLIVI\_B LSL Sample ID: 1909925-014  
Location: Conesus Lake  
Sampled: 06/26/19 13:30 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.017 mg/l		6/28/19 09:23	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# Life Science Laboratories, Inc.

1909925

SUNY\_Geneseo 7706

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

### Report Address:

Name: SUNY Geneseo  
 Company: SUNY - GENESEO  
 Street: 1 COURSE COLLE  
 City/State: GENESEO/NY  
 Phone: 585-245-5303  
BOSSIE@GENESEO.EDU  
 Zip: 14454  
 Fax: \_\_\_\_\_

### Client Project ID/Client Site ID

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/26/2019</del>	<del>10:35 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>001A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/26/2019</del>	<del>—</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>—</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/26/2019</del>	<del>10:36 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>002A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/26/2019</del>	<del>10:37 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>003A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTRAL</del>	<del>6/26/2019</del>	<del>11:05 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>004A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTRAL</del>	<del>6/26/2019</del>	<del>—</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>—</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTRAL</del>	<del>6/26/2019</del>	<del>11:06 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>005A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTRAL</del>	<del>6/26/2019</del>	<del>11:10 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>006A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTRAL</del>	<del>6/26/2019</del>	<del>11:15 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>007A</del>
<del>20190626 - FIVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - SOUTH BASIN</del>	<del>6/26/19</del>	<del>11:49 AM</del>	<del>NPW</del>	<del>NONE</del>	<del>OLNOLNOSPANE</del>	<del>—</del>	<del>008A</del>

### Custody Transfers

Received by:	Received by:	Received by:
Relinquished by:	Relinquished by:	Relinquished by:
Relinquished by:	Relinquished by:	Relinquished by:
Rec'd for lab by: <u>Jordan Shuster</u>	Rec'd for lab by: <u>Jordan Shuster</u>	Rec'd for lab by: <u>Jordan Shuster</u>
6-26-19	6-26-19	6-26-19
14:11	14:11	14:11
Sample Temp: <u>10.0</u>	Sample Temp: <u>10.0</u>	Sample Temp: <u>10.0</u>

LSL Sample Comments: 8 Samples Received On Ice Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

1909925

## CHAIN OF CUSTODY RECORD

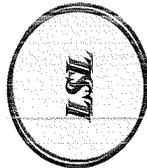
LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

SUNY\_Geneseo 7706



### Report Address:

Name: SEP BOSCA  
 Company: SUNY - GENESEO  
 Street: 1 COLLEGE CIRCLE  
 City/State: GENESEO, NY  
 Phone: 585-NYS-5303  
BOSCA@GENESEO.EDU  
 Zip: 14454  
 Fax: \_\_\_\_\_

### Client Project ID/Client Site ID

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20190625 FLV1 SOUTH B. WS</del>	<del>CONDENS WATER - SOUTH BASIN</del>	<del>6/25/19</del>	<del>---</del>	<del>N/A</del>	<del>NONE</del>	<del>ORTHOPHOSPHATE</del>	<del>---</del>	<del>---</del>
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	11:51 AM	N/A	NONE	ORTHOPHOSPHATE	---	009A
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	11:56 AM	N/A	NONE	ORTHOPHOSPHATE	---	010A
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	11:58 AM	N/A	NONE	ORTHOPHOSPHATE	---	011A
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	12:04 PM	N/A	NONE	ORTHOPHOSPHATE	---	012A
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	12:09 PM	N/A	NONE	ORTHOPHOSPHATE	---	013A
20190625 FLV1 SOUTH B. WS	CONDENS WATER - SOUTH BASIN	6/25/19	12:30 PM	N/A	NONE	ORTHOPHOSPHATE	---	014A
<p>LSL Sample Comments: <u>6</u> Containers this COC                  Ch Ice                  Samples Received Intact: Y N                  Rec'd for lab by: <u>Jordan Shinsky</u>                  Date: <u>6-26-19</u>                  Time: <u>19:11</u>                  Sample Temp: <u>10.0</u></p>								

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composi sample

All areas of this Chain of Custody Record must be filled out in pen only

**RaShia Dunbar**

---

**From:** Isidro Bosch [bosch@geneseo.edu]  
**To:** RaShia Dunbar  
**Cc:** mchislock@brockport.edu  
**Subject:** Re: Orthophosphate samples  
**Attachments:**

**Sent:** Thu 6/27/2019 10:20 AM

Of course, Rashaia. We will comply. We use syringe filters and it takes it is not easy to filter but we can certainly manage q 100 ml.

I copied this message to Michael Chislock because his group at SUNY BROCKPORT will also be submitting SRP samples for analysis.

Thank you !

Isidro Bosch  
Professor of Biology

On Jun 27, 2019, at 10:15 AM, RaShia Dunbar <dunbarr@lsl-inc.com> wrote:

Hello Sid,

The water samples that you submitted for Orthophosphate analysis, were they filtered in the field? In the future would it be possible to get more volume? 50mls is needed to perform the analysis, but we prefer to have a little more (100mls).

**RaShia Dunbar**  
Sample Receiving  
Life Science Laboratories, Inc.  
(315) 445-1105



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report Prepared For SUNY Geneseo

LSL Project ID: 1911784

Receive Date/Time: 07/23/19 13:35

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box 424  
Wayland, NY 14572  
Tel. (585) 728-3320  
Fax (585) 728-2711  
NYS DOH ELAP #11667

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

*LaDonna Kibler*  
**LaDonna Kibler, Quality Assurance**

This report was reviewed by:

Date:

8/6/19



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

### Prepared For

# SUNY Geneseo

LSL Project ID: 1913840

Receive Date/Time: 08/20/19 12:50

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

Date:

9/4/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

### Prepared For

### SUNY Geneseo

LSL Project ID: 1916073

Receive Date/Time: 09/23/19 12:10

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

Date:

10/14/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:

**-- LABORATORY ANALYSIS REPORT --**

SUNY Geneseo Geneseo, NY

Sample ID: 20190922\_FLIVI\_NORTH3-WS LSL Sample ID: 1916073-001  
Location:  
Sampled: 09/22/19 17:02 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.0090 mg/l		9/24/19 13:41	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.033 mg/l	9/30/19	10/4/19	HKB

Sample ID: 20190922\_FLIVI\_NORTH8-WS LSL Sample ID: 1916073-002  
Location:  
Sampled: 09/22/19 17:15 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.025 mg/l		9/24/19 13:42	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.027 mg/l	9/30/19	10/4/19	HKB

Sample ID: 20190922\_FLIVI\_NORTH8B-WS LSL Sample ID: 1916073-003  
Location:  
Sampled: 09/22/19 17:28 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.039 mg/l		9/24/19 13:42	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.015 mg/l	9/30/19	10/4/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190922\_FLIVI\_CENTER3-WS      **LSL Sample ID:** 1916073-004  
**Location:**  
**Sampled:** 09/22/19 16:21      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.022 mg/l		9/24/19 13:43	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.031 mg/l	9/30/19	10/4/19	HKB

**Sample ID:** 20190922\_FLIVI\_CENTER8-WS      **LSL Sample ID:** 1916073-005  
**Location:**  
**Sampled:** 09/22/19 16:25      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.0067 mg/l		9/24/19 13:44	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.021 mg/l	9/30/19	10/4/19	HKB

**Sample ID:** 20190922\_FLIVI\_CENTER10-WS      **LSL Sample ID:** 1916073-006  
**Location:**  
**Sampled:** 09/22/19 16:35      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.0072 mg/l		9/24/19 13:44	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.023 mg/l	9/30/19	10/4/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190922\_FLIVI\_CENTERB-WS      **LSL Sample ID:** 1916073-007  
**Location:**  
**Sampled:** 09/22/19 16:45      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
<b>Reactive Phosphate as P</b>	0.042 mg/l		9/24/19 13:45	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
<b>Phosphorus, Total as P</b>	0.047 mg/l	9/30/19	10/4/19	HKB

**Sample ID:** 20190922\_FLIVI\_SOUTH3-WS      **LSL Sample ID:** 1916073-008  
**Location:**  
**Sampled:** 09/22/19 14:55      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
<b>Reactive Phosphate as P</b>	<0.002 mg/l		9/24/19 13:45	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
<b>Phosphorus, Total as P</b>	0.027 mg/l	9/30/19	10/4/19	HKB

**Sample ID:** 20190922\_FLIVI\_SOUTH10-WS      **LSL Sample ID:** 1916073-009  
**Location:**  
**Sampled:** 09/22/19 15:09      **Sampled By:** MC  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
<b>Reactive Phosphate as P</b>	<0.002 mg/l		9/24/19 13:46	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
<b>Phosphorus, Total as P</b>	0.025 mg/l	9/30/19	10/4/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

SUNY Geneseo Geneseo, NY

Sample ID: 20190922\_FLIVI\_SOUTH14-WS LSL Sample ID: 1916073-010  
Location:  
Sampled: 09/22/19 15:22 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.075 mg/l		9/24/19 13:48	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.10 mg/l	9/30/19	10/4/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Sample ID: 20190922\_FLIVI\_SOUTH16-WS LSL Sample ID: 1916073-011  
Location:  
Sampled: 09/22/19 15:35 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.15 mg/l		9/24/19 13:49	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit. This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.18 mg/l	9/30/19	10/4/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Sample ID: 20190922\_FLIVI\_SOUTH16-WS LSL Sample ID: 1916073-012  
Location:  
Sampled: 09/22/19 15:48 Sampled By: MC  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.17 mg/l		9/24/19 13:49	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit. This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.16 mg/l	9/30/19	10/4/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab



# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
p) Wayland, NY 14572  
f) p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

**1916073**

SUNY\_Geneseo

7706

**Report Address:**

Name: **Sid Bosch**  
Company: **SUNY-Geneseo**  
Street: **1 College Circle**  
City/State: **Geneseo, NY**  
Phone: **585-245-5303**  
Email: **bosch@geneseo.edu**  
Zip: **14454**  
Fax:

**Client Project ID/Client Site ID**

Turnaround Time		Pre-Authorized		*Additional Citations					
Normal	14 Day	1 Day*	2 Day*	3 Day*	7 Day*				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Date Needed or Special Instructions:									
Authorization or PO #:									
LSL Project Number:									
Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #	
20190922_FL1V1_NORTH3-WS		9/20/19	5:02 PM	NPW	None, Field Filtered	Orthophosphate		0031A	
20190922_FL1V1_NORTH8-WS		9/20/19	5:15 PM	NPW	None, Field Filtered	Orthophosphate		0032A	
20190922_FL1V1_NORTH8-WS		9/20/19	5:28 PM	NPW	None, Field Filtered	Orthophosphate		0033A	
20190922_FL1V1_CENTR3-WS		9/22/19	4:21 PM	NPW	None, Field Filtered	Orthophosphate		0041A	
20190922_FL1V1_CENTR8-WS		9/22/19	4:05 PM	NPW	None, Field Filtered	Orthophosphate		0051A	
20190922_FL1V1_CENTR10-WS		9/22/19	4:35 PM	NPW	None, Field Filtered	Orthophosphate		0061A	
20190922_FL1V1_CENTRB-WS		9/22/19	1:45 PM	NPW	None, Field Filtered	Orthophosphate		0071A	
20190922_FL1V1_SOUTH3-WS		9/22/19	2:55 PM	NPW	None, Field Filtered	Orthophosphate		0081A	
20190922_FL1V1_SOUTH10-WS		9/22/19	3:07 PM	NPW	None, Field Filtered	Orthophosphate		0091A	
20190922_FL1V1_SOUTH14-WS		9/22/19	3:22 PM	NPW	None, Field Filtered	Orthophosphate		0101A	
LSL Sample Comments:						Custody Transfers			
Sampled by: <b>Michael Chustock</b>						Received by:			
Relinquished by: <b>Asilko Bosch</b>						Received by:			
Relinquished by:						Rec'd for lab by: <b>Jessica Shiner</b>			
						Samples Received Intact: <b>Y N</b>			
						Date: <b>9-23-19</b>			
						Sample Temp: <b>12.5</b>			

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample

All areas of this Chain of Custody Record must be filled out in pen only



# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

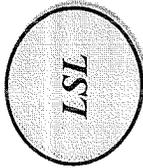
LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

**1916073**

LSL Southern  
30 E. Main St.  
Cuba, NY 1472  
p) 585-968-264  
f) 585-968-090

7706



**Report Address:**

Name: Sid Bosch  
Company: SUNY-Geneseo  
Street: 1 College Circle  
City/State: Geneseo, NY  
Phone: 585-245-5303  
Email: bosch@geneseo.edu

Zip: 14454  
Fax: \_\_\_\_\_

**Client Project ID/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190922_FL1V1_NORTH3-WS		9/22/19	5:02 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	001B
20190922_FL1V1_NORTH8-WS		9/22/19	5:15 AM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	002B
20190922_FL1V1_NORTHB-WS		9/22/19	5:28 AM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	003B
20190922_FL1V1_CENTR3-WS		9/22/19	4:31 PM 4:45 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	004B
20190922_FL1V1_CENTR8-WS		9/22/19	4:45 AM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	005B
20190922_FL1V1_CENTR10-WS		9/22/19	4:35 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	006B
20190922_FL1V1_CENTRB-WS		9-22-19	4:15	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	007B
20190922_FL1V1_SOUTH3-WS		9/22/19	3:58 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	008B
20190922_FL1V1_SOUTH10-WS	Summit received On Ice	9/22/19	3:09 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	009B
20190922_FL1V1_SOUTH14-WS		9/22/19	3:22 PM	NPW	H2SO4 Acid Pres.	Total Phosphorus	✓	010B
<p>LSL Sample Comments: <u>Samples received On Ice</u></p> <p>Containers this COC _____</p>								
<p><b>Custody Transfers</b></p> <p>Sampled by: <u>Michael Chastock</u> Relinquished by: <u>Andrea Borich</u> Relinquished by: _____</p>								
<p>Received by: _____ Received by: _____ Rec'd for lab by: <u>Juan Shuler</u></p>								
<p>Samples Received Intact: Y N Date: <u>9-23-19</u> Sample Temp: <u>15</u></p>								

**Turnaround Time**

Normal:  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
Pre-Authorized:  1 Day\*  2 Day\*  3 Day\*  7 Day\*

\*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**LSL Project Number:**

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composite sample

All areas of this Chain of Custody Record must be filled out in pen only



**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190820\_FLIVI\_NORTH3-WS      **LSL Sample ID:** 1913840-001  
**Location:**  
**Sampled:** 08/20/19 9:46      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.023 mg/l		8/21/19 14:06	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.012 mg/l	8/26/19	8/28/19	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of a matrix spike sample associated with this analysis was greater than the established control limit.</i>				

**Sample ID:** 20190820\_FLIVI\_NORTH8-WS      **LSL Sample ID:** 1913840-002  
**Location:**  
**Sampled:** 08/20/19 9:36      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.0059 mg/l		8/21/19 14:06	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.014 mg/l	8/26/19	8/28/19	HKB

**Sample ID:** 20190820\_FLIVI\_NORTHB-WS      **LSL Sample ID:** 1913840-003  
**Location:**  
**Sampled:** 08/20/19 9:24      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.12 mg/l		8/21/19 14:07	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.14 mg/l	8/26/19	8/28/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

**Analysis performed at:** (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab



**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

Sample ID: 20190820\_FLIVI\_CENTERB-WS LSL Sample ID: 1913840-007  
Location:  
Sampled: 08/20/19 10:23 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.19 mg/l		8/21/19 14:10	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P	0.19 mg/l	8/26/19	8/28/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Sample ID: 20190820\_FLIVI\_SOUTH3-WS LSL Sample ID: 1913840-008  
Location:  
Sampled: 08/20/19 11:52 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.051 mg/l		8/21/19 14:11	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P	0.014 mg/l	8/26/19	8/28/19	HKB

Sample ID: 20190820\_FLIVI\_SOUTH10-WS LSL Sample ID: 1913840-009  
Location:  
Sampled: 08/20/19 11:47 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.16 mg/l		8/21/19 14:12	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P	0.0089 mg/l	8/26/19	8/28/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

SUNY Geneseo Geneseo, NY

Sample ID: 20190820\_FLIVI\_SOUTH14-WS LSL Sample ID: 1913840-010  
Location:  
Sampled: 08/20/19 11:42 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.24 mg/l		8/21/19 14:14	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.039 mg/l	8/26/19	8/28/19	HKB

Sample ID: 20190820\_FLIVI\_SOUTH16-WS LSL Sample ID: 1913840-011  
Location:  
Sampled: 08/20/19 11:30 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.58 mg/l		8/21/19 14:14	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.42 mg/l	8/26/19	8/28/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Sample ID: 20190820\_FLIVI\_SOUTHB-WS LSL Sample ID: 1913840-012  
Location:  
Sampled: 08/20/19 11:22 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous				
Reactive Phosphate as P	0.58 mg/l		8/21/19 14:15	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level				
Phosphorus, Total as P	0.41 mg/l	8/26/19	8/28/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>				

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab



# Life Science Laboratories, Inc.

1913840

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Th SUNY\_Geneseo  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: 1 College Circle  
 City/State: Geneseo, NY  
 Phone: 585-245-5303  
 Email: bosch@geneseo.edu

Zip: 14454  
 Fax: \_\_\_\_\_

**Client Project ID/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190820_FLIV_NORTH3-WS		8-20-19	9:46	NPW	None, Field Filtered	Orthophosphate		001A
20190820_FLIV_NORTH8-WS			9:36	NPW	None, Field Filtered	Orthophosphate		002A
20190820_FLIV_NORTH10-WS			9:24	NPW	None, Field Filtered	Orthophosphate		003A
20190820_FLIV_CENTR3-WS			10:54	NPW	None, Field Filtered	Orthophosphate		004A
20190820_FLIV_CENTR8-WS			10:45	NPW	None, Field Filtered	Orthophosphate		005A
20190820_FLIV_CENTR10-WS			10:35	NPW	None, Field Filtered	Orthophosphate		006A
20190820_FLIV_CENTRB-WS			10:23	NPW	None, Field Filtered	Orthophosphate		007A
20190820_FLIV_SOUTH3-WS			11:52	NPW	None, Field Filtered	Orthophosphate		008A
20190820_FLIV_SOUTH10-WS			11:47	NPW	None, Field Filtered	Orthophosphate		009A
20190820_FLIV_SOUTH14-WS			11:42	NPW	None, Field Filtered	Orthophosphate		010A

**Turnaround Time**  
 Normal:  14 Day\*  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**LSL Project Number:**

**Custody Transfers**  
 Received by: GIJANA BRIDG  
 Received by:  
 Rec'd for lab by: LS  
 Samples Received Intact:  Y  N  
 Date: 8-20-19 Time: 12:50  
 Sample Temp: 50

**LSL Sample Comments:**  
 10 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample  
 All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

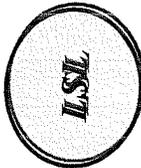
LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern  
30 E. Main St.  
Cuba, NY 147. SUNY\_Geneseo  
p) 585-968-26.  
f) 585-968-090

7706



**Report Address:**  
 Name: **Sid Bosch**  
 Company: **SUNY-Geneseo**  
 Street: **1 College Circle**  
 City/State: **Geneseo, NY**  
 Phone: **585-245-5303**  
 Email: **bosch@geneseo.edu**

Zip: **14454**  
 Fax: \_\_\_\_\_

**Client Project ID/Client Site ID**

**Turnaround Time**  
 Normal:  14 Day\*  3 Day\*  7 Day\*  
 Pre-Audit:  1 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190820_FLVI_NORTH3-WS		8-20	9:46	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	001B
20190820_FLVI_NORTH8-WS			9:36	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	002B
20190820_FLVI_NORTHB-WS			9:24	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	003B
20190820_FLVI_CENTR3-WS			10:54	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	001B
20190820_FLVI_CENTR8-WS			10:45	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	005B
20190820_FLVI_CENTR10-WS			10:35	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	006B
20190820_FLVI_CENTRB-WS			10:13	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	007B
20190820_FLVI_SOUTH3-WS			11:52	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	008B
20190820_FLVI_SOUTH10-WS			11:47	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	009B
20190820_FLVI_SOUTH14-WS			11:42	NPW	H2SO4 Acid Pres.	Total Phosphorus	CA	010B

**Custody Transfers**

Sampled by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received by: Sid Bosch  
 Rec'd for lab by: DS  
 Samples Received Intact: Y N  
 Date: 8-20-19  
 Time: 12:20  
 Sample Temp: 50

LSL Sample Comments: Samples Received On Ice  
10 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composite sample

**All areas of this Chain of Custody Record must be filled out in pen only**















# Life Science Laboratories, Inc.

## Sample Receipt Checklist

LSL LIMS

**Project ID** 1911784 **Client ID:** SUNY\_Geneseo  
**Shipment Number** 1 **SRC Completed By:** jms01 **Date:** 8/6/2019 2:46:16 PM

<i>COC Date/Time</i>	<i>Received By</i>	<i>Carrier</i>	<i>ShippingID</i>
7/23/2019 1:35:00 PM	jms01	Hand Delivered	
<i>Shipping container/cooler in good condition?</i>	Yes	<i>Sample containers intact?</i>	Yes
<i>Custody seal intact on shipping container/cooler?</i>	N/A	<i>Sufficient sample volume for indicated test?</i>	Yes
<i>Custody seals intact on sample bottles?</i>	N/A	<i>All samples received within holding time?</i>	Yes
<i>Chain of Custody present?</i>	Yes	<i>Container/Temp Blank temperature in compliance?</i>	Yes
<i>COC signed when relinquished and received?</i>	Yes	<i>Water - VOA vials have zero headspace?</i>	N/A
<i>COC agrees with sample labels?</i>	Yes	<i>Water - pH acceptable upon receipt?</i>	No
<i>Samples in proper containers/bottles?</i>	Yes	<i>Water - HNO3 added to unpreserved metal sample(s) to a pH of &lt;2?</i>	N/A

Preservative	pH Acceptable	Sample IDs	Volume added in Lab
NaOH	N/A		
HNO3	N/A		
HSO4	No	012B	0.5 ml
HCl	N/A		
Pest/PCB	N/A		

**Comments:** Sulfuric acid was added to sample 012B upon receipt at lab. All other containers requiring preservative were preserved to the correct pH - jms

**Corrective Action:**

**Reviewed By:** \_\_\_\_\_

# Life Science Laboratories, Inc. 1911784

LSL Central Lab 5854 Butternut LSL North Lab  
 Drive E. Syracuse, NY 13057 p) 131 St. Lawrence Ave.  
 315-445-1105 f) 315-445-1301 Waddington, NY 13694  
 CHAIN OF CUSTODY RECORD LSL Finger Lakes Lab  
 16 N. Main St.  
 Wayland, NY 14572  
 p) 585-728-3320  
 f) 585-728-2711

7706

SUNY\_Geneseo

4424



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY Geneseo  
 Street: 1 College Circle  
 City/State: Geneseo, NY  
 Phone: 585-245-5303 Zip: 14454  
 Email: bosch@geneseo.edu Fax:

**Client Project ID/Client Site ID**

**Turnaround Time**  
 Normal:  1 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  2 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**LSL Project Number:**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190723_FLIV_North3-WS	Conesus Lake - North Basin	7/23/2019	10:49	NPW	None, Field Filtered	Orthophosphate		001A
20190723_FLIV_North8-WS	Conesus Lake - North Basin	7/23/2019	10:57	NPW	None, Field Filtered	Orthophosphate		002A
20190723_FLIV_NorthB-WS	Conesus Lake - North Basin	7/23/2019	11:13	NPW	None, Field Filtered	Orthophosphate		003A
20190723_FLIV_Center3-WS	Conesus Lake - Center Basin	7/23/2019	11:30	NPW	None, Field Filtered	Orthophosphate		004A
20190723_FLIV_Center8-WS	Conesus Lake - Center Basin	7/23/2019	11:37	NPW	None, Field Filtered	Orthophosphate		005A
20190723_FLIV_Center10-WS	Conesus Lake - Center Basin	7/23/2019	11:43	NPW	None, Field Filtered	Orthophosphate		006A
20190723_FLIV_CenterB-WS	Conesus Lake - Center Basin	7/23/2019	11:52	NPW	None, Field Filtered	Orthophosphate		007A
20190723_FLIV_South3-WS	Conesus Lake - South Basin	7/23/2019	12:15	NPW	None, Field Filtered	Orthophosphate		008A
20190723_FLIV_South10-WS	Conesus Lake - South Basin	7/23/2019	12:24	NPW	None, Field Filtered	Orthophosphate		009A
20190723_FLIV_South14-WS	Conesus Lake - South Basin	7/23/2019	12:36	NPW	None, Field Filtered	Orthophosphate		010A

**Custody Transfers**

Received by: Christina Renoit Date: 7-23-18 Time: 1:03

Received by:

Rec'd for lab by: Johnna Shroy Sample Temp: 13.83

Samples Received Intact: Y N

**All areas of this Chain of Custody Record must be filled out in pen only**

LSL Sample Comments: 10 Containers this COC

Relinquished by: Christina Renoit

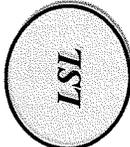
Relinquished by:

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample



# Life Science Laboratories, Inc.

1911784



LSL Central Lab  
Drive  
315-445-1105

5854 Butternut  
E. Syracuse, NY 13057  
315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
315-388-4476

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
585-728-3320

LSL South SUNY\_Geneseo  
30 E. Main  
Cuba, NY 1  
585-968-  
585-968-1

7706

**Report Address:**

Name: Sid Bosch  
Company: SUNY Geneseo  
Street: 1 College Circle  
City/State: Geneseo, NY  
Phone: 585-245-5303  
Email: bosch@geneseo.edu

Zip: 14454  
Fax:

**Client Project ID/Client Site ID**

**Turnaround Time**  
 Normal  Pre-Authorized   
 14 Day  1 Day\*  3 Day\*   
 2 Day\*  7 Day\*

**Date Needed or Special Instructions:**

**Authorization or PO #:**

LSL Project Number:

\*Additional charges may apply

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190723_FLIV1_North3-WS	Conesus Lake - North Basin	7/23/2019	10:48	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	001B
20190723_FLIV1_North8-WS	Conesus Lake - North Basin	7/23/2019	10:56	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	002B
20190723_FLIV1_NorthB-WS	Conesus Lake - North Basin	7/23/2019	11:11	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	003B
20190723_FLIV1_Center3-WS	Conesus Lake - Center Basin	7/23/2019	11:29	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	004B
20190723_FLIV1_Center8-WS	Conesus Lake - Center Basin	7/23/2019	11:35	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	005B
20190723_FLIV1_Center10-WS	Conesus Lake - Center Basin	7/23/2019	11:42	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	006B
20190723_FLIV1_CenterB-WS	Conesus Lake - Center Basin	7/23/2019	11:50	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	007B
20190723_FLIV1_South3-WS	Conesus Lake - South Basin	7/23/2019	12:14	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	008B
20190723_FLIV1_South10-WS	Conesus Lake - South Basin	7/23/2019	12:28	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	009B
20190723_FLIV1_South14-WS	Conesus Lake - South Basin	7/23/2019	12:34	NPW	H2SO4 Acid Pres.	Total Phosphorus	<2	010B

**Custody Transfers**

Sampled by: Bosch  
 Relinquished by:  
 Relinquished by:

Received by:  
 Received by:  
 Rec'd for lab by: Jordan Shober  
 Samples Received Intact: Y N  
 Date: 7-23-19  
 Sample Temp: 18.35

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

1911784

LSL Central Lab  
E. Syracuse, NY 13057  
f) 315-445-1301

5854 Butternut Drive  
p) 315-445-1105

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern: SUNY\_Geneseo  
30 E. Main St  
Cuba, NY 14:  
p) 585-968-21  
f) 585-968-06

7706

CHAIN OF CUSTODY RECORD

**Report Address:**

Name: Sid Bosch  
Company: SUNY Geneseo  
Street: 1 College Circle  
City/State: Geneseo, NY  
Phone: 585-245-5303  
Email: bosch@geneseo.edu

Zip: 14454  
Fax: \_\_\_\_\_

**Client Project ID/Client Site ID**

Turnaround Time		Pre-Authorized		Analysis		Preserv	LSL
Normal	14 Day	1 Day*	2 Day*	3 Day*	7 Day*	Check	ID #
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<<2	0113
*Additional charges may apply							
<b>Date Needed or Special Instructions:</b>							
<b>Authorization or PO #:</b>							
<b>LSL Project Number:</b>							
Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check
20190723_FL1V1_South16-WS	Conesus Lake - South Basin	7/23/2019	10:40	NPW	H2SO4 Acid Pres.	Total Phosphorus	<<2
20190723_FL1V1_SouthB-WS	Conesus Lake - South Basin	7/23/2019	12:46	NPW	H2SO4 Acid Pres.	Total Phosphorus	* <<2
20190723_FL1V1_South10-QC	Conesus Lake - South Basin	7/23/2019	12:38	NPW	H2SO4 Acid Pres.	Total Phosphorus	<<2
20190723_FL1V1_FB	Field Blank	7/23/2019	10:39	NPW	H2SO4 Acid Pres.	Total Phosphorus	<<2
* sample preserved in lab jar							
<b>Custody Transfers</b>							
Sampled by: <u>Bosch</u>							
Relinquished by: _____							
Relinquished by: _____							
Received by: _____							
Rec'd for lab by: <u>Bosch</u>							
Samples Received Intact: <u>Y</u> <u>N</u>							
Date: <u>7-23-19</u> Time: <u>18:35</u>							
Sample Temp: _____							

LSL Sample Comments: 4 Containers this COC  
On Ice

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

Sample ID: 20190626\_FLIVI\_Center10\_WS LSL Sample ID: 1909924-006  
Location: Conesus Lake Center  
Sampled: 06/26/19 11:10 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(I) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.023 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_CenterB\_WS LSL Sample ID: 1909924-007  
Location: Conesus Lake Center  
Sampled: 06/26/19 11:15 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(I) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.025 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_South3\_WS LSL Sample ID: 1909924-008  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 11:49 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(I) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.029 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_South10\_WS LSL Sample ID: 1909924-009  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 11:54 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(I) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.020 mg/l		7/11/19	HKB

Sample ID: 20190626\_FLIVI\_South14\_WS LSL Sample ID: 1909924-010  
Location: Conesus Lake South Basin  
Sampled: 06/26/19 11:56 Sampled By:  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(I) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.023 mg/l		7/11/19	HKB

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190626\_FLIVI\_South16\_WS      **LSL Sample ID:** 1909924-011  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 11:58      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.019 mg/l		7/11/19	HKB

**Sample ID:** 20190626\_FLIVI\_SouthB\_WS      **LSL Sample ID:** 1909924-012  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 12:04      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.056 mg/l		7/11/19	HKB

**Sample ID:** 20190626\_FLIVI\_SouthB\_QL      **LSL Sample ID:** 1909924-013  
**Location:** Conesus Lake South Basin  
**Sampled:** 06/26/19 12:09      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.028 mg/l		7/11/19	HKB

**Sample ID:** 20190626\_FLIVI\_B      **LSL Sample ID:** 1909924-014  
**Location:**  
**Sampled:** 06/26/19 13:30      **Sampled By:**  
**Sample Matrix:** NPW

<b>Analytical Method</b>	<b>Prep Method</b>	<b>Prep Date</b>	<b>Analysis Date &amp; Time</b>	<b>Analyst Initials</b>
<b>Analyte</b>	<b>Result Units</b>			
(1) EPA 365.1, Rev. 2.0 (1993) Total Phosphorus				
Phosphorus, Total as P	0.012 mg/l		7/11/19	HKB

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

1909924

SUNY\_Genesee

7706



**Report Address:**  
 Name: SJD Baska  
 Company: SUNY - GENESCO  
 Street: 1 College Circle  
 City/State: Geneva NY  
 Phone: 585-245-5303  
PO BOX 6 GENESCO BLDG

Zip: 14451  
 Fax: \_\_\_\_\_

Authorization or PO #: \_\_\_\_\_

LSL Project Number: \_\_\_\_\_

**Turnaround Time**  
 Normal: Pre-Authorize \_\_\_\_\_  
 14 Day: 1 Day\*  3 Day\*   
 2 Day\*  7 Day\*

Date Needed or Special Instructions: \_\_\_\_\_

\*Additional charges may apply

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20170605 - FLEVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/05/2019</del>	<del>10:35 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>001A</del>
<del>20170605 - FLEVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/05/2019</del>	<del>10:36 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>—</del>	<del>—</del>
<del>20170605 - FLEVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - NORTH BASIN</del>	<del>6/05/2019</del>	<del>10:37 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>002A</del>
<del>20170605 - FLEVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>11:05 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>003A</del>
<del>20170605 - FLEVE - NORTH 3 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>—</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>—</del>	<del>—</del>
<del>20170605 - FLEVE - CENTER 8 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>11:06 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>004A</del>
<del>20170605 - FLEVE - CENTER 10 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>11:10 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>005A</del>
<del>20170605 - FLEVE - CENTER 8 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>11:15 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>006A</del>
<del>20170605 - FLEVE - CENTER 10 - WS</del>	<del>CONESUS LAKE - CENTER</del>	<del>6/05/2019</del>	<del>11:49 AM</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>007A</del>
<del>20170605 - FLEVE - SOUTH 3 - WS</del>	<del>CONESUS LAKE - SOUTH BASIN</del>	<del>6/05/2019</del>	<del>—</del>	<del>NPW</del>	<del>Acid H2SO4</del>	<del>TOTAL Phosphorus</del>	<del>&lt;2</del>	<del>008A</del>

LSL Sample Comments: Samples Received  
8 Containers this COC  
 On Ice

**Custody Transfers**  
 Sampled by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Rec'd for lab by: Jacob Shisler  
 Samples Received In tact: Y N  
 Date: 6-26-19 14:11  
 Sample Temp: 6.0

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample  
 All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

1909924

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

SUNY\_Geneseo

**Report Address:**  
 Name: SD Asci  
 Company: SUNY - GENESEO  
 Street: 1 College Circle  
 City/State: GENESEO, NY  
 Phone: 585-968-2640  
PO BOX 6000  
 Client Project ID/Client Site ID: \_\_\_\_\_

**Turnaround Time**  
 Normal:  14 Day  1 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  2 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:** \_\_\_\_\_

**Authorization or PO #:** \_\_\_\_\_

**LSL Project Number:** \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20190626 FIVE SOUTH - WS</del>	<del>CONCRETE LAKE - SOUTH BASIN</del>	<del>6/15/2019</del>	<del>---</del>	<del>NPW</del>	<del>ACID</del>	<del>TOTAL AMMONIUM</del>	<del>---</del>	<del>---</del>
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	11:54 AM	NPW	ACID H2SO4	TOTAL AMMONIUM	<2	009A
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	11:56 AM	NPW	ACID H2SO4	TOTAL AMMONIUM	<2	010A
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	11:58 AM	NPW	ACID H2SO4	TOTAL AMMONIUM	<2	011A
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	12:04 PM	NPW	ACID H2SO4	TOTAL AMMONIUM	<2	012A
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	12:09 PM	NPW	ACID	TOTAL PHOSPHORUS	<2	013A
20190626 FIVE SOUTH - WS	CONCRETE LAKE - SOUTH BASIN	6/15/2019	12:20	NPW	ACID	TOTAL PHOSPHORUS	<2	014A

**LSL Sample Comments:** Samples Received On Ice  
6 Containers: this COC

**Custody Transfers**  
 Received by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Rec'd for lab by: Jordan Shiner  
 Samples Received Intact: Y N  
 Date: 6/15/19 Time: 14:11  
 Sample Temp: 6.0

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composite sample  
 All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

1909924

SUNY\_Geneseo

7706

### Report Address:

Name: SID BOSCH  
Company: SUNY - GENESEO  
Street: 1 COLLEGE CIRCLE  
City/State: GENESEO, NY  
Phone: 585-745-5303  
BOSCH@GENESEO.EDU

Zip: 14454  
Fax:

### Turnaround Time

Normal:  Pre-Authorize  
14 Day: 1 Day\*  3 Day\*   
 2 Day\*  7 Day\*

\*Additional charges may apply

### Date Needed or Special Instructions:

### Authorization or PO #:

### Client Project ID/Client Site ID

### LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20100605 - FLEVE - NORTH BASIN - MS</del>	CONGENUS LAKE - NORTH BASIN	6/05/2019	10:35 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	001A
<del>20100605 - FLEVE - NORTH BASIN - MS</del>	CONGENUS LAKE - NORTH BASIN	6/05/2019	10:36 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	—	—
<del>20100605 - FLEVE - NORTH BASIN - MS</del>	CONGENUS LAKE - NORTH BASIN	6/05/2019	10:36 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	002A
<del>20100605 - FLEVE - NORTH BASIN - MS</del>	CONGENUS LAKE - NORTH BASIN	6/05/2019	10:37 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	003A
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	11:05 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	004A
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	—	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	—	—
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	11:06 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	005A
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	11:10 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	006A
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	11:15 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	007A
<del>20100605 - FLEVE - CENTER BASIN - MS</del>	CONGENUS LAKE - CENTER	6/05/2019	11:49 AM	NPWT	ACID H2SO4	TOTAL PHOSPHORUS	<2	008A

### Custody Transfers

Received by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Rec'd for lab by: Jordan Shisler

Samples Received Intact: Y N

Date: 6-26-19

Sample Temp: 6.0

LSL Sample Comments: 8 Samples Received On Ice

Containers this COC

\*\* PW= Potable water, NPWT= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

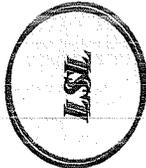
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier Lab  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

1909924

SUNY\_Geneseo

7706



### Report Address:

Name: SED BOSSA  
 Company: SUNY - GENESEO  
 Street: 1 COLLEGE CIRCLE  
 City/State: GENESEO NY  
 Phone: 585-445-5303  
PO BOX 60500 GENESEO NY  
 Zip: 14454  
 Fax:

### Client Project ID/Client Site ID

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
<del>20190625 - FINE - SOUTH - WS</del>	<del>CONSENSUS LAKE - SOUTH BASIN</del>	<del>6/25/2019</del>		<del>NPW</del>	<del>Acid</del>	<del>TOTAL PHOSPHATES</del>	<del>—</del>	<del>—</del>
20190625 - FINE - SOUTH - WS	CONSENSUS LAKE - SOUTH BASIN	6/25/2019	11:54 AM	NPW	Acid H <sub>2</sub> SO <sub>4</sub>	TOTAL PHOSPHATES	<2	009A
20190625 - FINE - SOUTH - WS	CONSENSUS LAKE - SOUTH BASIN	6/25/2019	11:56 AM	NPW	Acid H <sub>2</sub> SO <sub>4</sub>	TOTAL PHOSPHATES	<2	010A
20190625 - FINE - SOUTH - WS	CONSENSUS LAKE - SOUTH BASIN	6/25/2019	11:58 AM	NPW	Acid H <sub>2</sub> SO <sub>4</sub>	TOTAL PHOSPHATES	<2	011A
20190625 - FINE - SOUTH - WS	CONSENSUS LAKE - SOUTH BASIN	6/25/2019	12:01 PM	NPW	Acid H <sub>2</sub> SO <sub>4</sub>	TOTAL PHOSPHATES	<2	012A
20190625 - FINE - SOUTH - OL	CONSENSUS LAKE - SOUTH BASIN	6/25/2019	12:01 PM	NPW	Acid	TOTAL PHOSPHATE	<2	013A
20190626 - FINE - B	CONSENSUS LAKE - SOUTH BASIN	6/26/2019	13:30	NPW	Acid	TOTAL PHOSPHATE	<2	014A

LSL Sample Comments: 6 Samples Received On Ice  
 Containers this COC

Received by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received for lab by: Jordan Skisler  
 Samples Received Intact: Y N  
 Date: 6-26-19  
 Time: 14:11  
 Sample Temp: 6.0

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample  
 All areas of this Chain of Custody Record must be filled out in pen only



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report Prepared For SUNY Geneseo

LSL Project ID: 1911788

Receive Date/Time: 07/23/19 13:35

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box 424  
Wayland, NY 14572  
Tel. (585) 728-3320  
Fax (585) 728-2711  
NYS DOH ELAP #11667

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

*LaDonna Kibler*  
LaDonna Kibler, Quality Assurance

Date:

*8/7/19*

# -- LABORATORY ANALYSIS REPORT --

SUNY Geneseo Geneseo, NY

<b>Sample ID:</b>	20190723_FLIVI_WCUP-WS	<b>LSL Sample ID:</b>	1911788-001
<b>Location:</b>	Wilkins Creek Upstream		
<b>Sampled:</b>	07/23/19 9:00	<b>Sampled By:</b>	Client
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
Reactive Phosphate as P	0.045	mg/l		7/24/19 13:16	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
Phosphorus, Total as P	0.058	mg/l	7/24/19	7/26/19	HKB
(1) EPA Method 300.0 A					
Nitrate as N	0.57	mg/l		7/24/19 11:49	EP
Nitrite as N	<0.1	mg/l		7/24/19 11:49	EP
(1) SM 2540 D-2011 Total Suspended Solids					
Total Suspended Solids @ 103-105 C	<4	mg/l		7/26/19	CBR
<i>This sample analysis did not meet the method required minimum residue weight for the sample volume provided. An insufficient sample volume was provided by the client. Therefore, this result should be considered an estimate.</i>					

<b>Sample ID:</b>	20190723_FLIVI_WCDN-WS	<b>LSL Sample ID:</b>	1911788-002
<b>Location:</b>	Wilkins Creek Downstream		
<b>Sampled:</b>	07/23/19 8:02	<b>Sampled By:</b>	Client
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
Reactive Phosphate as P	0.047	mg/l		7/24/19 13:17	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
Phosphorus, Total as P	0.060	mg/l	7/24/19	7/26/19	HKB
(1) EPA Method 300.0 A					
Nitrate as N	0.39	mg/l		7/24/19 12:08	EP
Nitrite as N	<0.1	mg/l		7/24/19 12:08	EP
(1) SM 2540 D-2011 Total Suspended Solids					
Total Suspended Solids @ 103-105 C	<4	mg/l		7/26/19	CBR
<i>This sample analysis did not meet the method required minimum residue weight for the sample volume provided. An insufficient sample volume was provided by the client. Therefore, this result should be considered an estimate.</i>					

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab





# -- LABORATORY ANALYSIS REPORT --

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20190723\_FLIVI\_FB **LSL Sample ID:** 1911788-007  
**Location:** Field Blank  
**Sampled:** 07/23/19 8:30 **Sampled By:** Client  
**Sample Matrix:** NPW

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	<0.002	mg/l		7/24/19 13:22	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	<0.002	mg/l	7/24/19	7/26/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	<0.1	mg/l		7/24/19 14:25	EP
<b>Nitrite as N</b>	<0.1	mg/l		7/24/19 14:25	EP
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		7/26/19	CBR

**Sample ID:** 20190723\_FLIVI\_NMDN-QC **LSL Sample ID:** 1911788-008  
**Location:** Site Duplicate  
**Sampled:** 07/23/19 10:50 **Sampled By:** Client  
**Sample Matrix:** NPW

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.090	mg/l		7/24/19 13:23	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.0051	mg/l	7/24/19	7/25/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	0.28	mg/l		7/24/19 14:45	EP
<b>Nitrite as N</b>	<0.1	mg/l		7/24/19 14:45	EP
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		7/26/19	CBR
<i>This sample analysis did not meet the method required minimum residue weight for the sample volume provided. An insufficient sample volume was provided by the client. Therefore, this result should be considered an estimate.</i>					

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# Life Science Laboratories, Inc.

## Sample Receipt Checklist

LSL LIMS

**Project ID**

1911788

**Client ID:** SUNY\_Geneseo

**Shipment Number**

1

**SRC Completed By:** jms01

**Date:**

8/6/2019 3:09:15 PM

<i>COC Date/Time</i>	<i>Received By</i>	<i>Carrier</i>	<i>ShippingID</i>
7/23/2019 1:35:00 PM	jms01	Hand Delivered	
<i>Shipping container/cooler in good condition?</i>	Yes	<i>Sample containers intact?</i>	Yes
<i>Custody seal intact on shipping container/cooler?</i>	N/A	<i>Sufficient sample volume for indicated test?</i>	Yes
<i>Custody seals intact on sample bottles?</i>	N/A	<i>All samples received within holding time?</i>	Yes
<i>Chain of Custody present?</i>	Yes	<i>Container/Temp Blank temperature in compliance?</i>	Yes
<i>COC signed when relinquished and received?</i>	Yes	<i>Water - VOA vials have zero headspace?</i>	N/A
<i>COC agrees with sample labels?</i>	Yes	<i>Water - pH acceptable upon receipt?</i>	Yes
<i>Samples in proper containers/bottles?</i>	Yes	<i>Water - HNO3 added to unpreserved metal sample(s) to a pH of &lt;2?</i>	N/A

**Comments:**

Nitrate and Nitrite samples were preserved with sulfuric acid by client prior to delivery of samples. Client was provided with unpreserved 250 ml bottles prior to sampling. Unpreserved sample bottles submitted for TSS will be used for the Nitrate and Nitrite analyses. (jms)

**Corrective Action:**

**Reviewed By:**



# Life Science Laboratories, Inc.

1911788

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

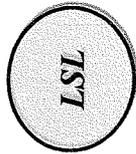
LSL North Lab  
Waddington, NY 13694  
315-388-4476

131 St. Lawrence  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier L<sup>r</sup> SUNY\_Geneseo  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706



### Report Address:

Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: 1 College Circle  
 City/State: Geneseo/NY  
 Phone: 585-245-5303  
 Zip: 14454  
 Fax: \_\_\_\_\_  
 Email: Bosch@geneseo.edu

Turnaround Time  
 Normal:  Pre-Authorized   
 14 Day:  1 Day\*  3 Day\*   
 2 Day\*  7 Day\*

Date Needed or Special Instructions:

\*Additional charges may apply

Authorization or PO #:

### Client Project ID/Client Site ID

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190723_FLIV_WCUP-WS	Wilkins Creek Upstream	7/23/2019	7:00am	NPW	None - Field Filtered	Orthophosphate		001B
20190723_FLIV_WCDN-WS	Wilkins Creek Downstream	7/23/2019	8:02am	NPW	None - Field Filtered	Orthophosphate		002B
20190723_FLIV_NGUP-WS	North Gully Upstream	7/23/2019	10AM	NPW	None - Field Filtered	Orthophosphate		003B 007B
20190723_FLIV_NGDN-WS	North Gully Downstream	7/23/2019	9:32AM	NPW	None - Field Filtered	Orthophosphate		001B
20190723_FLIV_NMUP-WS	North McMillan Upstream	7/23/2019	11:5 AM	NPW	None - Field Filtered	Orthophosphate		005B
20190723_FLIV_NMDN-WS	North McMillan Downstream	7/23/2019	10:5 AM	NPW	None - Field Filtered	Orthophosphate		006B
20190723_FLIV_FB	Field Blank	7/23/2019	8:30am	NPW	None - Field Filtered	Orthophosphate		007B
20190723_FLIV_NMDN-QC	Site Duplicate	7/23/2019	10:5AM	NPW	None - Field Filtered	Orthophosphate		008B
Custody Transfers								
Received by: _____								
Received by: _____								
Rec'd for lab by: <u>Juan Shino</u>								
Samples Received Intact: <u>Y N</u>								
Sample Temp: <u>13.35</u>								

All areas of this Chain of Custody Record must be filled out in pen only

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composite sample

# Life Science Laboratories, Inc.

1911788



LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

131 St. Lawrence  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320

CHAIN OF CUSTODY RECORD

LSL Southern Tier L. SUNY\_Geneseo  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

**Report Address:**

Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: 1 College Circle  
 City/State: Geneseo/NY  
 Phone: 585-245-5303  
Bosch@geneseo.edu  
 Zip: 14454  
 Fax: \_\_\_\_\_

**Turnaround Time**

Normal: \_\_\_\_\_  
 Pre-Authorized:  
 14 Day  1 Day\*  3 Day\*   
 2 Day\*  7 Day\*

\*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**Client Project ID/Client Site ID**

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190723_FLIVI_WCUP-WS	Wilkins Creek Upstream	7/23/2019	9:00 am	NPW	Acid H2SO4	Total Phosphorus	<2	004C
20190723_FLIVI_WCDN-WS	Wilkins Creek Downstream	7/23/2019	8:02 am	NPW	Acid H2SO4	Total Phosphorus	<3	002C
20190723_FLIVI_NGUP-WS	North Gully Upstream	7/23/2019	10 AM	NPW	Acid H2SO4	Total Phosphorus	<2	003C
20190723_FLIVI_NGDN-WS	North Gully Downstream	7/23/2019	9:30 AM	NPW	Acid H2SO4	Total Phosphorus	<2	004C
20190723_FLIVI_NMUP-WS	North McMillan Upstream	7/23/2019	11:5 AM	NPW	Acid H2SO4	Total Phosphorus	<2	005C
20190723_FLIVI_NMDN-WS	North McMillan Downstream	7/23/2019	10:45 AM	NPW	Acid H2SO4	Total Phosphorus	<2	006C
20190723_FLIVI_FB	Field Blank	7/23/2019	8:30 am	NPW	Acid H2SO4	Total Phosphorus	<2	007C
20190723_FLIVI_NMDN-QC	Site Duplicate	7/23/2019	10:50 AM	NPW	Acid H2SO4	Total Phosphorus	<2	008C
<b>Custody Transfers</b>								
Received by: _____								
Received by: _____								
Rec'd for lab by: <u>Jordan Shuster</u>								
Samples Received Intact: Y N								
Date: <u>7-23-19</u> Time: <u>13:25</u>								
Sample Temp: <u>9.0</u>								

LSL Sample Comments: Samples Received On Ice

8 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

1911788

7706

LSL Southern SUNY\_Geneseo  
30 E. Main St  
Cuba, NY 147  
p) 585-968-26  
f) 585-968-091

## CHAIN OF CUSTODY RECORD

LSL North Lab  
131 St. Lawrence  
Waddington, NY 13694  
p) 315-388-4061  
f) 315-388-4476

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL Finger Lakes Lab  
16 N. Main St  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

### Report Address:

Name: **Sid Bosch**

Company: **SUNY-Geneseo**

Street: **1 College Circle**

City/State: **Geneseo/NY**

Phone: **585-245-5303**

[Bosch@geneseo.edu](mailto:Bosch@geneseo.edu)

Zip: **14454**

Fax:

### Client Project ID/Client Site ID

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190723_FLIV_WCUP-WS	Wilkins Creek Upstream	7/23/2019	9:00 am	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite *	✓	0010
20190723_FLIV_WCDN-WS	Wilkins Creek Downstream	7/23/2019	8:02 am	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0020
20190723_FLIV_NGUP-WS	North Gully Upstream	7/23/2019	10 AM	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0030
20190723_FLIV_NGDN-WS	North Gully Downstream	7/23/2019	9:32 AM	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0040
20190723_FLIV_NMUP-WS	North McMillan Upstream	7/23/2019	11:5 AM	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0050
20190723_FLIV_NMDN-WS	North McMillan Downstream	7/23/2019	10:45 AM	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0060
20190723_FLIV_FB	Field Blank	7/23/2019	8:30 am	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0070
20190723_FLIV_NMDN-QC	Site Duplicate	7/23/2019	10:50 AM	NPW	Acid H2SO4 - Field Filtered	Nitrate + Nitrite	✓	0080
* Unpreserved sample needed to perform analysis. A bottles used: 8/7/2019								
LSL Sample Comments: Samples Received On Ice Containers this COC								
Relinquished by: <u>Christina</u> Relinquished by: <u>On Ice</u> Relinquished by: <u>8</u>								
Sampled by: <u>Christina</u> Relinquished by: <u>On Ice</u> Relinquished by: <u>8</u>								
Received by: _____ Received by: _____ Rec'd for lab by: <u>Janet Shaker</u> Samples Received Intact: <u>Y N</u> Date: <u>7-23-19</u> Time: <u>1:35</u> Sample Temp: <u>10</u>								

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample

All areas of this Chain of Custody Record must be filled out in pen only



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

### Prepared For

### SUNY Geneseo

LSL Project ID: 1913241

Receive Date/Time: 08/13/19 11:46

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

Date:

9/3/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:







# -- LABORATORY ANALYSIS REPORT --

SUNY Geneseo Geneseo, NY

<b>Sample ID:</b>	20190813_FLIVI_FB	<b>LSL Sample ID:</b>	1913241-007
<b>Location:</b>	Field Blank		
<b>Sampled:</b>	08/13/19 8:00	<b>Sampled By:</b>	MEL
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	<0.002	mg/l		8/14/19 10:31	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.58	mg/l	8/19/19	8/21/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>					
(1) EPA Method 300.0 A <b>Nitrate as N</b>	<0.1	mg/l		8/14/19 21:47	EP
<b>Nitrite as N</b>	<0.1	mg/l		8/14/19 21:47	EP
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		8/16/19	CBR

<b>Sample ID:</b>	20190813_FLIVI_NGUP-QC	<b>LSL Sample ID:</b>	1913241-008
<b>Location:</b>	Site Duplicate		
<b>Sampled:</b>	08/13/19 9:45	<b>Sampled By:</b>	MEL
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.020	mg/l		8/14/19 10:32	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.031	mg/l	8/19/19	8/21/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	0.39	mg/l		8/14/19 13:32	EP
<b>Nitrite as N</b>	<0.2	mg/l		8/14/19 13:32	EP
<i>Elevated detection limit due to matrix interference.</i>					
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	4.0	mg/l		8/16/19	CBR

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# Life Science Laboratories, Inc.



LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

131 St. Lawrence  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320

CHAIN OF CUSTODY RECORD  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

1913241  
LSL South  
30 E. Main  
Cuba, NY SUNY\_Geneseo  
p) 585-968  
f) 585-968

7706

**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303 Zip: 14454 Fax: \_\_\_\_\_

**Authorization or PO #:** \_\_\_\_\_

**Turnaround Tim**  
 Normal \_\_\_\_\_  
 14 Day\*  1 Day\*  3 Day\*   
 2 Day\*  7 Day\*  \*Additional charges may apply

**Date Needed or Special Instructions:** \_\_\_\_\_

**LSL Project Number:** \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190813_FLIV_WCUP-WS	Wilkins Creek Upstream	8/13/2019	8:13 AM	NPW	None - Field Filtered	Orthophosphate		001A
20190813_FLIV_WCDN-WS	Wilkins Creek Downstream	8/13/2019	9:05 AM	NPW	None - Field Filtered	Orthophosphate		002A
20190813_FLIV_NGUP-WS	North Gully Upstream	8/13/2019	9:43 AM	NPW	None - Field Filtered	Orthophosphate		003A
20190813_FLIV_NGDN-WS	North Gully Downstream	8/13/2019	9:40 AM	NPW	None - Field Filtered	Orthophosphate		004A
20190813_FLIV_NMUP-WS	North McMillan Upstream	8/13/2019	10:50 AM	NPW	None - Field Filtered	Orthophosphate		005A
20190813_FLIV_NMDN-WS	North McMillan Downstream	8/13/2019	10:31 AM	NPW	None - Field Filtered	Orthophosphate		006A
20190813_FLIV_FB	Field Blank	8/13/2019	8:00 AM	NPW	None - Field Filtered	Orthophosphate		007A
20190813_FLIV_NGUP-QC	Site Duplicate	8/13/2019	9:15 AM	NPW	None - Field Filtered	Orthophosphate		008A

**LSL Sample Comments:** Samples Received  
On Ice  
Containers this COC

**Custody Transfers**  
 Received by: MS  
 Relinquished by: MS  
 Relinquished by: MS

Record for lab by: MS  
 Samples Received Intact: Y N  
 Date: 8-13-19 Time: 11:26  
 Sample Temp: 11.0

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

**All areas of this Chain of Custody Record must be filled out in pen only**

# Life Science Laboratories, Inc. 1913241

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence  
Ave. Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

CHAIN OF CUSTODY RECORD  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern  
30 E. Main St.  
Cuba, NY 141  
p) 585-968-24  
f) 585-968-09

SUNY\_Geneseo  
7706



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303 Zip: 14454  
 Fax: \_\_\_\_\_

**Authorization or PO #:** \_\_\_\_\_

**Turnaround Time**  
 Normal: \_\_\_\_\_  
 Pre-Authorized: \_\_\_\_\_  
 14 Day\*  1 Day\*  3 Day\*   
 2 Day\*  7 Day\*   
 \*Additional charges may apply

**Date Needed or Special Instructions:** \_\_\_\_\_

Client Project ID/Client Site ID		LSL Project Number:									
Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #			
20190813_FL1V1_WCUP-WS	Wilkins Creek Upstream	8/13/2019	8:43 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_WCDN-WS	Wilkins Creek Downstream	8/13/2019	8:05 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_NGUP-WS	North Gully Upstream	8/13/2019	9:43 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_NGDN-WS	North Gully Downstream	8/13/2019	7:30 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_NMUP-WS	North McMillan Upstream	8/13/2019	10:50 AM 9:00 AM	NPW ML SWW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_NMDN-WS	North McMillan Downstream	8/13/2019	10:21 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_FB	Field Blank	8/13/2019	8:00 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
20190813_FL1V1_NGUP-QC	Site Duplicate	8/13/2019	9:45 AM	NPW	None - Field Filtered	Nitrate + Nitrite		00613			
Samples Received											
On Ice											
<b>Custody Transfers</b>											
LSL Sample Comments: Samples Received											
On Ice											
Containers this COC											
B											
Sampled by: <u>M. B.</u>											
Relinquished by: <u>M. B.</u>											
Relinquished by:											
Received by:											
Received by:											
Rec'd for lab by: <u>DS</u>											
Samples Received Intact: Y N											
Date		8-13-19									
Time		11:46									
Sample Temp.		11.0									

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composite sample

**All areas of this Chain of Custody Record must be filled out in pen only**

# Life Science Laboratories, Inc.

1913241

7706

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence  
Waddington, NY 13694  
p) 315-388-4061  
f) 315-388-4476

LSL South  
30 E. Main  
SUNY\_Geneseo  
Cuba, NY  
p) 585-966  
f) 585-968

CHAIN OF CUSTODY RECORD  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303

Zip: 14454  
 Fax: \_\_\_\_\_

**Turnaround Tim**  
 Normal:  14 Day\*  2 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**  
 \_\_\_\_\_

**Authorization or PO #:**  
 \_\_\_\_\_

**Client Project ID/Client Site ID**  
 LSL Project Number: \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190813_FL1V1_WCUP-WS	Wilkins Creek Upstream	8/13/2019	8:43 AM	NPW	Acid H2SO4	Total Phosphorus	✓	001C
20190813_FL1V1_WCDN-WS	Wilkins Creek Downstream	8/13/2019	8:05 AM	NPW	Acid H2SO4	Total Phosphorus	✓	002C
20190813_FL1V1_NGUP-WS	North Gully Upstream	8/13/2019	9:43 AM	NPW	Acid H2SO4	Total Phosphorus	✓	003C
20190813_FL1V1_NGDN-WS	North Gully Downstream	8/13/2019	9:30 AM	NPW	Acid H2SO4	Total Phosphorus	✓	004C
20190813_FL1V1_NMUP-WS	North McMillan Upstream	8/13/2019	10:50 AM	NPW	Acid H2SO4	Total Phosphorus	✓	005C
20190813_FL1V1_NMDN-WS	North McMillan Downstream	8/13/2019	10:29 AM	NPW	Acid H2SO4	Total Phosphorus	✓	006C
20190813_FL1V1_FB	Field Blank	8/13/2019	8:00 AM	NPW	Acid H2SO4	Total Phosphorus	✓	007C
20190813_FL1V1_NGUP-QC	Site Duplicate	8/13/2019	9:45 AM	NPW	Acid H2SO4	Total Phosphorus	✓	008C
	Samples Received							
	On Ice							

**Custody Transfers**

Received by: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Rec'd for lab by: MS  
 Samples Received Intact: Y N  
 Date: 8-13-19  
 Time: 11:46  
 Sample Temp: 17.0

LSL Sample Comments: Samples Received On Ice  
0 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample

**All areas of this Chain of Custody Record must be filled out in pen only**

# Life Science Laboratories, Inc.

1913241

7706

SUNY\_Geneseo

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

CHAIN OF CUSTODY RECORD  
131 St. Lawrence  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906



**Report Address:**

Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303 Zip: 14454  
 Fax: \_\_\_\_\_

**Turnaround Time**  
 Normal:  14 Day  1 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  2 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**Client Project ID/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190813_FL1V1_WCUP-WS	Wilkins Creek Upstream	8/13/2019	8:43 AM	NPW	None	Total Suspended Solids		001D
20190813_FL1V1_WCDN-WS	Wilkins Creek Downstream	8/13/2019	8:05 AM	NPW	None	Total Suspended Solids		002D
20190813_FL1V1_NGUP-WS	North Gully Upstream	8/13/2019	9:43 AM	NPW	None	Total Suspended Solids		003D
20190813_FL1V1_NGDN-WS	North Gully Downstream	8/13/2019	9:20 AM	NPW	None	Total Suspended Solids		004D
20190813_FL1V1_NMUP-WS	North McMillan Upstream	8/13/2019	10:50 AM	NPW	None	Total Suspended Solids		005D
20190813_FL1V1_NMDN-WS	North McMillan Downstream	8/13/2019	10:24 AM	NPW	None	Total Suspended Solids		006D
20190813_FL1V1_FB	Field Blank	8/13/2019	8:00 AM	NPW	None	Total Suspended Solids		007D
20190813_FL1V1_NGUP-QC	Site Duplicate	8/13/2019	9:45 AM	NPW	None	Total Suspended Solids		008D

**LSL Sample Comments:** Samples Received On Ice  
Containers this COC

**Received by:** MS  
**Relinquished by:** MS  
**Rec'd for lab by:** MS  
**Samples Received Intact:** Y N  
**Date:** 8-13-19  
**Time:** 11:46

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composite sample

**All areas of this Chain of Custody Record must be filled out in pen only**



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

Prepared For  
**SUNY Geneseo**

LSL Project ID: **1915936**

Receive Date/Time: 09/19/19 8:55

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:



Date: 10/14/19

David J. Prichard, Director of Tech. Services

A copy of this report was sent to:

# -- LABORATORY ANALYSIS REPORT --

SUNY Geneseo Geneseo, NY

<b>Sample ID:</b>	20190918_FLIVI_WCUP-WS	<b>LSL Sample ID:</b>	1915936-001
<b>Location:</b>	Wilkins Creek Upstream		
<b>Sampled:</b>	09/18/19 14:40	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
<b>Reactive Phosphate as P</b>	0.029	mg/l		9/20/19 13:39	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control, the matrix spike and matrix spike duplicate samples associated with this analysis were less than the established control limit.</i>					
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
<b>Phosphorus, Total as P</b>	0.040	mg/l	9/30/19	10/4/19	HKB
(1) EPA Method 300.0 A					
<b>Nitrate as N</b>	0.49	mg/l		9/20/19 14:23	EP
<b>Nitrite as N</b>	<0.2	mg/l		9/20/19 14:23	EP
<i>Elevated detection limit due to matrix interference.</i>					
(1) SM 2540 D-2011 Total Suspended Solids					
<b>Total Suspended Solids @ 103-105 C</b>	4.1	mg/l		9/23/19	ARJ

<b>Sample ID:</b>	20190918_FLIVI_WCDN-WS	<b>LSL Sample ID:</b>	1915936-002
<b>Location:</b>	Wilkins Creek Downstream		
<b>Sampled:</b>	09/18/19 14:15	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
<b>Reactive Phosphate as P</b>	0.061	mg/l		9/20/19 13:41	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>					
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
<b>Phosphorus, Total as P</b>	0.044	mg/l	9/30/19	10/4/19	HKB
(1) EPA Method 300.0 A					
<b>Nitrate as N</b>	0.28	mg/l		9/20/19 12:20	EP
<b>Nitrite as N</b>	0.20	mg/l		9/20/19 12:20	EP
(1) SM 2540 D-2011 Total Suspended Solids					
<b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		9/23/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab





**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

<b>Sample ID:</b> 20190918_FLIVI_FB	<b>LSL Sample ID:</b> 1915936-007
<b>Location:</b> Field Blank	
<b>Sampled:</b> 09/18/19 14:10	<b>Sampled By:</b> DB
<b>Sample Matrix:</b> NPW	

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
<i>(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous</i>				
Reactive Phosphate as P	<0.002 mg/l		9/20/19 13:44	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
<i>(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level</i>				
Phosphorus, Total as P	<0.002 mg/l	9/30/19	10/4/19	HKB
<i>(1) EPA Method 300.0 A</i>				
Nitrate as N	<0.1 mg/l		9/20/19 11:58	EP
Nitrite as N	<0.1 mg/l		9/20/19 11:58	EP
<i>(1) SM 2540 D-2011 Total Suspended Solids</i>				
Total Suspended Solids @ 103-105 C	<4 mg/l		9/23/19	ARJ

<b>Sample ID:</b> 20190918_FLIVI_NMUP-QC	<b>LSL Sample ID:</b> 1915936-008
<b>Location:</b> Site Duplicate	
<b>Sampled:</b> 09/18/19 16:20	<b>Sampled By:</b> DB
<b>Sample Matrix:</b> NPW	

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
<i>(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous</i>				
Reactive Phosphate as P	0.0035 mg/l		9/20/19 13:45	HKB
<i>As per NELAC regulation disclosure of the following condition is required; The result of the laboratory control sample was less than the established limit.</i>				
<i>(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level</i>				
Phosphorus, Total as P	0.0024 mg/l	9/30/19	10/4/19	HKB
<i>(1) EPA Method 300.0 A</i>				
Nitrate as N	0.18 mg/l		9/20/19 15:36	EP
Nitrite as N	<0.1 mg/l		9/20/19 15:36	EP
<i>(1) SM 2540 D-2011 Total Suspended Solids</i>				
Total Suspended Solids @ 103-105 C	<4 mg/l		9/23/19	ARJ

# Life Science Laboratories, Inc.

1915936

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

CHAIN OF CUSTODY RECORD  
131 St. Lawrence  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320  
f) 585-728-2711

LSL Southern Tier L  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

SUNY\_Geneseo

**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303 Zip: 14454  
 Fax: \_\_\_\_\_

**Turnaround Time**  
 Normal:  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:** \_\_\_\_\_

**Authorization or PO #:** \_\_\_\_\_

**LSL Project Number:** \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190918_FL1V1_WCUP-WS	Wilkins Creek Upstream	9/18/2019	2:40	NPW	None	Total Suspended Solids		001A
20190918_FL1V1_WCDN-WS	Wilkins Creek Downstream	9/18/2019	2:15	NPW	None	Total Suspended Solids		002A
20190918_FL1V1_NGUP-WS	North Gully Upstream	9/18/2019	3:25	NPW	None	Total Suspended Solids		003A
20190918_FL1V1_NGDN-WS	North Gully Downstream	9/18/2019	3:10	NPW	None	Total Suspended Solids		004A
20190918_FL1V1_NMUP-WS	North McMillan Upstream	9/18/2019	4:26	NPW	None	Total Suspended Solids		005A
20190918_FL1V1_NMDN-WS	North McMillan Downstream	9/18/2019	4:00	NPW	None	Total Suspended Solids		006A
20190918_FL1V1_FB	Field Blank	9/18/2019	4:10	NPW	None	Total Suspended Solids		007A
20190918_FL1V1_NMUP-QC	Site Duplicate	9/18/2019	4:26	NPW	None	Total Suspended Solids		008A

**Custody Transfers**

Sampled by: Don Bosc  
 Relinquished by: [Signature]  
 Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Rec'd for lab by: Jessica Shuster Date: 9-19-19  
 Samples Received Intact: Y N Sample Temp: 8.55  
8.0

LSL Sample Comments: Samples Received  
 On Ice  
 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ gr- grab sample, c= composite sample

**All areas of this Chain of Custody Record must be filled out in pen only**

# Life Science Laboratories, Inc.

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476  
p) 315-388-4061  
f) 585-728-2711

CHAIN OF CUSTODY RECORD  
131 St. Lawrence  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern  
30 E. Main St.  
Cuba, NY 1472  
p) 585-968-264  
f) 585-968-0901

7706



**Report Address:**

Name: Sid Bosch

Company: SUNY-Geneseo

Street: Integrated Science Center 260

City/State: Geneseo/NY

Phone: 585-245-5303

Zip: 14454

Fax: \_\_\_\_\_

**Turnaround Time**

Normal:  14 Day\*  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
Pre-Authorized:  3 Day\*  7 Day\*

\*Additional charges may apply

Date Needed or Special Instructions:

Authorization or PO #:

**Client Project ID/Client Site ID**

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190918_FLIV1_WCUP-WS	Wilkins Creek Upstream	9/18/2019	2:40	NPW	None - Field Filtered	Orthophosphate		001B
20190918_FLIV1_WCDN-WS	Wilkins Creek Downstream	9/18/2019	2:15	NPW	None - Field Filtered	Orthophosphate		002B
20190918_FLIV1_NGUP-WS	North Gully Upstream	9/18/2019	3:25	NPW	None - Field Filtered	Orthophosphate		003B
20190918_FLIV1_NGDN-WS	North Gully Downstream	9/18/2019	3:10	NPW	None - Field Filtered	Orthophosphate		004B
20190918_FLIV1_NMUP-WS	North McMillan Upstream	9/18/2019	4:20	NPW	None - Field Filtered	Orthophosphate		005B
20190918_FLIV1_NMDN-WS	North McMillan Downstream	9/18/2019	4:00	NPW	None - Field Filtered	Orthophosphate		006B
20190918_FLIV1_FB	Field Blank	9/18/2019	2:10	NPW	None - Field Filtered	Orthophosphate		007B
20190918_FLIV1_NMUP-QC	Site Duplicate	9/18/2019	4:20	NPW	None - Field Filtered	Orthophosphate		008B
<b>Custody Transfers</b>								
Sampled by: <u>Don Bears</u>								
Relinquished by: <u>Don Bears</u>								
Relinquished by: _____								
LSL Sample Comments: <u>Samples Received</u>								
<u>5</u> Containers this COC								
On Ice								
Received by: _____								
Date: _____								
Received for lab by: <u>Jean Shuler</u>								
Samples Received Intact: <u>Y N</u>								
Sample Temp: <u>8.0</u>								

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composited sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc. 1915936

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

CHAIN OF CUSTODY RECORD  
131 St. Lawrence  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320  
f) 585-728-2711

LSL Southern T  
30 E. Main St.  
Cuba, NY 1472  
p) 585-968-264  
f) 585-968-0900

7706

SUNY\_Geneseo

**Report Address:**

Name: Sid Bosch  
Company: SUNY-Geneseo  
Street: Integrated Science Center 260  
City/State: Geneseo/NY  
Phone: 585-245-5303 Zip: 14454  
Fax: \_\_\_\_\_

**Turnaround Time**

Normal:  14 Day\*  1 Day\*  2 Day\*  3 Day\*  7 Day\*  
Pre-Authorized:  3 Day\*  7 Day\*

\*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**Client Project ID/Client Site ID**

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190918_FL1V1_WCUP-WS	Wilkins Creek Upstream	9/18/2019	2:40	NPW	Acid H2SO4	Total Phosphorus	<2	001C
20190918_FL1V1_WCDN-WS	Wilkins Creek Downstream	9/18/2019	2:15	NPW	Acid H2SO4	Total Phosphorus	<2	002C 003C
20190918_FL1V1_NGUP-WS	North Gully Upstream	9/18/2019	3:25	NPW	Acid H2SO4	Total Phosphorus	<2	003C
20190918_FL1V1_NGDN-WS	North Gully Downstream	9/18/2019	3:10	NPW	Acid H2SO4	Total Phosphorus	<2	004C
20190918_FL1V1_NMUP-WS	North McMillan Upstream	9/18/2019	4:20	NPW	Acid H2SO4	Total Phosphorus	<2	005C
20190918_FL1V1_NMDN-WS	North McMillan Downstream	9/18/2019	4:00	NPW	Acid H2SO4	Total Phosphorus	<2	006C
20190918_FL1V1_FB	Field Blank	9/18/2019	2:18	NPW	Acid H2SO4	Total Phosphorus	<2	007C
20190918_FL1V1_NMUP-QC	Site Duplicate	9/18/2019	4:20	NPW	Acid H2SO4	Total Phosphorus	<2	008C
<b>Custody Transfers</b>								
LSL Sample Comments: Samples Received								
Sampled by: <u>Dave Beers</u>								
Relinquished by: <u>Don Beers</u>								
Relinquished by:								
Received by:								
Received by:								
Rec'd for lab by: <u>Jesse Shuster</u>								
Samples Received Intact: Y N								
Date: _____ Time: _____								
Sample Temp: <u>8.0</u>								

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

1915936

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
Ave. Waddington, NY 13694  
315-388-4476

131 St. Lawrence  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 315-388-4061  
f) 585-728-3320  
f) 585-728-2711

LSL Sc  
30 E. IV SUNY\_Geneseo  
Cuba, I  
p) 585-  
f) 585-9

7706



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY-Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo/NY  
 Phone: 585-245-5303

Zip: 14454  
 Fax: \_\_\_\_\_

**Client Project ID/Client Site ID**

**Turnaround Time**  
 Normal:  14 Day\*  1 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:**  
 \_\_\_\_\_

**Authorization or PO #:**  
 \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20190918_FL1V_WCUP-WS	Wilkins Creek Upstream	9/18/2019	2:40	NPW	None - Field Filtered	Nitrate + Nitrite		001D
20190918_FL1V_WCDN-WS	Wilkins Creek Downstream	9/18/2019	2:15	NPW	None - Field Filtered	Nitrate + Nitrite		003D
20190918_FL1V_NGUP-WS	North Gully Upstream	9/18/2019	3:25	NPW	None - Field Filtered	Nitrate + Nitrite		003D
20190918_FL1V_NGDN-WS	North Gully Downstream	9/18/2019	3:10	NPW	None - Field Filtered	Nitrate + Nitrite		004D
20190918_FL1V_NMUP-WS	North McMillan Upstream	9/18/2019	4:20	NPW	None - Field Filtered	Nitrate + Nitrite		005D
20190918_FL1V_NMDN-WS	North McMillan Downstream	9/18/2019	4:00	NPW	None - Field Filtered	Nitrate + Nitrite		006D
20190918_FL1V_FB	Field Blank	9/18/2019	2:10	NPW	None - Field Filtered	Nitrate + Nitrite		007D
20190918_FL1V_NMUP-QC	Site Duplicate	9/18/2019	4:20	NPW	None - Field Filtered	Nitrate + Nitrite		008D
Samples Received								
On Ice								

**Custody Transfers**

Received by: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Rec'd for lab by: Jessica Johnson  
 Samples Received-Intact: Y N  
 Date: 9-19-19 Time: 8:35  
 Sample Temp: 8.0

LSL Sample Comments: 4 Containers this COC  
 On Ice

**All areas of this Chain of Custody Record must be filled out in pen only**

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

### Prepared For

## SUNY Geneseo

LSL Project ID: 1916673

Receive Date/Time: 10/02/19 12:45

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

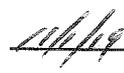
LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

  
**David J. Prichard, Director of Tech. Services**

Date:



A copy of this report was sent to:

# - - LABORATORY ANALYSIS REPORT - -

*SUNY Geneseo Geneseo, NY*

<b>Sample ID:</b>	20191002_FLIVI_WCUP-WS	<b>LSL Sample ID:</b>	1916673-001
<b>Location:</b>	Wilkins Creek Upstream		
<b>Sampled:</b>	10/02/19 9:50	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
<b>Reactive Phosphate as P</b>	0.15	mg/l		10/3/19 16:30	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>					
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
<b>Phosphorus, Total as P</b>	0.11	mg/l	10/10/19	10/11/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>					
(1) EPA Method 300.0 A					
<b>Nitrate as N</b>	0.38	mg/l		10/3/19 14:05	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/3/19 14:05	MT
(1) SM 2540 D-2011 Total Suspended Solids					
<b>Total Suspended Solids @ 103-105 C</b>	8.9	mg/l		10/4/19	ARJ

<b>Sample ID:</b>	20191002_FLIVI_WCDN-WS	<b>LSL Sample ID:</b>	1916673-002
<b>Location:</b>	Wilkins Creek Downstream		
<b>Sampled:</b>	10/02/19 9:25	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous					
<b>Reactive Phosphate as P</b>	0.065	mg/l		10/3/19 16:31	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level					
<b>Phosphorus, Total as P</b>	0.13	mg/l	10/10/19	10/11/19	HKB
<i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>					
(1) EPA Method 300.0 A					
<b>Nitrate as N</b>	0.31	mg/l		10/3/19 14:38	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/3/19 14:38	MT
(1) SM 2540 D-2011 Total Suspended Solids					
<b>Total Suspended Solids @ 103-105 C</b>	16	mg/l		10/7/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# - - LABORATORY ANALYSIS REPORT - -

SUNY Geneseo Geneseo, NY

<b>Sample ID:</b>	20191002_FLIVI_NGUP-WS	<b>LSL Sample ID:</b>	1916673-003
<b>Location:</b>	North Gully Upstream		
<b>Sampled:</b>	10/02/19 11:10	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.047 mg/l		10/3/19 16:32	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P <i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>	0.11 mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A Nitrate as N	<0.1 mg/l		10/3/19 16:15	MT
Nitrite as N	<0.1 mg/l		10/3/19 16:15	MT
(1) SM 2540 D-2011 Total Suspended Solids Total Suspended Solids @ 103-105 C	22 mg/l		10/7/19	ARJ

<b>Sample ID:</b>	20191002_FLIVI_NGDN-WS	<b>LSL Sample ID:</b>	1916673-004
<b>Location:</b>	North Gully Downstream		
<b>Sampled:</b>	10/02/19 10:20	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.047 mg/l		10/3/19 16:33	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P <i>This result should be considered an estimate because the concentration exceeded the linear range of the instrument.</i>	0.10 mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A Nitrate as N	<0.1 mg/l		10/3/19 16:47	MT
Nitrite as N	<0.1 mg/l		10/3/19 16:47	MT
(1) SM 2540 D-2011 Total Suspended Solids Total Suspended Solids @ 103-105 C	15 mg/l		10/7/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

**-- LABORATORY ANALYSIS REPORT --**

*SUNY Geneseo Geneseo, NY*

Sample ID: 20191002\_FLIVI\_NMUP-WS LSL Sample ID: 1916673-005  
Location: North McMillian Upstream  
Sampled: 10/02/19 12:10 Sampled By: DB  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.016 mg/l		10/3/19 16:33	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P	0.021 mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A Nitrate as N	<0.1 mg/l		10/3/19 18:24	MT
Nitrite as N	<0.1 mg/l		10/3/19 18:24	MT
(1) SM 2540 D-2011 Total Suspended Solids Total Suspended Solids @ 103-105 C	<4 mg/l		10/4/19	ARJ

Sample ID: 20191002\_FLIVI\_NMDN-WS LSL Sample ID: 1916673-006  
Location: North McMillian Downstream  
Sampled: 10/02/19 11:50 Sampled By: DB  
Sample Matrix: NPW

Analytical Method	Prep Method	Prep Date	Analysis Date & Time	Analyst Initials
Analyte	Result Units			
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous Reactive Phosphate as P	0.0086 mg/l		10/3/19 16:34	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level Phosphorus, Total as P	0.023 mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A Nitrate as N	<0.1 mg/l		10/3/19 18:57	MT
Nitrite as N	<0.1 mg/l		10/3/19 18:57	MT
(1) SM 2540 D-2011 Total Suspended Solids Total Suspended Solids @ 103-105 C	<4 mg/l		10/7/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# -- LABORATORY ANALYSIS REPORT --

*SUNY Geneseo Geneseo, NY*

<b>Sample ID:</b>	20191002_FLIVI_FB	<b>LSL Sample ID:</b>	1916673-007
<b>Location:</b>	Field Blank		
<b>Sampled:</b>	10/02/19 9:15	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	<0.002	mg/l		10/3/19 16:28	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	<0.002	mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	<0.1	mg/l		10/3/19 19:29	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/3/19 19:29	MT
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		10/7/19	ARJ

<b>Sample ID:</b>	20191002_FLIVI_NGDN-QC	<b>LSL Sample ID:</b>	1916673-008
<b>Location:</b>	Site Duplicate		
<b>Sampled:</b>	10/02/19 10:30	<b>Sampled By:</b>	DB
<b>Sample Matrix:</b>	NPW		

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.096	mg/l		10/3/19 16:34	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.094	mg/l	10/10/19	10/11/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	<0.1	mg/l		10/3/19 20:34	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/3/19 20:34	MT
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	16	mg/l		10/7/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# Life Science Laboratories, Inc.

1916673

SUNY\_Geneseo

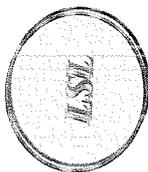
7706

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Southern Tr  
30 E. Main St.  
Cuba, NY 1472  
p) 585-968-264L  
f) 585-968-0906



### Report Address:

Name: **Sid Bosch**  
 Company: **SUNY Geneseo**  
 Street: **Integrated Science Center 260**  
 City/State: **Geneseo NY**  
 Phone: **585-245-5303**  
 Zip: **14454**  
 Fax:

### Client Project ID/Client Site ID

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191002_FL1V_WCUP-WS	Wilkins Creek Upstream	10/2/2019	9:50	NPW	None	Nitrate + Nitrite		001A
20191002_FL1V_WCDN-WS	Wilkins Creek Downstream	10/2/2019	9:25	NPW	None	Nitrate + Nitrite		002A
20191002_FL1V_NGUP-WS	North Gully Upstream	10/2/2019	11:00	NPW	None	Nitrate + Nitrite		003A
20191002_FL1V_NGDN-WS	North Gully Down	10/2/2019	10:20	NPW	None	Nitrate + Nitrite		004A
20191002_FL1V_NMUP-WS	North McMillan U	10/2/2019	12:10	NPW	None	Nitrate + Nitrite		005A
20191002_FL1V_NMDN-WS	North McMillan D	10/2/2019	11:50	NPW	None	Nitrate + Nitrite		006A
20191002_FL1V_FB	Field Blank	10/2/2019	9:15	NPW	None	Nitrate + Nitrite		007A
20191002_FL1V_NGDN-QC	Site Duplicate	10/2/2019	10:30	NPW	None	Nitrate + Nitrite		008A
LSL Sample Comments: Samples Received On Ice Containers this COC 8								
Custody Transfers Sampled by: <i>Daniel Dees</i> Relinquished by: <i>Daniel Dees</i> Relinquished by:								
Received by: <i>Daniel Dees</i> Received by: <i>Daniel Dees</i> Recd for lab by: <i>Daniel Dees</i> Samples Received Intact: Y N Date: 10/2/19 Time: 12:45 Sample Temp: 15.0								

All areas of this Chain of Custody Record must be filled out in pen only

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/ g= grab sample, c= composit sample

# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

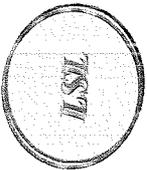
1916673

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL SoL Finger Lakes Lab  
30 E. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL SoL SUNY\_Geneseo  
Cuba, NY  
p) 585-  
f) 585-424



### Report Address:

Name: **Sid Bosch**  
 Company: **SUNY Geneseo**  
 Street: **Integrated Science Center 260**  
 City/State: **Geneseo NY**  
 Phone: **585-245-5303**  
 Zip: **14454**  
 Fax:

### Turnaround Time

Normal:  14 Day\*  
 Pre-Authorized:  3 Day\*  
 2 Day\*  7 Day\*

\*Additional charges may apply

Date Needed or Special Instructions:

Authorization or PO #:

Client Project ID/Client Site ID

LSL Project Number:

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191002_FLVI_WCUP-WS	Wilkins Creek Upstream	10/2/2019	9:50	NPW	None	Orthophosphate		061B
20191002_FLVI_WCDN-WS	Wilkins Creek Downstream	10/2/2019	9:25	NPW	None	Orthophosphate		062B
20191002_FLVI_NGUP-WS	North Gully Upstream	10/2/2019	11:10	NPW	None	Orthophosphate		063B
20191002_FLVI_NGDN-WS	North Gully Down	10/2/2019	10:20	NPW	None	Orthophosphate		064B
20191002_FLVI_NMUP-WS	North McMillan U	10/2/2019	12:10	NPW	None	Orthophosphate		065B
20191002_FLVI_NMDN-WS	North McMillan D	10/2/2019	11:50	NPW	None	Orthophosphate		066B
20191002_FLVI_FB	Field Blank	10/2/2019	9:15	NPW	None	Orthophosphate		067B
20191002_FLVI_NGDN-QC	Site Duplicate	10/2/2019	10:30	NPW	None	Orthophosphate		068B
<b>Custody Transfers</b>								
Sampled by: <i>Laura B...</i>								
Relinquished by: <i>[Signature]</i>								
Relinquished by:								
Received by:								
Received by:								
Rec'd for lab by: <i>Judith S...</i>								
Samples Received Intact: Y N								
Date: 10-2-19								
Time: 12:42								
Sample Temp: 16.0								

LSL Sample Comments: Samples Received  
 On Ice  
 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc. 1916673

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

SUNY\_Geneseo

**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo NY  
 Phone: 585-245-5303

Zip: 14454  
 Fax: \_\_\_\_\_

Client Project ID/Client Site ID: \_\_\_\_\_

LSL Project Number: \_\_\_\_\_

**Turnaround Time**  
 Normal:  14 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  1 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

Date Needed or Special Instructions: \_\_\_\_\_

Authorization or PO #: \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191002_FL1V1_WCUP-WS	Wilkins Creek Upstream	10/2/2019	9:50	NPW	Acid H2SO4	Total Phosphorus	<2	001C
20191002_FL1V1_WCDN-WS	Wilkins Creek Downstream	10/2/2019	9:25	NPW	Acid H2SO5	Total Phosphorus	<2	002C
20191002_FL1V1_NGUP-WS	North Gully Upstream	10/2/2019	11:10	NPW	Acid H2SO6	Total Phosphorus	<2	003C
20191002_FL1V1_NGDN-WS	North Gully Downstream	10/2/2019	10:20	NPW	Acid H2SO7	Total Phosphorus	<2	004C
20191002_FL1V1_NMUP-WS	North McMillan U	10/2/2019	12:10	NPW	Acid H2SO8	Total Phosphorus	<2	005C
20191002_FL1V1_NMDN-WS	North McMillan D	10/2/2019	11:50	NPW	Acid H2SO9	Total Phosphorus	<2	006C
20191002_FL1V1_FB	Field Blank	10/2/2019	9:15	NPW	Acid H2SO10	Total Phosphorus	<2	007C
20191002_FL1V1_NGDN-QC	Site Duplicate	10/2/2019	10:30	NPW	Acid H2SO11	Total Phosphorus	<2	008C
<b>Custody Transfers</b>								
Sampled by: <u>David Bees</u>								
Relinquished by: <u>Amber</u>								
Relinquished by: _____								
Rec'd for lab by: <u>John Stinson</u>								
Samples Received Intact: Y N								
Date: <u>10-27-19</u> Time: <u>12:45</u>								
Sample Temp: <u>16.0</u>								

LSL Sample Comments: Samples Received On Ice  
4 Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

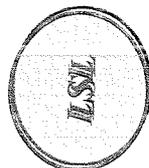
LSL Central Lab  
5854 Butternut Drive  
E. Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
131 St. Lawrence Ave.  
Waddington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

CHAIN OF CUSTODY RECORD  
LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL South  
30 E. Main  
Cuba, NY 13050  
p) 585-968-2  
f) 585-968-01

7706



**Report Address:**  
 Name: Sid Bosch  
 Company: SUNY Geneseo  
 Street: Integrated Science Center 260  
 City/State: Geneseo NY  
 Phone: 585-245-5303  
 Zip: 14454  
 Fax: \_\_\_\_\_

**Turnaround Time**  
 Normal:  14 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  1 Day\*  3 Day\*  7 Day\*  
 \*Additional charges may apply

**Date Needed or Special Instructions:** \_\_\_\_\_  
**Authorization or PO #:** \_\_\_\_\_

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191002_FL1V1_WCUP-WS	Wilkins Creek Upstream	10/2/2019	9:50	NPW	None	Total Suspended Solids		001D
20191002_FL1V1_WCDN-WS	Wilkins Creek Downstream	10/2/2019	9:15	NPW	None	Total Suspended Solids		002D
20191002_FL1V1_NGUP-WS	North Gully Upstream	10/2/2019	11:10	NPW	None	Total Suspended Solids		003D
20191002_FL1V1_NGDN-WS	North Gully Down	10/2/2019	10:20	NPW	None	Total Suspended Solids		004D
20191002_FL1V1_NMUP-WS	North McMillan U	10/2/2019	12:10	NPW	None	Total Suspended Solids		005D
20191002_FL1V1_NMDN-WS	North McMillan D	10/2/2019	11:50	NPW	None	Total Suspended Solids		006D
20191002_FL1V1_FB	Field Blank	10/2/2019	9:15	NPW	None	Total Suspended Solids		007D
20191002_FL1V1_NGUP-OC	Site Duplicate	10/2/2019	10:30	NPW	None	Total Suspended Solids		008D
<b>Custody Transfers</b>								
Sampled by: <u>Daniel B...</u>		Received by: _____		Date: _____		Time: _____		
Relinquished by: <u>Daniel B...</u>		Received by: _____		Date: _____		Time: _____		
Relinquished by: _____		Received by: _____		Date: _____		Time: _____		
Rec'd for lab by: <u>Jessica Spitzer</u>		Date: <u>10-2-19</u>		Time: <u>12:48</u>		Sample Temp: <u>16.0</u>		
Samples Received Intact: <u>Y</u>		N						

LSL Sample Comments: 8 Containers this COC  
 On/ice  
 \*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample  
**All areas of this Chain of Custody Record must be filled out in pen only**



# Life Science Laboratories, Inc.

Dr. Isidro Bosch  
SUNY Geneseo  
1 College Circle  
ISC 260  
Geneseo, NY 14454

Phone: (716) 400-2200

## Laboratory Analysis Report

### Prepared For

# SUNY Geneseo

LSL Project ID: 1917804

Receive Date/Time: 10/21/19 13:00

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody and the Sample Receipt documents submitted with these samples are considered by LSL to be an appendix of this report and may contain data qualifiers and specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

LSL Central Lab  
5854 Butternut Drive  
East Syracuse, NY 13057  
Tel. (315) 445-1900  
Fax (315) 445-1104  
NYS DOH ELAP #10248

LSL North Lab  
131 St. Lawrence Avenue  
Waddington, NY 13694  
Tel. (315) 388-4476  
Fax (315) 388-4061  
NYS DOH ELAP #10900

LSL Finger Lakes Lab  
16 N. Main St., PO Box  
424  
Wayland, NY 14572  
Tel. (585) 213-4090  
Fax (585) 213-4192  
NYS DOH ELAP

LSL Southern Tier Office  
Cuba, NY  
Tel. (585) 209-4032

LSL MidLakes Office  
Canandaigua, NY  
Tel. (585) 728-3320

This report was reviewed by:

Date:

11/11/2019

Dr. Joseph L. Jeraci, Lead Tech. Director

A copy of this report was sent to:







**- - LABORATORY ANALYSIS REPORT - -**

*SUNY Geneseo Geneseo, NY*

**Sample ID:** 20191021\_FLIVI\_FB **LSL Sample ID:** 1917804-007  
**Location:** Field Blank  
**Sampled:** 10/21/19 9:00 **Sampled By:** DB  
**Sample Matrix:** NPW

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	<0.002	mg/l		10/22/19 14:26	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	<0.002	mg/l	10/29/19	10/31/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	<0.1	mg/l		10/22/19 14:24	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/22/19 14:24	MT
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		10/23/19	ARJ

**Sample ID:** 20191021\_FLIVI\_WCDN-QC **LSL Sample ID:** 1917804-008  
**Location:** Site Duplicate  
**Sampled:** 10/21/19 8:45 **Sampled By:** DB  
**Sample Matrix:** NPW

Analytical Method	Result	Prep Method Units	Prep Date	Analysis Date & Time	Analyst Initials
Analyte					
(1) EPA 365.3, (Issued 1978) Soluble Reactive Phosphorous <b>Reactive Phosphate as P</b>	0.039	mg/l		10/22/19 14:32	HKB
(1) EPA 365.3, (Issued 1978) Total Phosphorus, Low Level <b>Phosphorus, Total as P</b>	0.048	mg/l	10/29/19	10/31/19	HKB
(1) EPA Method 300.0 A <b>Nitrate as N</b>	0.14	mg/l		10/22/19 14:58	MT
<b>Nitrite as N</b>	<0.1	mg/l		10/22/19 14:58	MT
(1) SM 2540 D-2011 Total Suspended Solids <b>Total Suspended Solids @ 103-105 C</b>	<4	mg/l		10/23/19	ARJ

Analysis performed at: (1) LSL Central Lab, (2) LSL North Lab, (3) LSL Finger Lakes Lab

# Life Science Laboratories, Inc. 1917804

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
Syracuse, NY 13607  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
St. Lawrence Ave.  
Washington, NY 13694  
p) 315-388-4476  
f) 315-388-4061

131 LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern SUNY\_Geneseo  
30 E. Main St.  
Cuba, NY 1472  
p) 585-968-267  
f) 585-968-09C

7706

**Report Address:**

Name: Sid Bosch  
Company: SUNY Geneseo  
Client: Integrated Science Center 260  
City/State: Geneseo NY  
Phone: 585-245-5303

Zip: 14454

Fax:

**Client Project ID/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191021_FLIM_WCUP-WS	Wilkins Creek Upstream	10/21/2019	7:55	NPW	None	Nitrate + Nitrite		0061A
20191021_FLIM_WCDN-WS	Wilkins Creek Downstream	10/21/2019	8:40	NPW	None	Nitrate + Nitrite		0062A
20191021_FLIM_NGUP-WS	North Gully Upstream	10/21/2019	11:21	NPW	None	Nitrate + Nitrite		0063A
20191021_FLIM_NGDN-WS	North Gully Downstream	10/21/2019	10:45	NPW	None	Nitrate + Nitrite		0064A
20191021_FLIM_NMUP-WS	North McMillan Upstream	10/21/2019	12:22	NPW	None	Nitrate + Nitrite		0065A
20191021_FLIM_NMDN-WS	North McMillan Downstream	10/21/2019	12:10	NPW	None	Nitrate + Nitrite		0066A
20191021_FLIM_FB	Field Blank	10/21/2019	7:00	NPW	None	Nitrate + Nitrite		0067A
20191021_FLIM_WCDN-QC	Site Duplicate	10/21/2019	8:45	NPW	None	Nitrate + Nitrite		0068A
<b>Custody Transfers</b>								
Sampled by: <i>[Signature]</i>								
Relinquished by: <i>[Signature]</i>								
Relinquished by:								
Received by:								
Received by:								
Rec'd for lab by: <i>[Signature]</i>								
Samples Received Intact: Y N								
Date: 10-21-19								
Time: 12:00								

**Turnaround Time**

Normal:  14 Day\*  3 Day\*  7 Day\*  
Pre-Authorized:  1 Day\*  2 Day\*  3 Day\*  7 Day\*

Date Needed or Special Instructions:

Authorization or PO #:

LSL Project Number:

\*Additional charges may apply

LSL Sample Comments: 11/5  
Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste/g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

# Life Science Laboratories, Inc.

LSL Central Lab  
Butternut Drive  
13057  
p) 315-445-1301  
f) 315-445-1301

5854  
E. Syracuse, NY  
315-445-1105  
315-388-4476  
315-388-4061

**CHAIN OF CUSTODY RECORD**  
131 LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL South  
30 E. Main  
Cuba, NY  
p) 585-968  
f) 585-968

**1917804**

SUNY\_Geneseo  
7706

**Report Address:**

Name: Sid Bosch  
Company: SUNY Geneseo  
Street: Integrated Science Center 260  
City/State: Geneseo NY  
Phone: 585-245-5303

Zip: 14454  
Fax:

**Client Project ID/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191021_FL1V_WCUP_WS	Wilkins Creek Upstream	10/21/2019	9:55	NPW	None	Orthophosphate		001B
20191021_FL1V_WCDN_WS	Wilkins Creek Downstream	10/21/2019	8:40	NPW	None	Orthophosphate		002B
20191021_FL1V_NGUP_WS	North Gully Upstream	10/21/2019	11:01	NPW	None	Orthophosphate		003B
20191021_FL1V_NGDN_WS	North Gully Downstream	10/21/2019	10:45	NPW	None	Orthophosphate		001B
20191021_FL1V_NMLUP_WS	North McMillan Upstream	10/21/2019	12:22	NPW	None	Orthophosphate		005B
20191021_FL1V_NMDN_WS	North McMillan Downstream	10/21/2019	12:10	NPW	None	Orthophosphate		006B
20191021_FL1V_FB	Field Blank	10/21/2019	9:00	NPW	None	Orthophosphate		007B
20191021_FL1V_WCDN-QC	Site Duplicate	10/21/2019	8:45	NPW	None	Orthophosphate		008B

**Turnaround Time**  
 Normal  Pre-  
 14 Day  1 Day\*  7 Day\*   
 2 Day\*  7 Day\*

Date Needed or Special Instructions:

Authorization or PO #:

LSL Project Number:

**Custody Transfers**

Sampled by: *[Signature]*  
 Relinquished by: *[Signature]*  
 Relinquished by:

Containers this COC  
 11.5

Received by:  
 Received by:  
 Rec'd for lab by: *[Signature]*  
 Samples Received Intact: Y N  
 Date: 10-21-19  
 Sample Temp: 13.00

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste, g= grab sample, c= composit sample

All areas of this Chain of Custody Record must be filled out in pen only

*mail at CL 6°C on ice*



# Life Science Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

LSL Central Lab  
5854 Butternut Drive  
Syracuse, NY 13057  
p) 315-445-1105  
f) 315-445-1301

LSL North Lab  
St. Lawrence Ave.  
Washington, NY 13094  
p) 315-388-4476  
f) 315-388-4061

131 LSL Finger Lakes Lab  
16 N. Main St.  
Wayland, NY 14572  
p) 585-728-3320  
f) 585-728-2711

LSL Southern Tier | **1917804**  
30 E. Main St.  
Cuba, NY 14727  
p) 585-968-2640  
f) 585-968-0906

7706

**Report Address:**

Name: Sid Bosch  
Company: SUNY Geneseo  
Street: Integrated Science Center 260  
City/State: Geneseo NY  
Phone: 585-245-5303

Zip: 14454  
Fax:

**Client Project #/Client Site ID**

Client Sample Identification	Sample Location	Sample Date	Sample Time	Sample Matrix**	Bottle Preserv.	Analysis	Preserv Check	LSL ID #
20191021_FLIM_WCUP-WS	Wilkins Creek Upstream	10/21/2019	9:55	NPW	Acid H2SO4	Total Phosphorus	✓	001D
20191021_FLIM_WCDN-WS	Wilkins Creek Downstream	10/21/2019	8:40	NPW	Acid H2SO5	Total Phosphorus	✓	002D
20191021_FLIM_NGUP-WS	North Gully Upstream	10/21/2019	11:21	NPW	Acid H2SO6	Total Phosphorus	✓	003D
20191021_FLIM_NGDN-WS	North Gully Downstream	10/21/2019	10:45	NPW	Acid H2SO7	Total Phosphorus	✓	004D
20191021_FLIM_NMUP-WS	North McMillan U	10/21/2019	12:22	NPW	Acid H2SO8	Total Phosphorus	✓	005D
20191021_FLIM_NMDN-WS	North McMillan D	10/21/2019	12:10	NPW	Acid H2SO9	Total Phosphorus	✓	006D
20191021_FLIM_FB	Field Blank	10/21/2019	9:00	NPW	Acid H2SO10	Total Phosphorus	✓	007D
20191021_FLIM_WCDN-QC	Site Duplicate	10/21/2019	8:45	NPW	Acid H2SO11	Total Phosphorus	✓	008D
<b>Custody Transfers</b>								
Sampled by: <i>[Signature]</i>					Received by:			
Relinquished by: <i>[Signature]</i>					Received by:			
Relinquished by: <i>[Signature]</i>					Rec'd for lab by: <i>[Signature]</i>			
Containers this COC: 11.5					Samples Received Intact: Y N			
					Date: 10-21-14			
					Time: 13:00			

**Turnaround Time**

Normal:  14 Day\*  3 Day\*  7 Day\*  
 Pre-Authorized:  2 Day\*  3 Day\*  7 Day\*

\*Additional charges may apply

**Date Needed or Special Instructions:**

**Authorization or PO #:**

**LSL Project Number:**

**LSL Sample Comments:**

11.5  
Containers this COC

\*\* PW= Potable water, NPW= Non-Potable water, SW= Solid Waste, g= grab sample, c= composit sample

**All areas of this Chain of Custody Record must be filled out in pen only**

Central Basin 26-Jun-19 11:17-11:28 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen % Sat	Oxygen mg/L
	0.07	21.76	8.44	309	433	1170	133.4	11.7
	0.51	21.76	8.35	314	433	1782	133.7	11.73
	0.99	21.74	8.3	317	433	255	132.9	11.67
	2.1	21.65	8.23	322	433	343	132.3	11.63
	2.91	21.56	8.23	322	433	201	131.4	11.57
	4.06	21.45	8.21	324	432	118	129.7	11.45
	4.97	21.41	8.2	325	432	58	127.5	11.26
	6.01	18.88	7.81	341	442	10	85.4	7.93
	6.63	18.93	7.79	342	441	10	85.4	7.92
	7.07	18.34	7.71	344	443	15	81.1	7.61
	8.1	17.76	7.63	347	444	8	75.5	7.17
	9.08	16.9	7.55	350	446	3	67.8	6.56
	10.03	14.87	7.41	356	448	3	43.4	4.38
	10.01	14.87	7.4	356	448	3	43.8	4.42
	11.07	12.02	7.27	362	451	0	15.7	1.69
	11.61	11.93	7.21	364	452	0	14.2	1.53
	12.04	11.93	7.18	364	452	0	13.7	1.47

Central Basin 02-Jul-19 18:17:18:28 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen % Sat	Oxygen mg/L
	0.73	23.99	8.41	405	436	205	128.6	10.81
	1.41	23.78	8.3	410	437	149	127.7	10.78
	3.06	23.03	8.19	415	437	53	125.4	10.73
	4.41	22.54	8.14	415	437	23	119.6	10.34
	5.08	21.54	8.01	419	441	15	105.9	9.33
	5.1	21.53	7.99	419	441	15	105.2	9.27
	5.94	21.17	7.87	422	442	8	93.3	8.28
	7.07	17.51	7.45	436	451	4	51.5	4.92
	7.96	16.82	7.36	438	449	2	48.7	4.71
	8.92	16.06	7.3	440	450	1	42.8	4.21
	9.76	14.85	7.22	444	455	0	31.3	3.17
	9.94	14.77	7.17	444	452	0	30.5	3.09
	10.68	13.84	7.13	446	455	0	24.3	2.5
	11.97	12.63	7.04	432	453	0	16.1	1.7
	11.99	12.64	7.04	432	455	0	16	1.7

Central Basin	Depth	Temp		ORP	Conductivity	PAR	Oxygen	Oxygen
---------------	-------	------	--	-----	--------------	-----	--------	--------

08-Jul-19 13:52-14:07 hr	(m)	[°C]	pH	[mV]	[μS/cm]	[μE/s/m <sup>2</sup> ]	(% Sat)	( mg/L)
	0.53	25.59	8.6	372	439	1807	134.2	10.96
	1.07	25.24	8.57	374	439	1087	135.3	11.11
	1.67	25.24	8.57	375	438	779	135.2	11.11
	1.99	25.06	8.53	377	439	711	134.7	11.1
	3.23	24.81	8.49	379	441	346	130.8	10.83
	4.47	23.92	8.35	384	444	144	111.2	9.36
	5.95	22.64	8.16	390	446	63	91.4	7.88
	6.81	19.73	7.93	399	455	39	59	5.39
	8.05	17.39	7.81	404	457	22	42	4.02
	9	15.96	7.72	407	460	14	29.2	2.89
	10.05	13.74	7.64	411	463	8	14.7	1.52
	11.04	12.51	7.57	418	466	2	6.7	0.71
	11.79	12.41	7.53	420	467	1	5.2	0.55
	11.92	12.33	7.5	420	468	0	4.8	0.52

Central Basin 18-Jul-19 10:55-11:03 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen (% Sat)	Oxygen ( mg/L)
	0.51	25.65	8.18	337	429	508	132.5	10.8
	1.28	25.59	8.13	340	429	273	132.9	10.85
	2.1	25.52	8.04	345	431	152	131.2	10.72
	3.11	25.5	8.02	347	430	67	130.3	10.66
	4.05	25.43	7.95	349	431	32	117.5	9.62
	4.04	25.43	7.95	349	431	32	118.2	9.68
	5.01	24.4	7.73	355	444	15	94.5	7.89
	5.93	22.32	7.33	364	457	8	50.2	4.36
	7.05	19.6	7.05	371	465	4	26.2	2.4
	8.09	17.28	6.96	374	469	2	18.5	1.78
	8.91	16.17	6.9	375	470	0	15.4	1.51
	9.9	15.31	6.83	377	470	0	10.6	1.06
	11.24	13.67	6.77	382	469	0	5.1	0.53
	11.9	12.19	6.7	360	474	0	4.5	0.48

Central Basin 20-Aug-19 10-:14-10:20 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen (% Sat)	Oxygen ( mg/L)
	0.63	24.33	8.44	276	442	1492	106.6	8.9
	1.07	24.33	8.41	278	442	781	106.6	8.9
	2.01	24.28	8.4	279	442	656	106.5	8.91
	3.05	24.23	8.4	279	442	398	107	8.96
	4.16	24.17	8.39	280	442	208	106.3	8.91

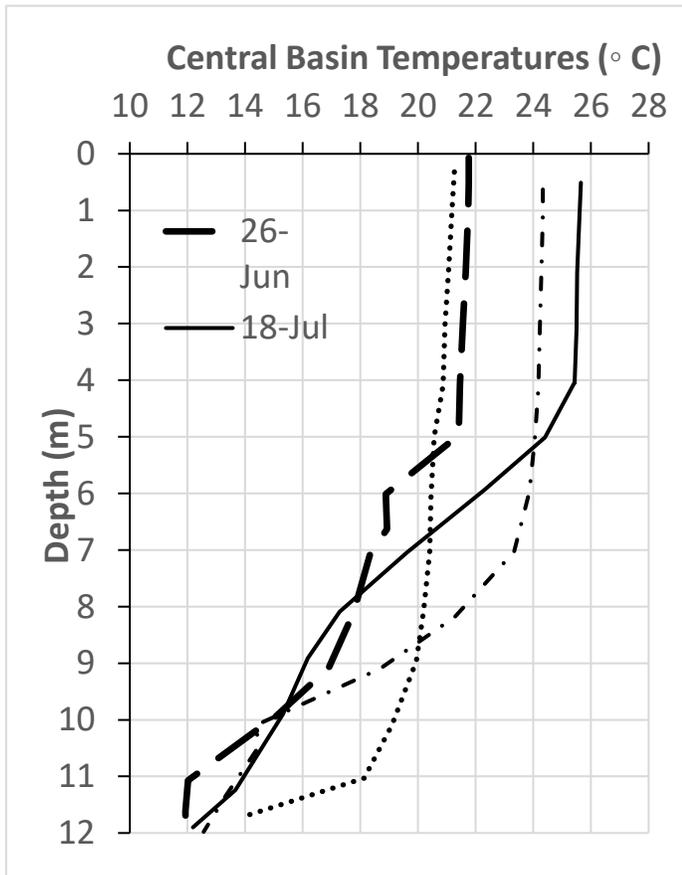
5.04	24.05	8.34	281	443	136	99.5	8.36
5.97	23.86	8.28	284	443	85	92.8	7.82
7.03	23.33	8.16	288	447	51	78.8	6.71
8.18	21.28	7.9	297	462	13	24	2.12
9.1	18.68	7.81	300	474	8	11.3	1.05
10.08	14.44	7.68	288	484	1	6.4	0.65
10.54	14.38	7.62	274	484	0	5.6	0.57
11.33	13.35	7.42	109	486	0	4.7	0.49
11.98	12.56	7.37	81	487	0	4.6	0.49

Central Basin 12-Sep-19 16:07-16:16 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen (% Sat)	Oxygen ( mg/L)
	0.51	21.71	8.42	286	446	411	103.6	9.1
	0.99	21.71	8.41	286	446	261	103.9	9.12
	2	21.71	8.41	287	446	118	103.2	9.06
	2.99	21.7	8.39	289	446	68	103.6	9.1
	4	21.69	8.41	289	446	45	102.9	9.04
	4.95	21.68	8.41	289	446	28	102.1	8.98
	6.08	21.58	8.36	292	447	16	98.2	8.64
	7.03	21.21	8.24	296	451	10	86.8	7.7
	7.99	20.78	8.12	301	455	7	71.2	6.36
	8.99	19.3	7.92	309	465	4	28.2	2.6
	9.92	16.76	7.72	320	481	2	6.2	0.6
	10.94	15.98	7.66	280	486	1	4.8	0.47
	12	14.94	7.6	212	487	0	4.6	0.46

Central Basin 22-Sep-19 16:12-16:22 hr	Depth (m)	Temp [°C]	pH	ORP [mV]	Conductivity [μS/cm]	PAR [μE/s/m <sup>2</sup> ]	Oxygen (% Sat)	Oxygen ( mg/L)
	0.32	21.26	8.4	288	445	1187	112.2	9.94
	0.99	21.18	8.4	289	445	208	112.5	9.98
	2	21.07	8.41	289	446	275	113.5	10.09
	3.02	20.93	8.44	290	445	166	114.1	10.17
	4.09	20.87	8.43	290	445	67	113.8	10.16
	5	20.56	8.37	292	446	31	106.7	9.58
	6.07	20.45	8.33	294	446	18	101.9	9.17
	7.03	20.41	8.31	295	445	10	100.9	9.09
	8.07	20.2	8.22	298	446	5	93.1	8.42
	8.96	19.94	8.08	302	446	3	81.3	7.39
	10.1	19.09	7.74	312	450	0	44.6	4.12
	11.03	18.13	7.58	316	457	1	17	1.61

11.7	14	7.42	87	489	2	4.1	0.42
------	----	------	----	-----	---	-----	------

26-Jun	Depth	18-Jul	Depth	26-Jun	Depth
21.76	0.07	25.65	0.51	21.76	0.07
21.76	0.51	25.59	1.28	21.74	0.99
21.74	0.99	25.52	2.1	21.65	2.1
21.65	2.1	25.5	3.11	21.56	2.91
21.56	2.91	25.43	4.05	21.45	4.06
21.45	4.06	25.43	4.04	21.41	4.97
21.41	4.97	24.4	5.01	18.88	6.01
18.88	6.01	22.32	5.93	18.93	6.63
18.93	6.63	19.6	7.05	18.34	7.07
18.34	7.07	17.28	8.09	17.76	8.1
17.76	8.1	16.17	8.91	16.9	9.08
16.9	9.08	15.31	9.9	14.87	10.03
14.87	10.03	13.67	11.24	14.87	10.01
14.87	10.01	12.19	11.9	12.02	11.07
12.02	11.07			11.93	11.61
11.93	11.61			11.93	12.04
11.93	12.04				



Conesus





20-Aug Depth

22-Sep

24.33	0.32	21.26
24.33	0.99	21.18
24.28	2	21.07
24.23	3.02	20.93
24.17	4.09	20.87
24.05	5	20.56
23.86	6.07	20.45
23.33	7.03	20.41
21.28	8.07	20.2
18.68	8.96	19.94
14.44	10.1	19.09
14.38	11.03	18.13
13.35	11.7	14
12.56		

**Picoplankton Cell Count Spreadsheet for Conesus Lake**

SUNY Geneseo Dr. Isidro Bosch June-August 2019

Date

19-Jun	Long Point
	1 m
	17.75
	17.75
	15
	12.5
Mean	15.75
Stdev	2.52
CV	0.16
	16.03
# cells/mL	31,500
stdev	6,312

24-Jun	Long Point		26-Jun	North Basin			2-Jul		8-Jul		
	1m			North 3m	Center 3m	South 3m	South 1m		North 1m	North 4m	Center 0
	22			21	22	24	14		24	18	22
	18			16	22	21	15		23	17	26
	20			15	14	27	17		22	21	20
	12			16	15	25	14		22	20	17
	12			17	15	21	18		25	25	22
	21			15	12	30	18		24	15	24
							16		22	19	22
							17		18	24	17
									18	18	23
									21	22	20
Mean	3.75		Mean	17	17	25	16		22	20	21
Stdev	0.16		Stdev	2.25	4.27	3.50	1.64		2.38	3.14	2.87
CV			CV	0.14	0.26	0.14	0.10		0.11	0.16	0.13
				13.51	25.64	14.20	10.18		10.86	15.79	13.47
# cells/mL	37500		# cells/mL	33,333	33,333	49,333	32,250		43,800	39,800	42,600
stdev	1593.19343		stdev	5,627	10,685	8,756	3284.16112		4,756	6,286	5,739

Samples at peak phyco fluorescence and in the mesolimnion

			7/18/2019							7/19/2019			7/20/2019	
Center 2m	South 1m	South 4m	South	Center		North			North			North		
			3m	7m	4m	7m	4m	7 m		2m	4m	0.3 m		
20	15	34	66	18	75	2	67	15		148	169	131		
27	17	32	62	10	85	1	80	12		164	179	147		
24	15	28	62	13	75	1	70	11		138	150	177		
20	15	34	64	13	78	3	71	10		148	154	156		
25	12	37	59	15	77	2	80	12.00		171	156.00	134		
27	14	38	58	14	71	2	82	13		140	147	142		
17	9	26	63	13	75	3	100	17		148	179	135		
24	8	37	60	16	83	2	108	15		150	172	140		
32	9	38	60	13	75	4	78	13		150	145	137		
26	13	30	57	14	67	1	85	17		146	174	145		
24	13	33	Mean	61.1	13.9	76.1	2.1	82.10	13.5	Mean	150.3	162.5	Mean	144.4
4.32	3.09	4.30	Stdev	2.81	2.1	5.22	0.99	13.01	2.42	Stdev	10.04	13.44	Stdev	13.58
0.18	0.24	0.13	CV	0.05	0.2	0.07	0.47	0.16	0.18	CV	0.07	0.08	CV	0.09
17.83	24.35	12.87		4.59	15.3	6.85	47.35	15.84	17.89		6.68	8.27		9.41
48,400	25,400	66,800	# cells/mL	152,750	34,750	190,250	5,250	205,250	33,750	# cells/mL	375,750	406,250	# cells/mL	361,000
8,631	6,186	8,600	stdev	7,017	5,329	13,041	2,486	32,520	6,038	stdev	25,112	33,608	stdev	33,957

South Grab	South	South	South
1m	3m	5m	7 m
153	136	17	16
158	125	33	18
189	125	41	37
173	122	15	
160	127	49	34.00
150	120	33	24
161	129	46	26
154	139	41	32
147	133	36	20
156	142	40	26
160.1	129.8	35.10	25.88889
12.4	7.41	11.29	7.29
0.1	0.06	0.32	0.28
7.7	5.71	32.16	28.15
400,250	324,500	87,750	64,722
31,012	18,514	28,222	18,219

	North	North	Center	Center	South	South
7/23/2019	1m	3m	1m	3m	1m	3m
	131	210	187	150	194	235
	151	194	154	158	241	236
	185	165	144	156	235	210
	138	147	142	190	236	225
	142	143	151	163.00	248	215
	127	135	145	150	226	217
	150	153	130	151	231	230
	125	158	136	131	228	207
	130	161	137	146	240	215
	134	150	144	160	236	220
Mean	141.3	161.6	147.00	155.5	232	221
Stdev	17.8	23.32	15.71	15.07	14.67	10.13
CV	0.1	0.14	0.11	0.10	0.06	0.05
	12.6	14.43	10.69	9.69	6.34	4.58
# cells/mL	353,250	404,000	367,500	388,750	578,750	552,500
	44,473	58,288	39,282	37,680	36,671	25,331

7/26/2019	North	North	North	Center
	1m	3m	5m	1m
	108	86	39	76
	116	97	56	79
	102	115	55	81
	105	102	44	80
	95	90	53	72
	104	92	38	70
	108	97	45	76
	110	88	51	76
	112	100	39	82
	104	94	49	73
	106.4	96.1	47	76.5
Stdev	5.8	8.40	6.85	4.01
CV	0.1	0.09	0.15	0.05
	5.5	8.74	14.62	5.24
# cells/mL	266,000	240,250	117,250	191,250
	14,539	20,998	17,137	10,017



Center	South	South	South	South
3m	1m	3m	5m	7m
57	90	85	103	8
65	121	97	91	12
73	121	101	96	9
64	115	92	110	8
59.00	124	132	109	12
88	136	114	96	11
74	118	102	98	7
66	112	116	106	9
79	114	110	95	11
81	135	102	88	7
70.6	118.6	105	99	9
10.08	12.95	13.43	7.50	1.96
0.14	0.11	0.13	0.08	0.21
14.28	10.92	12.78	7.56	20.80
176,500	296,500	262,750	248,000	23,500
25,199	32,365	33,571	18,738	4,888

7/30/2019	North	North	North	North	Center	Center	South	South	South	South	8/1/2019
	1m	3m	5m	7m	1m	3m	1m	3m	5m	7m	
	7	18	13	8	12	15	12	11	11	7	
	9	17	15	7	19	10	12	17	7	7	
	9	19	5	13	15	9	11	9	6	5	
	12	15	12	4	18	9	7	11	8	12	
	8	12	13	10	11	12	10	13	9	6	
	13	15	9	8	15	9	11	7	10	7	
	12	17	14	7	9	14	13	12	15	5	
	9	14	11	11	14	11	12	14	7	8	
	8	18	12	12	13	15	10	15	10	4	
	9	15	10	8	15	12	8	12	11	9	
mean	9.6	16.0	11.4	8.8	14.1	11.6	10.6	12.1	9.4	7.0	
Stdev	2.0	2.2	2.9	2.7	3.0	2.4	1.9	2.9	2.6	2.3	
CV	0.21	0.14	0.25	0.31	0.22	0.21	0.18	0.24	0.28	0.33	
	20.9	13.5	25.2	30.7	21.5	20.8	17.9	23.8	28.0	33.0	
# cells/mL	24,000	40,000	28,500	22,000	35,250	29,000	26,500	30,250	23,500	17,500	
STDEV	5,028	5,401	7,188	6,749	7,587	6,032	4,743	7,212	6,583	5,774	

South 0 surf	South 1m	South 3m	South 5m	South 7 m
17	14	14	12	10
20	10	13	19	12
17	12	17	13	14
20	15	12	12	8
18	13	15	11	12
19	12	13	18	9
20	12	16	13	10
17	16	11	14	15
16	11	15	12	7
20	14	13	13	10
18.6	12.8	13.9	13.9	10.8
1.6	1.9	2.0	2.8	2.7
0.09	0.15	0.14	0.20	0.25
8.6	15.0	14.1	19.9	24.9
46,389	31,944	34,722	34,722	26,944
3,975	4,805	4,912	6,897	6,706

8-Aug	1m	3m	5m	7m
90	90	139	46	
85	87	97	39	
90	123	96	28	
96	128	131	33	
92	104	126	35	
87	104	132	33	
88	105	130	40	
89	97	125	38	
95	99			
90	102			
90.2	105.4	119.6	35.1	
3.6	12.7	16.0	4.2	
0.04	0.12	0.13	0.12	
4.0	12.0	13.4	12.0	
225,556	263,611	298,929	87,857	
8,995	31,700	39,918	10,550	

Dock at Leisure		
13-Aug	Long	Time Marine
	1m	1m
	99	113
	94	111
	112	125
	103	129
	122	117
	110	125
	133	137
	139	151
	127	142
	132	138
	120	137
	138	147
	124.9	135.9
	12.4	10.7
	0.10	0.08
	9.9	7.9
	312,222	339,722
	30,935	26,793

16-Aug	1m	3m	5m	7m
82	85	95	78	
78	84	113	80	
81	95	108	84	
85	88	116	87	
91	84	127	80	
78	79	126	69	
82	80	121	84	
85	82	116	74	
79	87	118		
82	81	124		
82.3	84.4	118.8	79.7	
4.2	5.0	6.3	6.3	
0.05	0.06	0.05	0.08	
5.1	5.9	5.3	7.9	
205,833	211,111	296,944	199,286	
10,458	12,444	15,751	15,726	

20-Aug			
1m	3m	5m	7m
23	31	32	33
27	22	27	31
15	20	34	42
23	19	24	48
28	23	27	44
10	20	22	53
22	20	24	39
24	20	27	37
15	22	25	61
29	24	30	49
21.4	21.1	26.7	44.9
6.7	1.7	3.6	9.0
0.31	0.08	0.14	0.20
31.0	8.0	13.5	20.1
53,611	52,778	66,667	112,222
16,635	4,229	9,014	22,550

**Picoplankton Cell Count Spreadsheet for Conesus Lake**

SUNY Geneseo Dr. Isidro Bosch June-August 2019

Date

19-Jun	Long Point
	1 m
	17.75
	17.75
	15
	12.5
Mean	15.75
Stdev	2.52
CV	0.16
	16.03
# cells/mL	31,500
stdev	6,312

24-Jun	Long Point		26-Jun	North Basin			2-Jul		8-Jul		
	1m			North 3m	Center 3m	South 3m	South 1m		North 1m	North 4m	Center 0
	22			21	22	24	14		24	18	22
	18			16	22	21	15		23	17	26
	20			15	14	27	17		22	21	20
	12			16	15	25	14		22	20	17
	12			17	15	21	18		25	25	22
	21			15	12	30	18		24	15	24
							16		22	19	22
							17		18	24	17
									18	18	23
									21	22	20
Mean	3.75		Mean	17	17	25	16		22	20	21
Stdev	0.16		Stdev	2.25	4.27	3.50	1.64		2.38	3.14	2.87
CV			CV	0.14	0.26	0.14	0.10		0.11	0.16	0.13
				13.51	25.64	14.20	10.18		10.86	15.79	13.47
# cells/mL	37500		# cells/mL	33,333	33,333	49,333	32,250		43,800	39,800	42,600
stdev	1593.19343		stdev	5,627	10,685	8,756	3284.16112		4,756	6,286	5,739

Samples at peak phyco fluorescence and in the mesolimnion

			7/18/2019							7/19/2019			7/20/2019	
Center 2m	South 1m	South 4m	South	Center		North			North			North		
			3m	7m	4m	7m	4m	7 m		2m	4m	0.3 m		
20	15	34	66	18	75	2	67	15		148	169	131		
27	17	32	62	10	85	1	80	12		164	179	147		
24	15	28	62	13	75	1	70	11		138	150	177		
20	15	34	64	13	78	3	71	10		148	154	156		
25	12	37	59	15	77	2	80	12.00		171	156.00	134		
27	14	38	58	14	71	2	82	13		140	147	142		
17	9	26	63	13	75	3	100	17		148	179	135		
24	8	37	60	16	83	2	108	15		150	172	140		
32	9	38	60	13	75	4	78	13		150	145	137		
26	13	30	57	14	67	1	85	17		146	174	145		
24	13	33	Mean	61.1	13.9	76.1	2.1	82.10	13.5	Mean	150.3	162.5	Mean	144.4
4.32	3.09	4.30	Stdev	2.81	2.1	5.22	0.99	13.01	2.42	Stdev	10.04	13.44	Stdev	13.58
0.18	0.24	0.13	CV	0.05	0.2	0.07	0.47	0.16	0.18	CV	0.07	0.08	CV	0.09
17.83	24.35	12.87		4.59	15.3	6.85	47.35	15.84	17.89		6.68	8.27		9.41
48,400	25,400	66,800	# cells/mL	152,750	34,750	190,250	5,250	205,250	33,750	# cells/mL	375,750	406,250	# cells/mL	361,000
8,631	6,186	8,600	stdev	7,017	5,329	13,041	2,486	32,520	6,038	stdev	25,112	33,608	stdev	33,957

South Grab	South	South	South
1m	3m	5m	7 m
153	136	17	16
158	125	33	18
189	125	41	37
173	122	15	
160	127	49	34.00
150	120	33	24
161	129	46	26
154	139	41	32
147	133	36	20
156	142	40	26
160.1	129.8	35.10	25.88889
12.4	7.41	11.29	7.29
0.1	0.06	0.32	0.28
7.7	5.71	32.16	28.15
400,250	324,500	87,750	64,722
31,012	18,514	28,222	18,219

	North	North	Center	Center	South	South
7/23/2019	1m	3m	1m	3m	1m	3m
	131	210	187	150	194	235
	151	194	154	158	241	236
	185	165	144	156	235	210
	138	147	142	190	236	225
	142	143	151	163.00	248	215
	127	135	145	150	226	217
	150	153	130	151	231	230
	125	158	136	131	228	207
	130	161	137	146	240	215
	134	150	144	160	236	220
Mean	141.3	161.6	147.00	155.5	232	221
Stdev	17.8	23.32	15.71	15.07	14.67	10.13
CV	0.1	0.14	0.11	0.10	0.06	0.05
	12.6	14.43	10.69	9.69	6.34	4.58
# cells/mL	353,250	404,000	367,500	388,750	578,750	552,500
	44,473	58,288	39,282	37,680	36,671	25,331

7/26/2019	North	North	North	Center
	1m	3m	5m	1m
	108	86	39	76
	116	97	56	79
	102	115	55	81
	105	102	44	80
	95	90	53	72
	104	92	38	70
	108	97	45	76
	110	88	51	76
	112	100	39	82
	104	94	49	73
	106.4	96.1	47	76.5
Stdev	5.8	8.40	6.85	4.01
CV	0.1	0.09	0.15	0.05
	5.5	8.74	14.62	5.24
# cells/mL	266,000	240,250	117,250	191,250
	14,539	20,998	17,137	10,017



Center	South	South	South	South
3m	1m	3m	5m	7m
57	90	85	103	8
65	121	97	91	12
73	121	101	96	9
64	115	92	110	8
59.00	124	132	109	12
88	136	114	96	11
74	118	102	98	7
66	112	116	106	9
79	114	110	95	11
81	135	102	88	7
70.6	118.6	105	99	9
10.08	12.95	13.43	7.50	1.96
0.14	0.11	0.13	0.08	0.21
14.28	10.92	12.78	7.56	20.80
176,500	296,500	262,750	248,000	23,500
25,199	32,365	33,571	18,738	4,888

7/30/2019	North	North	North	North	Center	Center	South	South	South	South	8/1/2019
	1m	3m	5m	7m	1m	3m	1m	3m	5m	7m	
	7	18	13	8	12	15	12	11	11	7	
	9	17	15	7	19	10	12	17	7	7	
	9	19	5	13	15	9	11	9	6	5	
	12	15	12	4	18	9	7	11	8	12	
	8	12	13	10	11	12	10	13	9	6	
	13	15	9	8	15	9	11	7	10	7	
	12	17	14	7	9	14	13	12	15	5	
	9	14	11	11	14	11	12	14	7	8	
	8	18	12	12	13	15	10	15	10	4	
	9	15	10	8	15	12	8	12	11	9	
mean	9.6	16.0	11.4	8.8	14.1	11.6	10.6	12.1	9.4	7.0	
Stdev	2.0	2.2	2.9	2.7	3.0	2.4	1.9	2.9	2.6	2.3	
CV	0.21	0.14	0.25	0.31	0.22	0.21	0.18	0.24	0.28	0.33	
	20.9	13.5	25.2	30.7	21.5	20.8	17.9	23.8	28.0	33.0	
# cells/mL	24,000	40,000	28,500	22,000	35,250	29,000	26,500	30,250	23,500	17,500	
STDEV	5,028	5,401	7,188	6,749	7,587	6,032	4,743	7,212	6,583	5,774	

South 0 surf	South 1m	South 3m	South 5m	South 7 m
17	14	14	12	10
20	10	13	19	12
17	12	17	13	14
20	15	12	12	8
18	13	15	11	12
19	12	13	18	9
20	12	16	13	10
17	16	11	14	15
16	11	15	12	7
20	14	13	13	10
18.6	12.8	13.9	13.9	10.8
1.6	1.9	2.0	2.8	2.7
0.09	0.15	0.14	0.20	0.25
8.6	15.0	14.1	19.9	24.9
46,389	31,944	34,722	34,722	26,944
3,975	4,805	4,912	6,897	6,706

8-Aug	1m	3m	5m	7m
90	90	139	46	
85	87	97	39	
90	123	96	28	
96	128	131	33	
92	104	126	35	
87	104	132	33	
88	105	130	40	
89	97	125	38	
95	99			
90	102			
90.2	105.4	119.6	35.1	
3.6	12.7	16.0	4.2	
0.04	0.12	0.13	0.12	
4.0	12.0	13.4	12.0	
225,556	263,611	298,929	87,857	
8,995	31,700	39,918	10,550	

Dock at Leisure		
13-Aug	Long	Time Marine
	1m	1m
	99	113
	94	111
	112	125
	103	129
	122	117
	110	125
	133	137
	139	151
	127	142
	132	138
	120	137
	138	147
	124.9	135.9
	12.4	10.7
	0.10	0.08
	9.9	7.9
	312,222	339,722
	30,935	26,793

16-Aug	1m	3m	5m	7m
82	85	95	78	
78	84	113	80	
81	95	108	84	
85	88	116	87	
91	84	127	80	
78	79	126	69	
82	80	121	84	
85	82	116	74	
79	87	118		
82	81	124		
82.3	84.4	118.8	79.7	
4.2	5.0	6.3	6.3	
0.05	0.06	0.05	0.08	
5.1	5.9	5.3	7.9	
205,833	211,111	296,944	199,286	
10,458	12,444	15,751	15,726	

20-Aug			
1m	3m	5m	7m
23	31	32	33
27	22	27	31
15	20	34	42
23	19	24	48
28	23	27	44
10	20	22	53
22	20	24	39
24	20	27	37
15	22	25	61
29	24	30	49
21.4	21.1	26.7	44.9
6.7	1.7	3.6	9.0
0.31	0.08	0.14	0.20
31.0	8.0	13.5	20.1
53,611	52,778	66,667	112,222
16,635	4,229	9,014	22,550

Dan Beers and Michael Chislock  
 2019 Conesus Tribs Erosion Study  
 Lab Measurements

Site Code	Site:	Date:	EVENT? Y or N:	TSS (mg/L)	Soluble Reactive Phosphorus (mg/L)	Total Phosphorus (mg/L)
20190723_FLIVI_NGUP	NGUP	7/23/2019	N	ND (<4 mg/L)	0.021	0.042
20190813_FLIVI_NGUP	NGUP	8/13/2019	N	4.2	0.13	0.027
20190918_FLIVI_NGUP	NGUP	9/18/2019	N	ND (<4 mg/L)	0.03	0.022
20191002_FLIVI_NGUP	NGUP	10/2/2019	Y	22	0.047	0.110
20191021_FLIVI_NGUP	NGUP	10/21/2019	N	ND (<4 mg/L)	0.019	0.027
20190723_FLIVI_NGDN	NGDN	7/23/2019	N	5.4	0.025	0.036
20190813_FLIVI_NGDN	NGDN	8/13/2019	N	ND (<4 mg/L)	0.098	0.021
20190918_FLIVI_NGDN	NGDN	9/18/2019	N	ND (<4 mg/L)	0.068	0.030
20191002_FLIVI_NGDN	NGDN	10/2/2019	Y	15	0.047	0.100
20191021_FLIVI_NGDN	NGDN	10/21/2019	N	ND (<4 mg/L)	0.020	0.021
20190723_FLIVI_NMUP	NMUP	7/23/2019	N	ND (<4 mg/L)	0.33	0.017
20190813_FLIVI_NMUP	NMUP	8/13/2019	N	ND (<4 mg/L)	0.019	0.0048
20190918_FLIVI_NMUP	NMUP	9/18/2019	N	ND (<4 mg/L)	0.0064	0.0087
20191002_FLIVI_NMUP	NMUP	10/2/2019	Y	ND (<4 mg/L)	0.016	0.021
20191021_FLIVI_NMUP	NMUP	10/21/2019	N	ND (<4 mg/L)	0.0046	0.0049
20190723_FLIVI_NMDN	NMDN	7/23/2019	N	ND (<4 mg/L)	0.003	0.0054
20190813_FLIVI_NMDN	NMDN	8/13/2019	N	ND (<4 mg/L)	0.018	0.0058
20190918_FLIVI_NMDN	NMDN	9/18/2019	N	ND (<4 mg/L)	0.0065	0.0042
20191002_FLIVI_NMDN	NMDN	10/2/2019	Y	ND (<4 mg/L)	0.0086	0.023
20191021_FLIVI_NMDN	NMDN	10/21/2019	N	ND (<4 mg/L)	0.026	0.0047
20190723_FLIVI_WCUP	WCUP	7/23/2019	N	ND (<4 mg/L)	0.045	0.058
20190813_FLIVI_WCUP	WCUP	8/13/2019	N	ND (<4 mg/L)	0.036	0.044
20190918_FLIVI_WCUP	WCUP	9/18/2019	N	4.1	0.029	0.040
20191002_FLIVI_WCUP	WCUP	10/2/2019	Y	8.9	0.15	0.11
20191021_FLIVI_WCUP	WCUP	10/21/2019	N	ND (<4 mg/L)	0.023	0.033
20190723_FLIVI_WCDN	WCDN	7/23/2019	N	ND (<4 mg/L)	0.047	0.060
20190813_FLIVI_WCDN	WCDN	8/13/2019	N	ND (<4 mg/L)	0.079	0.079
20190918_FLIVI_WCDN	WCDN	9/18/2019	N	ND (<4 mg/L)	0.061	0.044
20191002_FLIVI_WCDN	WCDN	10/2/2019	Y	16	0.065	0.130

20191021_FLIVI_WCDN	WCDN	10/21/2019	N	4.1	0.037	0.050
20190723_FLIVI_NMDN-QC	Site Duplicate - NMDN	7/23/2019	N	ND (<4 mg/L)	0.090	0.0051
20190813_FLIVI_NGUP-QC	Site Duplicate - NGUP	8/13/2019	N	4.0	0.020	0.031
20190918_FLIVI_NMUP-QC	Site Duplicate - NMUP	9/18/2019	N	ND (<4 mg/L)	0.0035	0.0024
20191002_FLIVI_NGDN-QC	Site Duplicate - NGDN	10/2/2019	Y	16	0.096	0.094
20191021_FLIVI_WCDN-QC	Site Duplicate - WCDN	10/21/2019	N	ND (<4 mg/L)	0.039	0.048
20190723_FLIVI_FB	Field Blank	7/23/2019	N	ND (<4 mg/L)	ND (<0.002 mg/L)	ND (<0.002 mg/L)
20190813_FLIVI_FB	Field Blank	8/13/2019	N	ND (<4 mg/L)	ND (<0.002 mg/L)	0.58
20190918_FLIVI_FB	Field Blank	9/18/2019	N	ND (<4 mg/L)	ND (<0.002 mg/L)	ND (<0.002 mg/L)
20191002_FLIVI_FB	Field Blank	10/2/2019	Y	ND (<4 mg/L)	ND (<0.002 mg/L)	ND (<0.002 mg/L)
20191021_FLIVI_FB	Field Blank	10/21/2019	N	ND (<4 mg/L)	ND (<0.002 mg/L)	ND (<0.002 mg/L)

**SEE NOTES/DATA QUALIFIER/QC FLAG COLUMN**

**SEE NOTES/DATA QUALIFIER/QC FLAG COLUMN**

Nitrate as N (mg/L)	Nitrite as N (mg/L)	Notes/Data Qualifier/QC Flag?
0.33	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.36	ND (<0.1 mg/L)	SRP >> TP - Analytical issue: not sure why?
0.21	ND (<0.1 mg/L)	SRP > TP - Analytical issue: not sure why; note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	Note from lab for TP that results are estimate, as concentrations exceeded linear range of instrument
0.46	ND (<0.1 mg/L)	
0.27	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.38	ND (<0.1 mg/L)	SRP >> TP - Analytical issue: not sure why?
0.23	ND (<0.1 mg/L)	SRP > TP - Analytical issue: not sure why; note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	Note from lab for TP that results are estimate, as concentrations exceeded linear range of instrument
0.46	ND (<0.1 mg/L)	
0.32	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.22	ND (<0.1 mg/L)	SRP >> TP - Analytical issue: not sure why?
0.28	ND (<0.1 mg/L)	Note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	
0.16	ND (<0.1 mg/L)	
0.31	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.14	ND (<0.1 mg/L)	SRP >> TP - Analytical issue: not sure why?
0.24	ND (<0.1 mg/L)	Note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	
0.13	ND (<0.1 mg/L)	SRP >> TP - Analytical issue: not sure why?
0.57	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.52	ND (<0.2 mg/L)	Elevated NO2 detection limit due to matrix interference
0.49	ND (<0.1 mg/L)	Note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
0.38	ND (<0.1 mg/L)	Note from lab for SRP and TP that results are estimate, as concentrations exceeded linear range of instrument
0.18	ND (<0.1 mg/L)	
0.39	ND (<0.1 mg/L)	LSL does not follow preservative method for NOx in QAPP (no acidification) - do not acidify bottles
0.36	ND (<0.1 mg/L)	
0.28	0.20	SRP > TP - Analytical issue: not sure why; note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
0.31	ND (<0.1 mg/L)	Note from lab for SRP and TP that results are estimate, as concentrations exceeded linear range of instrument

0.13	ND (<0.1 mg/L)	
0.28	ND (<0.1 mg/L)	Site duplicate SRP > TP (IMPOSSIBLE!); RPD (~187%) too high
0.39	ND (<0.2 mg/L)	Site duplicate RPD for SRP too high (~147%)
0.18	ND (<0.1 mg/L)	SRP > TP - Analytical issue: not sure why; note from lab that LCS, spike, and spike duplicate also less than established limit for SRP; RPD (~60%) for SR
ND (<0.1 mg/L)	ND (<0.1 mg/L)	SRP > TP - Analytical issue: not sure why; Site duplicate RPD for SRP too high (~69%)
0.14	ND (<0.1 mg/L)	TSS ND for Site duplicate/just above (4.1 mg/L) for site
ND (<0.1 mg/L)	ND (<0.1 mg/L)	
ND (<0.1 mg/L)	ND (<0.1 mg/L)	Contaminated sample bottle/acid preservative from LSL for TP --> same sample/distilled water source as for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	Note from lab that LCS, spike, and spike duplicate also less than established limit for SRP
ND (<0.1 mg/L)	ND (<0.1 mg/L)	
ND (<0.1 mg/L)	ND (<0.1 mg/L)	



IP too high

Dan Beers and Michael Chislock  
 2019 Conesus Tribs Erosion Study  
 Field Measurements

Site:	Date:	EVENT? Y or N:	Sample time:	Temperature (C):	Sp. Conductivity (uS/cm):	pH:	LDO (mg/L):	LDO (% saturation):	Turbidity (NTUs):	Discharge: (cms)	HBI Family Level	Notes:
NGUP	7/23/2019	N	10:01	18.1		647	8.41	8.94	97.8	3.55	0.02935	3.76 ORP: 107.8 mv
NGUP	8/13/2019	N	9:43	17.9		644	8.28	8.81	96.2	4.54	0.02568	3.13 ORP: 87.8 mv, orange tipped crayfish released
NGUP	9/18/2019	N	3:27	14.8		688	8.12	9.78	98.5	0.99	0.01876	3.56 ORP: 92.6 mv
NGUP	10/2/2019	Y	11:05	17.2		586	8.25	8.88	95.6	22.8 NA	NA	Discharge not calculated due to time constraints and short staffed
NGUP	10/21/2019	N	11:21	8.9		750	8.32	11.73	103.8	0.62	0.03315	3 crayfish caught and released from invert sample
NGDN	7/23/2019	N	9:32	18		643	8.47	9.13	99.6	3.52	0.0563	1.56 ORP: 103.5 mv
NGDN	8/13/2019	N	9:20	18		639	8.31	8.96	98	2.98	0.03746	4 ORP: 60.9 mv
NGDN	9/18/2019	N	3:03	14.1		681	8.16	10.76	103.6	1.05	0.02696	4.83 ORP: 84.9 mv
NGDN	10/2/2019	Y	10:20	17.3		586	8.26	8.96	96.4	20.82	0.042 NA	
NGDN	10/21/2019	N	10:45	8.6		749	8.31	11.92	105	0.61	0.0523	2.63 crayfish caught and released from invert sample
NMUP	7/23/2019	N	11:16	18		701	7.36	2.57	28	0.7	0.016625	3.63 ORP: 140.7 mv
NMUP	8/13/2019	N	10:50	18.7		649	7.75	1.02	11.3	0	0.0215	3.41 ORP: 58.3 mv
NMUP	9/18/2019	N	1:34	18.3		705	7.24	1.6	17.4	0.14	0.00795	4.94 ORP: 109.2 mv
NMUP	10/2/2019	Y	12:10	18.9		714	7.4	2.13	23.7	0.29 NA	NA	No water flow, lowest of season, sampled from pool in restored area, discharge not calculated due to time constraints
NMUP	10/21/2019	N	12:22	15.5		761	7.66	4.06	42	0.1	0.01669	5
NMDN	7/23/2019	N	10:43	14.4		649	7.79	5.66	56.3	2.57	0.11075	4.06 ORP: 143.1 mv
NMDN	8/13/2019	N	10:24	17		666	7.88	5.25	56.3	1.33	0.0477	3.03 ORP: 77.6 mv
NMDN	9/18/2019	N	1:09	16.3		707	7.39	5.52	57.5	0.15	0.0237	1.27 ORP: 87.5 mv
NMDN	10/2/2019	Y	11:45	14.5		697	7.55	3.28	33.2	2.51	0.00664 NA	Clear water, very low flow
NMDN	10/21/2019	N	12:10	14.5		750	7.9	6.29	63.4	0.01		4.88
WCUP	7/23/2019	N	8:48	18.3		1114	8.3	8.63	94.9	1.38	0.06046	5.03 ORP: 126.5 mv
WCUP	8/13/2019	N	8:43	18.7		1594	8.14	8.22	91.6	0.85	0.03522	5.63 ORP: 55.8 mv
WCUP	9/18/2019	N	12:23	15.4		1493	7.93	9.79	100.2	0.48	0.01139	5.04 ORP: 115.1 mv
WCUP	10/2/2019	Y	9:50	18.2		663	8.08	8.52	93.8	10.09 NA	NA	Discharge not calculated due to time constraints and short staffed
WCUP	10/21/2019	N	9:55	8.6		1204	8.21	11.47	101.2	0.48	0.02195	5.41 crayfish caught and released from invert sample
WCDN	7/23/2019	N	8:02	18.4		1073	8.25	8.57	94.3	1.56	0.0491	5.25 1 Blue Crayfish released
WCDN	8/13/2019	N	8:05	19		1470	8.06	7.85	87.9	0.98	0.0485	6.74 ORP: 98.5 mv
WCDN	9/18/2019	N	12:00	15.2		1406	7.91	10.48	106.7	0.57	0.025982	5.59 ORP: 150.0 mv
WCDN	10/2/2019	Y	9:05	18.5		684	7.93	8.29	91.4	18	0.1335 NA	
WCDN	10/21/2019	N	8:45	8		1194	8	11.35	98.7	0.41	0.04265	5.38 crayfish caught and released from invert sample
SITE DUPLS												
NMDN	7/23/2019	N	10:45	14.3		642	7.62	5.61	55.3	2.68 NA	NA	ORP: 133.0 mv
NGUP	8/13/2019	N	9:43	17.8		644	8.28	8.78	98.9	3.38 NA	NA	ORP: 86.9 mv, turbidity measured in lab due to YSI Issues
NMUP	9/18/2019	N	1:40	18.3		706	7.24	1.52	16.5	0.17 NA	NA	ORP: 101.0 mv
NGDN	10/2/2019	Y	10:20	17.3		586	8.25	8.95	96.4	20.75 NA	NA	
WCDN	10/21/2019	N	8:50	8		1192	8.02	11.31	98.2	0.45 NA	NA	
LDO (mg/L)      Turbidity (NTUs)												
NGUP	Baseflow average		9.815	2.425								
NGDN	Baseflow average		10.1925	2.04								
NGUP	Storm event		8.88	22.8								
NGDN	Storm event		8.96	20.82								
NMUP	Baseflow average		2.3125	0.235								
NMDN	Baseflow average		5.68	1.015								
NMUP	Storm event		2.13	0.29								
NMDN	Storm event		3.28	2.51								
WCUP	Baseflow average		9.5275	0.7975								
WCDN	Baseflow average		9.5625	0.88								
WCUP	Storm event		8.52	10.09								
WCDN	Storm event		8.29	18								



620 Broad Street - Suite 100 - St. Joseph - MI 49085 - Phone: 269-983-3654 - Fax: 269-983-3653  
info@phycotech.com - www.phycotech.com

---

*Algae Analysis  
Report and Data Set*

**Customer ID: 373**

---

<b>Tracking Code:</b>	190001-373	<b>Sample ID:</b>	South 1 m	<b>Replicate:</b>	.
<b>Customer ID:</b>	373	<b>Sample Date:</b>	7/26/2019	<b>Sample Level:</b>	Discrete (Grab)
<b>Job ID:</b>	1	<b>Station:</b>	DEC Site	<b>Sample Depth:</b>	0
<b>System Name:</b>	Conesus Lake	<b>Site:</b>	South Basin	<b>Preservative:</b>	Glutaraldehyde
<b>Report Notes:</b>	.				

**Division: Chlorophyta**

Taxa ID	Genus	Species	Subspecies	Variety	Form	Morph	Structure	Count NU/ml	Relative Count	Algal Cell Count Cells/ ml	Relative Algal Cell Count	
2688	*Chlorococcaceae	spp	.	.	.	<=2 um spherical	Vegetative	5,102.628	3.29	5,102.628	3.26	
<i>Summary for Division ~ Chlorophyta (1 detail record)</i>								<b>Sum Total Chlorophyta</b>	5,102.628	3.29	5,102.628	3.26

**Division: Cyanophyta**

Taxa ID	Genus	Species	Subspecies	Variety	Form	Morph	Structure	Count NU/ml	Relative Count	Algal Cell Count Cells/ ml	Relative Algal Cell Count	
4282	*Chroococcaceae	spp	.	.	.	<1 um spherical	Vegetative	49,112.794	31.69	49,112.794	31.36	
10651	Cyanogranis	ferruginea	.	.	.	.	Vegetative	318.914	0.21	1,913.486	1.22	
4323	Synechococcus	sp. 1	.	.	.	< 1um ovoid	Vegetative	100,457.988	64.81	100,457.988	64.15	
<i>Summary for Division ~ Cyanophyta (3 detail records)</i>								<b>Sum Total Cyanophyta</b>	149,889.696	96.71	151,484.267	96.74

= Identification is Uncertain  
 \* = Family Level Identification

Total Sample Concentration

154,992.324

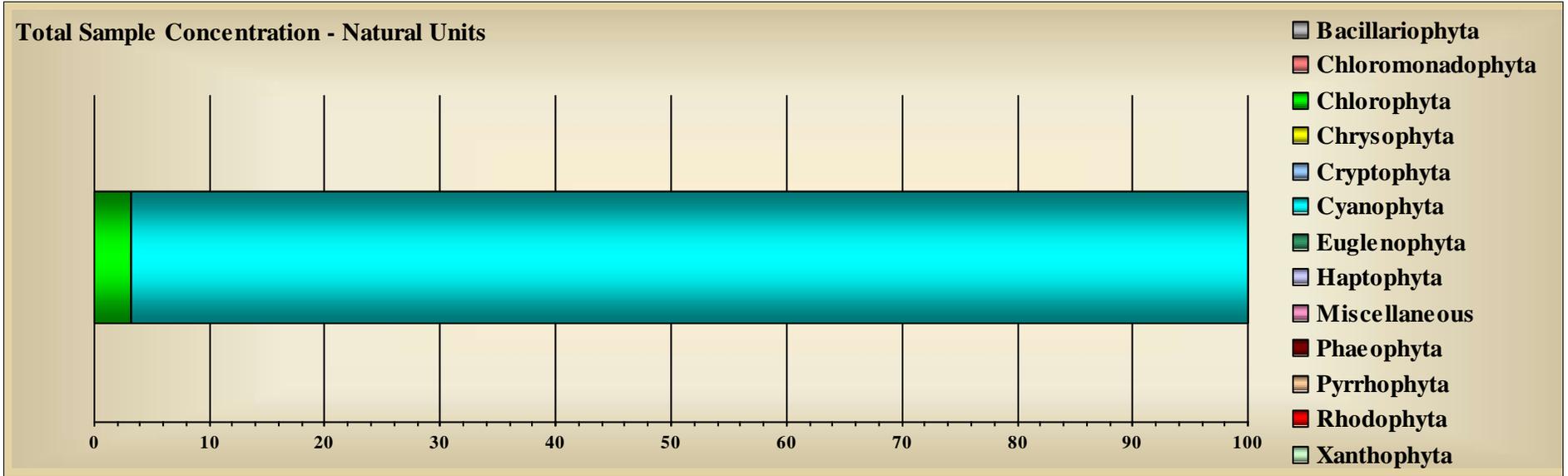
NU/ml

Total Sample Cell Concentration

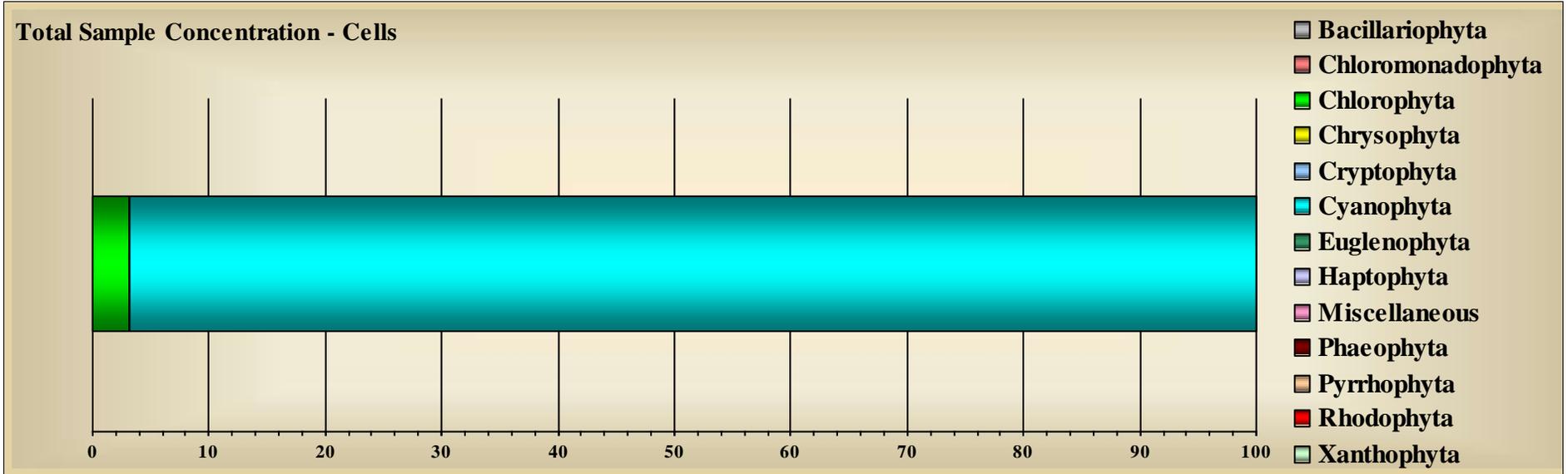
156,586.895

Cells/ml

S  
U  
M  
M  
A  
R  
Y



G  
R  
A  
P  
H  
I  
C  
S



☑ = Identification is Uncertain

\* = Family Level Identification

190001-373

Phytoplankton - Grab

Thursday, January 16, 2020

Page 3 of 4

# Species List

## Division: Chlorophyta

---

Taxa ID	Genus	Species	Subspecies	Variety	Form	PhysiState	Structure	Authority
2688	*Chlorococcaceae	spp	.	.	.		Vegetative	(Brandt) Beijerinck

## Division: Cyanophyta

---

Taxa ID	Genus	Species	Subspecies	Variety	Form	PhysiState	Structure	Authority
4282	*Chroococcaceae	spp	.	.	.		Vegetative	N/A
10651	Cyanogranis	ferruginea	.	.	.		Vegetative	Hindak
4323	Synechococcus	sp. 1	.	.	.		Vegetative	Nageli