KAWARTHA LAKE STEWARDS ASSOCIATION
WATER TESTING for *E. coli*
VOLUNTEER INSTRUCTIONS
May 28, 2022

E. coli TESTING PAYMENT: Payment is due **July 15**

You can now remit *E. coli* testing payments, and donations, to KLSA using e transfer from your financial institution. Please do not complete this form to do an e transfer. Instead, please send us an email at **klsa@klsa.info**. We will send you a reply email with instructions.

To send us a cheque, please complete this form and mail the form with a cheque, payable to Kawartha Lake Stewards Association, to the address below.

Note that KLSA is not able to issue charitable tax receipts for personal donations.

My name _____ Email _____

Exact name of my cottage association: _____

Address _____ Postal code _____

I am paying 2022 test fees of $70 per site for _____ sites.

_____ _____
Lake Site number(s) (optional)

❒ In addition, my association is including a donation to support KLSA in its work of water quality monitoring, research, and public education. *Your association will be honoured as a donor in the next KLSA Annual Water Quality Report.*

❒ I would like to give a personal donation to KLSA to support its work. *You will be honoured as a donor in the next KLSA Annual Water Quality Report.*

Test fees	$_____
Association donation	$_____
Personal donation	$_____
TOTAL	$_____

I wish to receive a mailed copy of the next KLSA Annual Water Quality Report Yes___ No___

Please mail cheque(s) to:

Ed Leerdam
264 Bass Lake Rd.
Trent Lakes, ON
K0M 1A0

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Coordinators

C. Lee (primary contact) lee@klsa.info
Mike Dolbey mike.dolbey@klsa.info

E. coli TESTING SCHEDULE, SUMMER 2022

5 Testing Dates this Year

DATE
Monday, July 4 *
Monday, July 18
Tuesday, Aug 2
Monday, Aug 15
Tuesday, Sep. 6

*** Do not submit any samples before the first date in the table**

All samples must be submitted between July 4 and Sep. 13 for invoicing purposes

Cost: The cost of *E.coli* testing is $70 per site for the season (5 tests per site). Payment is due by July 15, 2022. Please use the form on page 1 (previous).

Continuing for 2022: Bottle pickup and drop-off at SGS Lakefield

Detailed instructions for ordering bottles and dropping off samples to SGS Lakefield are provided in Annex A.

Special note: *KLSA wishes to thank volunteer Dianne Trauzzi for assisting with revising the 2022 instruction package.*

E.coli **Testing – General Instructions**

For details on where and how to test for *E.coli* see our ***"KLSA Lake Water E.coli Sampling Procedure Video"*** on the KLSA website at https://klsa.wordpress.com/2016/05/09/lake-water-e-coli-sampling-video/ or on YouTube at https://www.youtube.com/watch?v=rBQX44RYw3E.

E.coli testing is coordinated by the KLSA but funded by individual lake, cottage and road associations, local organizations or interested individuals. Lake associations are encouraged to oversee the testing on their lake and endeavor to ensure a reasonable distribution of test sites by encouraging individual cottage and road associations to participate by sponsoring a site in their area.

Five *E.coli* water samples are collected at each site throughout the summer beginning immediately AFTER Canada Day and concluding immediately after Labour Day. The intent is to collect the samples after busy weekends when there has been substantial activity on the lakes.

Selection of *E.coli* Test Sites

Following are some considerations when selecting *E.coli* test sites:

- The water should be 1 to 1 ½ metres deep (3 to 5 feet). In shallower areas there is the risk of getting sediment in the sample.
- Generally, you will want to test in areas where there may be a problem such as:
    - Areas of poor circulation, such as quiet bays
    - Inflows from agricultural areas
    - Inflows from wetlands
    - Areas where waterfowl are numerous
    - Marinas
    - Areas where live-aboard boats dock
    - Popular swimming areas (although the Public Health Unit tests most 'public beaches')
    - Areas where you might expect change or development in the near future
    - Inflows in general, as upstream conditions may change unexpectedly
- Avoid changing sites haphazardly. Consistent collection is more valuable when sites are maintained from year to year. A primary goal of this program is to provide important baseline data allowing identification of long-term trends and changes with *E.coli* counts.
- Identify sites in a logical fashion and ensure that site identifiers are used consistently from year to year. Do not reuse an old site identifier for a new site. Assign a new unique identifier to a new site.

Laboratories

All 2022 samples are analyzed at SGS in Lakefield. Detailed instructions for those taking samples to SGS Lakefield are provided in Annex A.

Bottles, Labels and Chain of Custody Forms **same as 2021 (Refer to Annex A for details on how to order bottles and drop off samples**

***E.coli* Log**

Volunteers conducting *E.coli* testing are asked to maintain an *E.coli* log to record weather conditions and other factors that may affect the *E.coli* count. A record of recent rainfall is particularly important because heavy rain tends to flush contaminants into the lakes. The *E.coli* log form is included in Annex A. Please complete the form throughout the summer and submit it at the end of the season.

Protocol for the Collection of *E.coli* Samples

This section provides general guidance for the collection of *E.coli* water samples. This information is all contained in the ***KLSA Lake Water E.coli Sampling Procedure Video*** (links on previous page). Careful adherence to these guidelines is essential to minimize the possibility of contaminating water samples. Remember, healthy human faecal material contains about l00 million *E.coli* per ¼ tsp. Skin or clothing can easily contaminate. Adhere to the following protocol when collecting water samples for *E.coli* testing.

1. If you are collecting more than one sample, mark the bottle with a waterproof marker so that you can affix the correct label after the sample is collected.
2. When collecting the sample, use a clean pair of nitrile/latex gloves. If gloves are not available, wash your hands with soap and water before collecting the sample. Unscrew the lid and collect the sample from a representative location. **Do not** place the cap where it can become contaminated. **Do not** let the open mouth or neck of the bottle touch any clothing, fingers or unsterile objects before or after collection of the sample. **Don't** breathe in the direction of the sample. Turn your head to the side while the sample is being collected.
3. Using a wand or holding the bottle near the base, plunge it neck down to a depth of 15 to 30 cm (6 to 12 inches) below the surface. The water should be 1 to 1½ metres (3 to 5 feet) deep at the test site. The bottle should then be turned so the neck points slightly upwards with the mouth directed toward the current. If no current exists, push the bottle horizontally forward in a direction away from your hands. (You do not want water that has touched your hand to flow into the bottle.) Try not to let water wash off the hull of your boat flow into the bottle.
4. Fill the bottle about 90% full. If you overfill it, don't pour it out; 'flip' it out. As quickly as possible, carefully replace the cap again ensuring that you do not touch the neck of the bottle or the inside of the cap. Ensure that the cap is tight.
5. Keep the samples cool; approximately 5 degrees C (38 degrees F) which is refrigerator temperature. Do not freeze. It is recommended that you have an insulated container and ice packs with you when collecting and transporting the samples. Ice packs are better than ice cubes because they do not create a pool of water (potential source of contamination) around the sampling bottles. If you test the day before you take them into the lab, keep the samples refrigerated overnight. Be sure to deliver samples to the lab within 18 hours of testing.
6. Enter the appropriate data on a KLSA label (sample ID, the volunteer who collected the sample, and the date and time) and affix the label to the bottle. To affix the label, you may have to dry the outside of the bottle. Do so carefully avoiding contact with the neck and cap.
7. Complete the *E.coli* log (page 9).
8. Deliver the samples to the appropriate laboratory in accordance with the detailed instructions outlined in the applicable annex.

When Will You See the Results?

E.coli test results will be emailed from the laboratories to the coordinator within two to three days of the samples being submitted for analysis. The KLSA coordinator of the *E.coli* program will distribute the results. Volunteers are encouraged to further distribute the results to their lake, cottage or road associations and interested parties. The goal is to maximize distribution of the results, create awareness of the program and develop an understanding of the potential water quality concerns.

Be sure to maintain a record of the results for your sites. Although the KLSA publishes an annual Lake Water Quality Report, keeping a record of your results is ultimately your responsibility.

What do the Results Really Mean?

Results of the *E.coli* testing will be presented as the total number of *E.coli* colony forming units per 100 milliliters (*E.coli* CFU per 100 mL). The following examples will assist in the interpretation of the results:

- The safe swimming level (at which public beaches are posted) is 100 *E.coli* CFU per 100 mL. This is related to approximately 7 incidents of waterborne disease per 1000 swimming events. If 10 children went swimming 14 times over a period of time, that would be 140 swimming events, and it would be very likely that one child would experience a waterborne disease (1 per 140 = 7 per 1000) such as gastrointestinal problems or an outer ear infection. Counts of over 100 are considered significant.
- As stated in the KLSA reports, the KLSA is of the opinion that our lakes should normally be cleaner than a public beach, and we have set the trigger for retesting at 50 *E.coli* CFU per 100 mL.
- How serious is a count of 10 or 25? Firstly, bacteria tend to clump, so three samples out of the same bottle might give readings of, for example 10, 25, and 6. Anything under 20 can be considered low and 5 really isn't much different than 20. Secondly, high counts can be very temporary; they may be caused by a child or a wild animal (some children might be classified by their parents/grandparents as 'wild animals' but in this context we are referring to beaver, geese, etc.).
- Counts between 20 and100 that happen only occasionally are likely not of concern.
- Counts which remain over 50 for two or three weeks are unusual for our lakes and warrant further investigation in an attempt to identify the source of the *E.coli.*

What Do You Do if You Have a High Count?

As a general rule, the KLSA policy is that counts over 50 *E.coli* CFU per 100 mL should trigger a retest. In the event of a high count, a KLSA Coordinator will contact the volunteer responsible for the site to determine if a retest is both required and feasible. If a decision is made to retest, ideally the retest should be conducted as soon as possible after the original test and should consist of three to five separate samples collected at the same site.

In the event of high retest counts, the responsible volunteer in consultation with a KLSA Coordinator will discuss possible courses of action.

Neither the volunteer tester nor KLSA has any legal obligation to report high *E.coli* counts to anyone. Locations of sites are known only to the tester. It is up to the tester and his/her community to decide who they would like to inform regarding the high counts, and what if any remedial action they would like to take.

KLSA *E.coli* Log - year: _____

Name of Tester_____ **Name of Lake**_____

Please use this form to record weather conditions and other factors that may affect the E.coli count. A record of recent rainfall is particularly important because heavy rain tends to flush contaminants into the lakes. Please complete the form throughout the summer and submit it at the end of the season. Completed forms (scanned) should be sent to C. Lee at lee@klsa.info. If you are unable to scan – please email C. Lee for alternative arrangements.

Thank you very much for your help this year!

Date	Waves: C=calm R=ripples W=wavy	Rain in past 48 hrs: N=none L=light H=heavy	Presence of animals nearby, including birds or farm animals	Other Observations

Annex A

E. coli Additional Instructions

This annex provides additional instructions for *E coli* volunteers regarding the analytical laboratory.

Location

SGS Canada Inc., Lakefield Laboratory
185 Concession Street
Lakefield, ON K0L 2H0
Contact: Kim Didsbury 705-652-2114
Email: kim.didsbury@sgs.com

The SGS Lakefield Laboratory is in the building that has an orange stripe around it, use the door marked "Environmental sample drop-off".

Ordering Bottles/Labels/Chain of Custody Forms (CofC) ** continuing in 2022 **

1. Please email Kim Didsbury (kim.didsbury@sgs.com) directly for bottles. All orders must be placed at least 3 business days in advance.
2. Be sure to state that the order is for Kawartha Lake Stewards when emailing Kim, otherwise you will not get the correct CofC and will end up being billed directly.
3. Check that Chain of Custody (CofC) forms & bottle labels are included with the bottles. If only one form is given initially you must make four copies of the CofC for your 2022 season.

Collection of Samples

Samples must be collected in accordance with the protocol outlined in the main body of the KLSA Volunteer Instructions (page 4).

Sample Drop-off ** continuing in 2022**

The lab is open at 8 am weekdays, excluding holiday Mondays. Samples must arrive at the laboratory before **2 PM*****
Do not submit samples on the weekend or statutory holidays– you will be charged $50!
1. Place samples on top of freezer in vestibule area; ensure paperwork remains with samples.
2. Knock on glass entrance door to sample reception or ring exterior doorbell to notify reception staff that your sample drop-off is complete.
3. Vacate the vestibule and the staff will immediately retrieve your samples for lab processing.

Chain of Custody Form (CofC)

A sample of a completed CofC form is included at the end of this annex. You must use these 2022 forms as they have been customized for KLSA, simplifying the paperwork at the laboratory and minimizing the cost for KLSA. Be sure to use your exact Association Name on the Chain of Custody form in accordance with the list below.

*All samples delivered to SGS Lakefield must be accompanied by a completed Chain of Custody form.

*For each sampling date, prepare and submit a new 2022 Chain of Custody form.

CofC cont'd

To fill out the Chain of Custody form enter the following:

1. **Association (or Lake name) at the top of the form**

The Chain of Custody form requires each sample bottle to be recorded on a separate line:

2. **Enter your sample identifier which is the location name or code**
3. **Date & time sampled**
4. **Number of bottles**
5. **Analysis required enter *E.coli* or check the box**
6. ****Important: please sign your form as sampler & by delivery person**
7. **Enter date again beside signatures**

All sample bottles must be individually labeled with a KLSA label showing the Sample ID, the volunteer who collected the sample, and the date and time. Please ensure you use the 2022 CofC form that is sent as a separate attachment or provided by the SGS Lab with your first bottle pickup. It has new contact information for KLSA. At the end of this annex, is a blank CofC form, and one that is filled in with sample information, for example purposes.

Association Names for SGS Lakefield Chain of Custody Forms

Balsam Lake
Bass Lake
Big Bald Lake
Big Cedar Lake
Buckhorn Lake: Buckhorn Sands
Cameron Lake
Clear Lake: Birchcliff Property Owners
Clear Lake: Kawartha Park
Katchewanooka Lake – Site 7
Lovesick Lake
Lower Buckhorn Lake
Pigeon Lake: Concession 17 Cottagers' Assoc.
Pigeon Lake: North Pigeon Lake Ratepayers' Assoc.
Pigeon Lake: Victoria Place
Sandy Lake: Sandy Lake Cottagers' Assoc.
Stony Lake: Assoc. Stony Lake Cottagers
Sturgeon Lake
Upper Stoney Lake

SGS

Request for Laboratory Services and CHAIN OF CUSTODY (General)

SGS Environmental Services - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Toll Free: 877-747-7658 Fax: 705-652-6365 Web: www.ca.sgs.com

SGS Environmental Services - London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361 Web: www.ca.sgs.com

Laboratory Information Section

Received Date (mm/dd/yyyy): __ __ / __ __ / __ __ __ __	LAB LIMS #:
Received Time (After Hours Only): __ __ : __ __	Temperature Upon Receipt (°C):

Billing & Reporting Information

Invoice/Receipt to {3}:		
	Company:	Kawartha Lake Stewards Association
	Attention:	
	Address:	c/o - Ed Leerdam - ed.leerdam@klsa.info
	Email:	

Quote #: _____

Attached Parameter List: ☐ YES ☐ NO

Turnaround Time

Is *Rush Turnaround Time Required? ☐ YES ☐ NO

Specify: _____

* Rush TA Requests Require Lab Approval

Project Name/Number:		P.O. #:	

Client Information/Report To: **Client Lab #:** 2019

Company Name:	**Kawartha Lake Stewards Association**
Association Name:	Balsam Lake Assoc
Email :	**lee@klsa.info; mike.dolbey@klsa.info**

Sample Information

Sample Identifier	Date Sampled (mm/dd/yy)	Time Sampled	# of Bottles	Analysis Requested (please enter the analysis required below and check off which analysis applies to each sample)							
				E.Coli (PWQO Limits)							
BL-16	Jul 04	8:15 h	1	✓							
BL-17	Jul 04	8:30 h	1	✓							

Sampled By {1}:	(Name) B. Smith	(Signature) B. Smith	**Date:**	07 / 04 / 02	(mm/dd/yy)
Relinquished by {2}:	(Name) J. Doe	(Signature) J. Doe	**Date:**	07 / 04 / 02	(mm/dd/yy)

Note: {1} Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. {2} Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). {3} Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request.

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