



CEDAR LAKES HOMEOWNERS ASSOCIATION NPC WATER QUALITY PROJECT 2023/2024

A major contributor to the “lifestyle” and natural beauty of Cedar Lakes’ Lifestyle Estate are our 11 Lakes. These are a complex system of interconnected artificial lakes or dams fed by a perennial tributary of the Klein Jukskei River (on which they lie, boreholes producing high quality water from aquifers beneath the estate, and storm water runoff).

The physical, chemical and microbiological quality of the water in the lakes is subject to numerous external influences on its composition and safety, both good and bad, these include rainfall, borehole water top ups, sewage spills, drought, storm and street water runoff, and contamination by wildlife.

In past years, to assess the quality of the water, samples were taken sent to laboratories for quality testing and analysis of physical, microbiological, and chemical parameters, done on an *ad hoc* basis, usually when there was sewage spills or perceived contamination or sudden algal blooms, etc.

To try and understand the complexity and seasonal variations of our water system, the Environmental Committee and their consultants proposed a project to sample and analyse all the Lakes monthly for one year to obtain a baseline and a comprehensive view of the **microbiological, chemical and physical** view of our water quality, and not only be confined to times when the water quality is perceived to be poor.

The parameters were chosen according to South African surface water standards, which follow international protocols.

The testing proposal was extended to four of the Estate’s boreholes operated by the CLHOA and these are and have been tested on a quarterly basis according to the South African drinking water certification standards. (SANS 241:2015).

Phase 1 sampling began in April 2023 and ended in March 2024 and was continued into the 2024 financial year when was decided to resume sampling quarterly instead of monthly. Phase 2 sampling started in April 2024 and ended in November 2024 and a new quarterly sampling phase begins in May 2025.

To date 15 sets of Lake samples and seven sets of borehole sample analysis results and certificates have been received and the results are presented in five parts. Four parts for the Lakes or Dams, classified according to logical analysis groups as follows:

Part 1: Bacteria and Protozoa. Bacteria includes e -Coli, Faecal Coliforms, Total Coliforms and Heterotrophic Plate Count; and Protozoa which includes Giardia and Cryptosporidium species.

Part 2: Algae and algal nutrients with special reference to the **eutrophication** of the Lakes.

Part 3: Chemical Parameters which includes detailed analyses of the chemical species measuring the quality of water.

Part 4: Physical Parameters which includes the physical parameters measuring the physical quality of the water.

Borehole Analysis is the Fifth Part and detailed results are presented in a separate report.

Since April 2023 there were several sewage spills from manholes popping off due to sewer blockages close to and running into Lake Willowmere, and from blockages in the ridge that usually run into Con Dam.

With the replacement of one of the main sewerage pipes in the Estate, there were two major sewerage spills into Lake Willowmere and Leguaan A which obviously affected all the results, and the consequences can be seen.

There was also contamination in run offs, other sewage spills, and other contamination from the roads and drains outside of the Estate that come in at Bass Creek and Windy Lake, but details and exact times and dates are not easily accessible.

THE LAKES. : Map and sampling Points



● Sampling Points





Each part of the reports gives an outline of the tests done and tables and graphics of the results

An enormous amount of data has been generated and the four detailed reports, tabling and presenting all the results for the lakes and the fifth for the boreholes will be sent out by the CLHOA in a separate communication.

These, as well as all of the certificates of analysis and other reports analysis will be available from the CLHOA archives and in the Cedar Lakes' website in future, as well as other reference material, as required.

The reports include tables that show results for each Lake over the whole period of sampling and trends and consequences of sewage spills, and the Lakes' recoveries can be vividly be seen. As the data presented can be overwhelming, we have tried to simplify the data presented with colour coding in the tables distinguishing low and medium (acceptable) and high (undesirable) results.

In viewing the results of the Chemical, Physical and Microbiological parameters chosen for the project, one can see the interaction of the different parameters have on each other and we have tried to indicate this interdependence and consequences in the text in the reports and get the bigger picture.

The results of the all the parameters measured in the project have given us some valuable insights of what has happened in the Lakes over the sampling period.

Results show:-

- the contamination of certain lakes after the big and small mishaps (as expected) while others remained in acceptable limits,
- the ability of the dam network to recover from contamination reasonably quickly.
- a seasonal view of the water quality
- the relationship between the parameters measured
- the absolute quality of our borehole water in three of the Estate's boreholes.

In general the overall water quality in the Lakes has been shown to be acceptable and safe for the recreation and irrigation activities they were designed for.

The Borehole water analysed by the South African Drinking Water standard (Blue Drop) SANS 241:2015 is of good quality and safe, and all the parameters measured are well within the specification bar only one, the nitrate content of one borehole was periodically was very slightly above the limit.

If further information or clarification is required please contact the Environmental Committee or CLHOA at mycedar@cedarlakes.co.za.

ENVIRONMENTAL COMMITTEE
May 2025