Jensen Lakes

Jensen Lake Monitoring

Data Trend Sheets

2025 Annual Compilation

Date Prepared: December 31, 2025

ENVIRO MAK Inc.
Environmental Management Consultants

Jensen Lake Monitoring
Year in Review
2025

In 2025, water quality and limnological monitoring of Jensen Lake was conducted in April, June, July and August. Key water quality and limnological parameters were selected for sampling and for interpretation of acceptability to applicable guidelines and/or best practices and for analysis of trends over time for consideration in the overall management of the lake. This compilation of trend data does not include results of all sampling and analysis conducted but focuses on key parameters relevant to the recreational, aesthetic and ecological targets for Jensen Lake and its users.

Highlighted results for 2025 include the following.

- Jensen Lake continues to provide suitable water quality and environment for human bodily contact lake recreation and aesthetics. Of note is that one key parameter for human recreation in the lake, enterococcus/coliforms, is being sampled and monitored by Jensen Lake staff internally. Therefore, results assume that this parameter has also been suitable for continued human recreation in the lake.
- Jensen Lake continues to provide suitable water quality and environment for stocked fish survival.
- Aquatic vegetation and algae abundance and diversity data was collected in 2025. In 2026 and in concert with lake aquatic vegetation management efforts, a more detailed analysis of the aquatic vegetation trends from 2024 to 2026 should be conducted to provide insight into the efficacy of management efforts applied in 2025. While the trend data reflects a general trend of increasing vegetation in the lake since construction, management efforts in 2025 appeared to have some anecdotal deterring effect on growth/abundance. 2026 monitoring is anticipated to provide more information to support conclusions.

Prepared by:

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Trendsheet Parameter Sampling Summary

Sampling Parameter	Date Sampled in 2025			
	April 1	June 16	July 30	August 27
Alkalinity	◆	◆	◆	◆
Aquatic Vegetation Abundance		◆	◆	◆
Aquatic Vegetation Diversity		◆	◆	◆
Chlorophyll a		◆	◆	◆
Dissolved Oxygen (DO)	◆	◆	◆	◆
Microcystin		◆	◆	◆
pH	◆	◆	◆	◆
Phaeophytin		◆	◆	◆
Phosphorus	◆	◆	◆	◆
Threshold Odour Number (TON)	◆	◆	◆	◆
Total Dissolved Solids (TDS)	◆	◆	◆	◆
Total Kjeldahl Nitrogen (TKN)	◆	◆	◆	◆
Turbidity (NTU)	◆	◆	◆	◆
New trendsheets coming soon …				
Invasive Species Presence/Absence				
Water Temperature Profile				

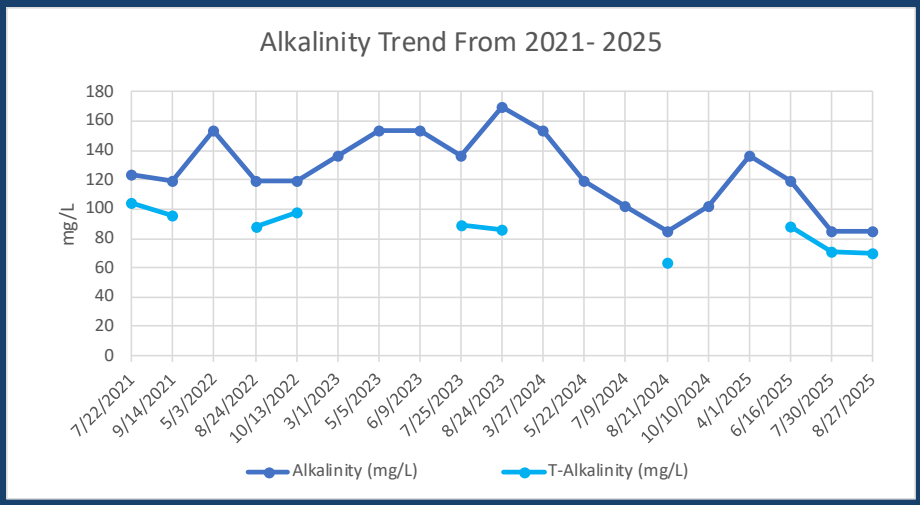
Not all parameters sampled are depicted in trend sheets.

Jensen Lakes

Jensen Lake Data Trend Sheet

Alkalinity:

Alkalinity is the measurement of water's ability to neutralize an acid due to dissolved alkaline substances present within water. Alkalinity of lakes can be influenced by bedrock or the till over which the lake has formed. Reporting as "T-alkalinity (as $CaCO_3$)" specifies that the sample has an alkalinity equal to that of a solution with a certain amount of calcium carbonate ($CaCO_3$) dissolved in water. The long-term MINIMUM guideline for the protection of aquatic life for T-alkalinity (as $CaCO_3$) is 20 mg/L unless natural conditions are less, in which case the guideline cannot be lower than 25% of natural level.



Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water for the Protection of Aquatic Life (EQGASW 2018) with consideration of site-specific conditions.

Date Prepared: October 1, 2025

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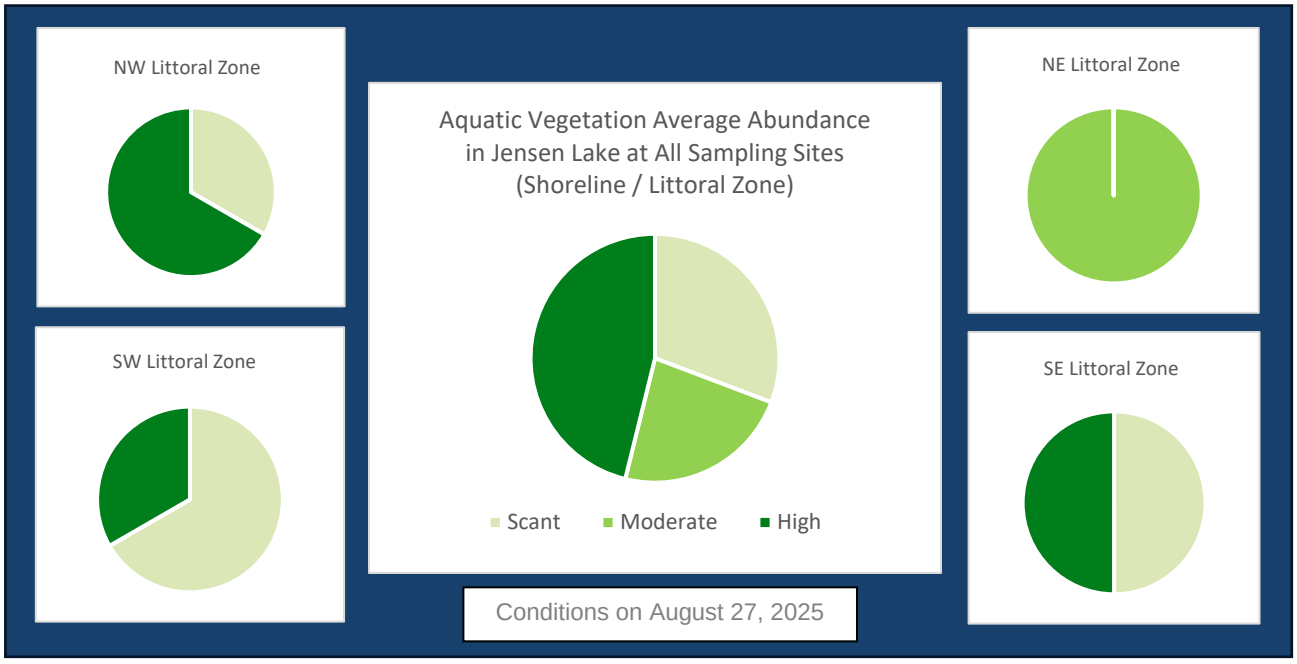
Jensen Lake Data Trend Sheet

Aquatic Vegetation:

Vegetation communities within lakes can vary based on composition, diversity, abundance and distribution. The characteristics of the vegetation community in an aquatic ecosystem have impacts on the biotic and abiotic parts of the ecosystem. Diversity is associated with ecosystem resilience, stability, and maintaining productivity. Vegetation community can also be an indicator of the conditions within a lake. Higher abundance of aquatic vegetation can be undesirable for aesthetic and recreational purposes. There are no guidelines restricting non-invasive aquatic vegetation composition; however, "recreational activities should not be pursued in waters where the responsible authority deems the presence of these organisms poses a risk to the health and safety of the users" (Health Canada 2012). [Analysis does not include blue-green algae (cyanobacteria) which is not classified as aquatic vegetation.]



Current Status:

Diversity and abundance of aquatic vegetation have increased since lake construction. Continue to monitor and assess trends through comparative analysis next year. Next year trend analysis to be expanded for more detailed comparison between 2024, 2025 and 2026.

Date Prepared: December 31, 2025

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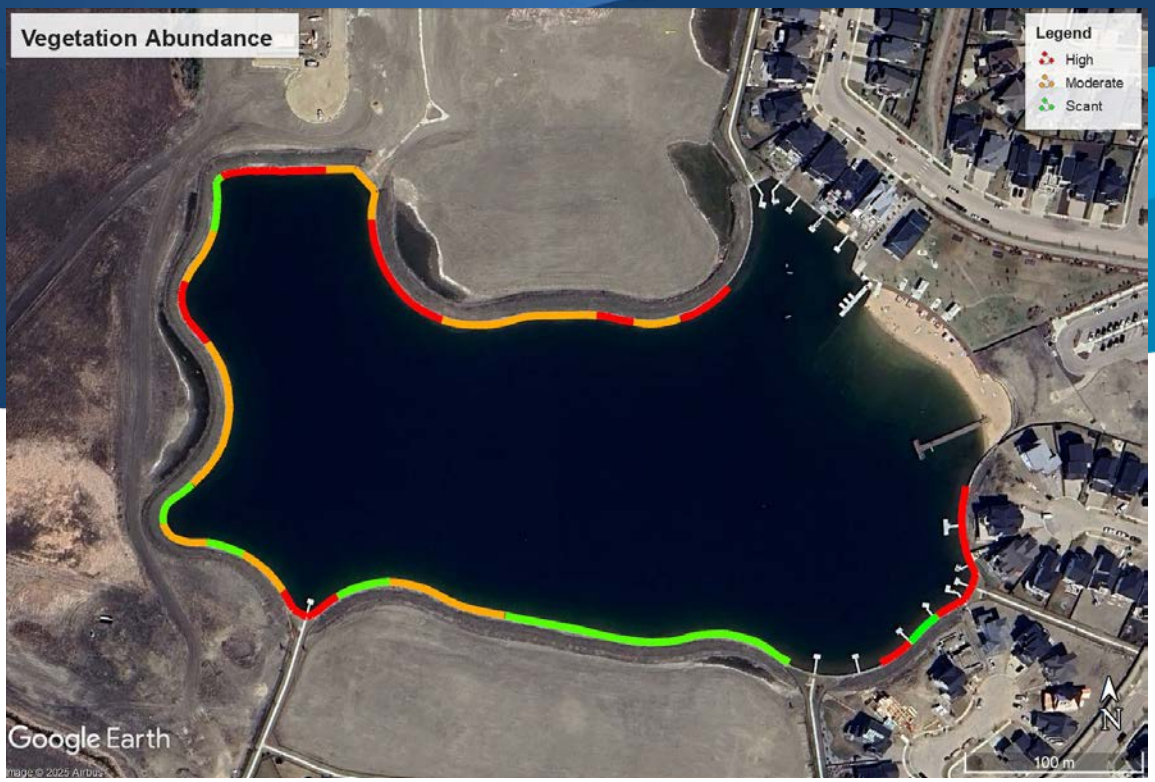

Figure 1: Aquatic vegetation abundance along the shore / littoral zone of Jensen Lake on August 27, 2025. Area adjacent to beach was not inspected due to public presence.

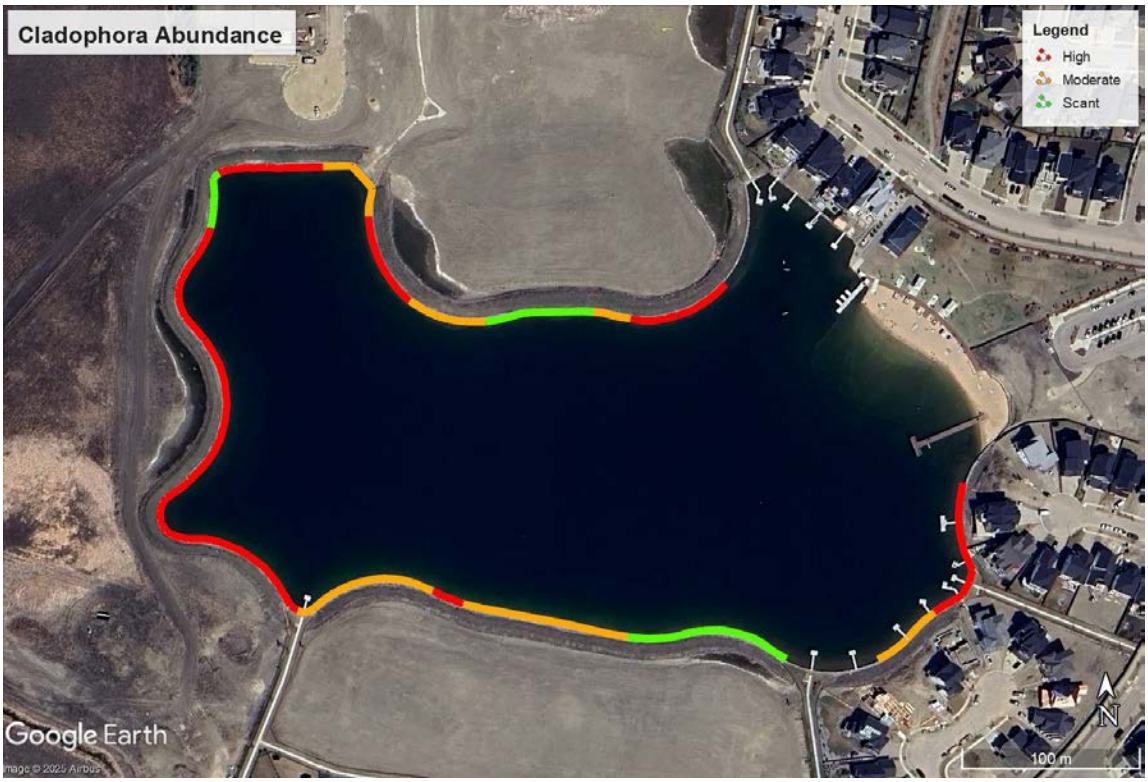

Figure 2: *Cladophora* sp. (filamentous green algae) abundance along the shore / littoral zone of Jensen Lake on August 27, 2025. Area adjacent to beach was not inspected due to public presence.

Table 1: Aquatic vegetation sampling results for Jensen Lake.

Parameter		Sampling Date Result							
		August 24, 2022	June 9, 2023	August 24, 2023	May 22, 2024	August 21, 2024	June 16, 2025	July 30, 2025	August 27, 2025
Plant Species	Chara spp. (*Chara vulagris*)	✓	✓	✓	✓	✓	✓	✓	✓
	Filamentous Green Algae (*Cladophora* sp.)	✓	✓	✓	✓	✓	✓	✓	✓
	Richardson's Pondweed (*Potamogeton richardsonii*)	-	-	-	-	✓	✓	✓	✓
	Sago Pondweed (*Stuckenia pectinata*)	-	-	-	-	✓	-	✓	✓
Diversity (Number of Different Aquatic Vegetation Types/Species Identified)		2	2	2	2	4	3	4	4
Average Abundance of Aquatic Vegetation in Lake		Low	Low	Low	Low	Moderate	Moderate	Moderate	Moderate
Maximum Depth (m) of Visible Aquatic Vegetation Presence		5.0 m	-	3.0 m	1.8 m	5.25 m	5.5 m	6.92 m	7.0 m

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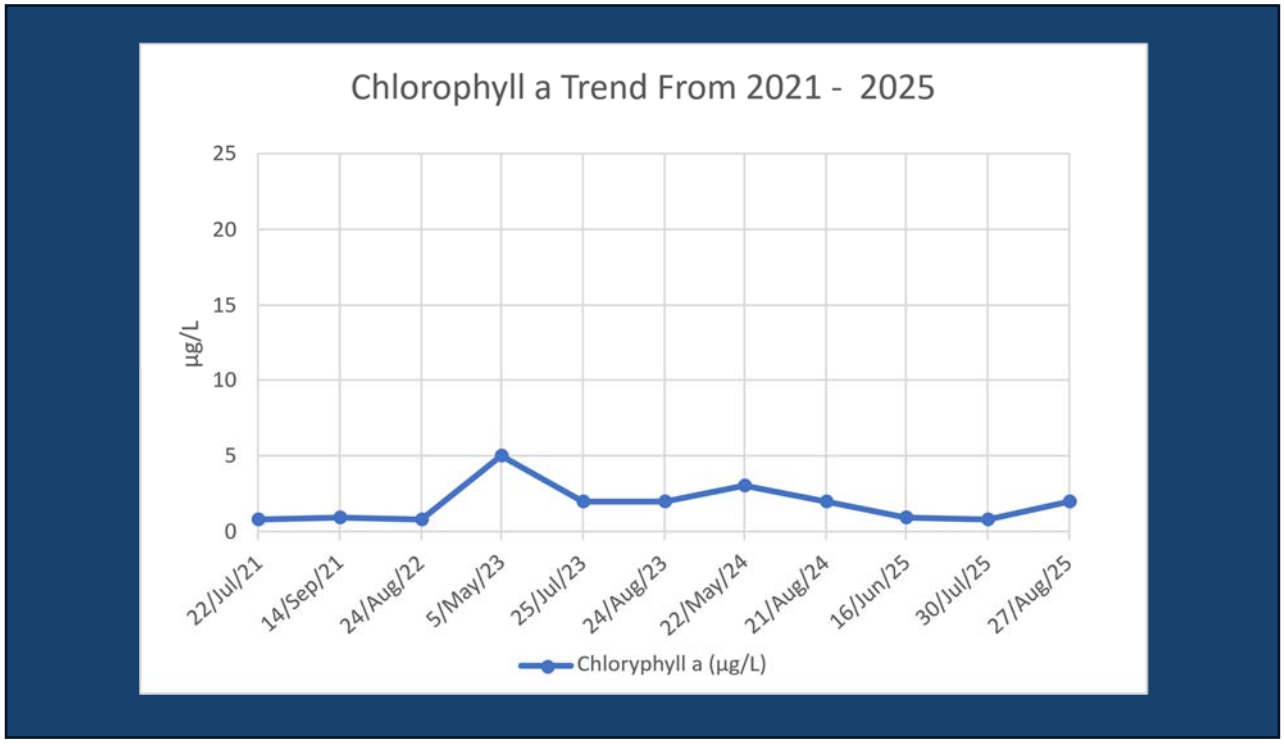
Jensen Lake Data Trend Sheet

Chlorophyll a:

Chlorophyll a is a green pigment in plants and algae that allows them to undergo photosynthesis. Thus, it is used as a measure of the amount of algae growing in and can be used to classify the trophic condition of a lake. While chlorophyll a is expected to fluctuate, particularly in summer; generally, the higher the chlorophyll a, the poorer the water quality. A range of 2.5 - 25 µg/L is considered suitable from a lake trophic status.



Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water Guidelines (EQGASW) (2018) and with consideration of site-specific conditions.

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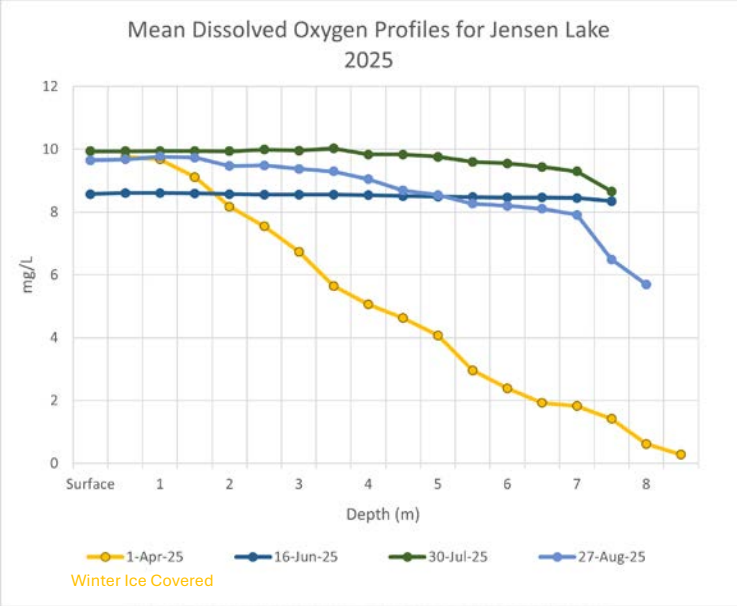
Date Prepared: October 1, 2025

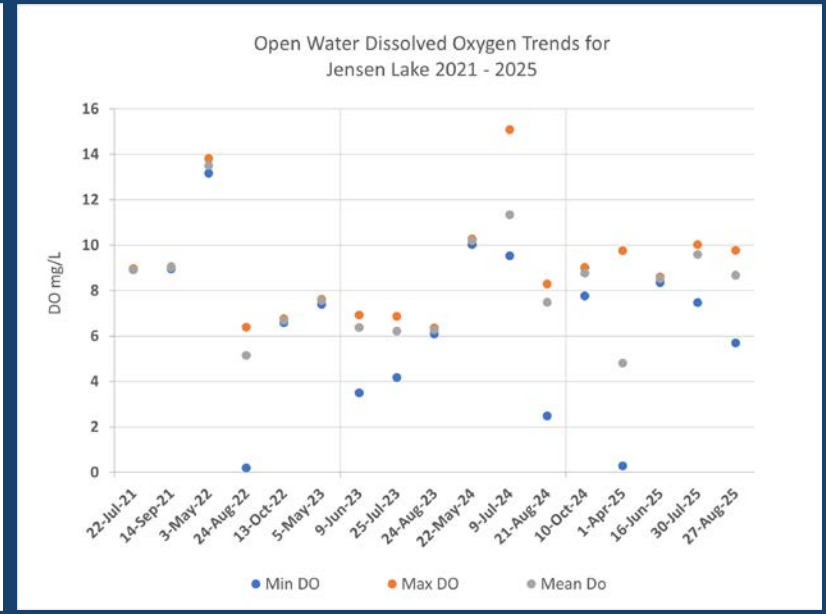
Jensen Lakes

Jensen Lake Data Trend Sheet

Dissolved Oxygen (DO):

Dissolved oxygen is essential to the survival of fish and other aquatic organisms. It is also a vital indicator of water quality. DO should ideally be a minimum of 5 mg/L short-term (acute) and a minimum of 6.5 mg/L long term (chronic). However, considerable deviation from these guidelines may be suitable in certain natural settings for fish survival and aquatic ecosystem health. DO typically decreases with water depth and under ice cover winter conditions.





Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water Guidelines (EQGASW) for the Protection of Freshwater Aquatic Life (2018) and with consideration of site-specific conditions and biologist experience and knowledge. Lower DO measured at depth in late winter. Increased intensity of DO and temperature sampling recommended.

ENVIRO MAK Inc. Environmental Management Consultants

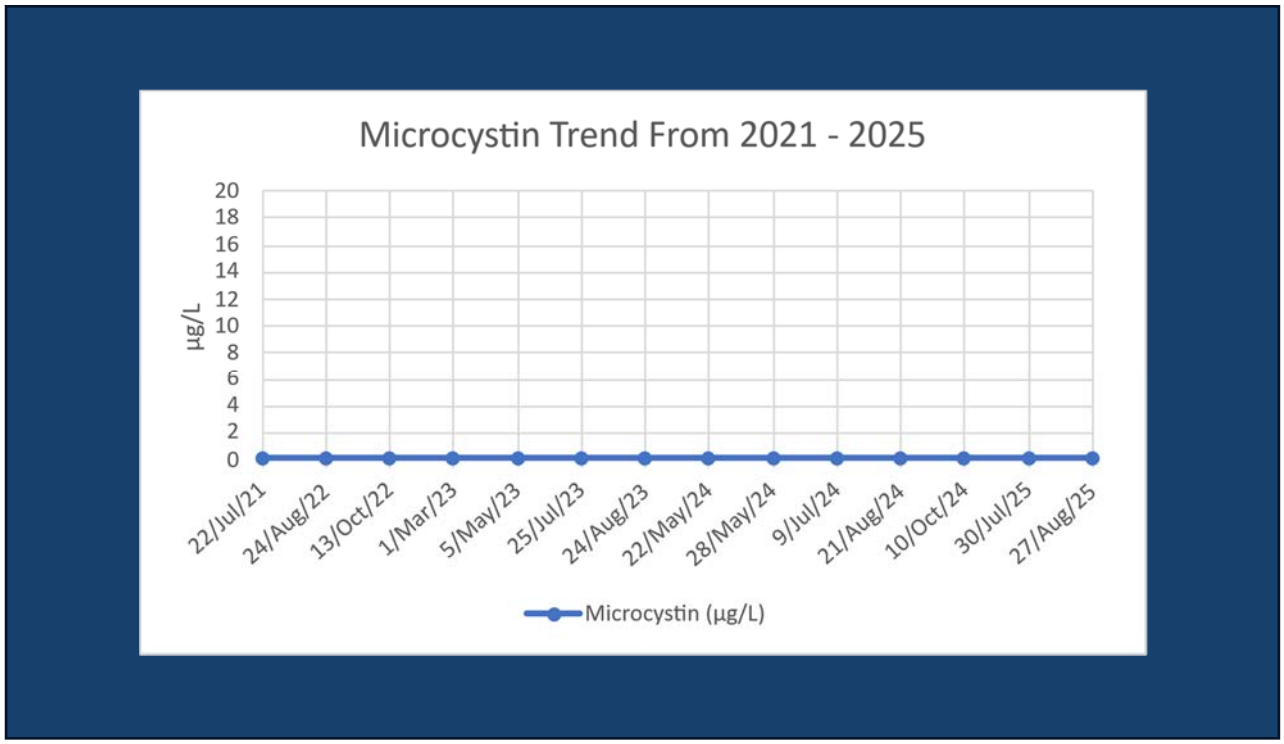
Date Prepared: January 14, 2026

Jensen Lakes

Jensen Lake Data Trend Sheet

Total Microcystins (Blue-Green Algae):

Microcystin is a class of toxin that is produced by certain freshwater cyanobacteria (blue-green algae). The amount of microcystin within a lake will correlate to the presence of cyanobacteria (blue-green algae). Negative effects can occur from ingesting and/or recreational contact with water contaminated with microcystin for humans, wildlife and pets. The limit for microcystin, based on Alberta Safe Beach Protocol (2022) is 10 µg/L or less (expressed as microcystin-LR). Microcystin has been measured consistently at <0.2 µg/L at Jensen Lake since 2021.



Current Status:

Acceptable as per the Environmental Quality Guidelines for on Alberta Safe Beach Protocol (2022)

Date Prepared: September 10, 2025

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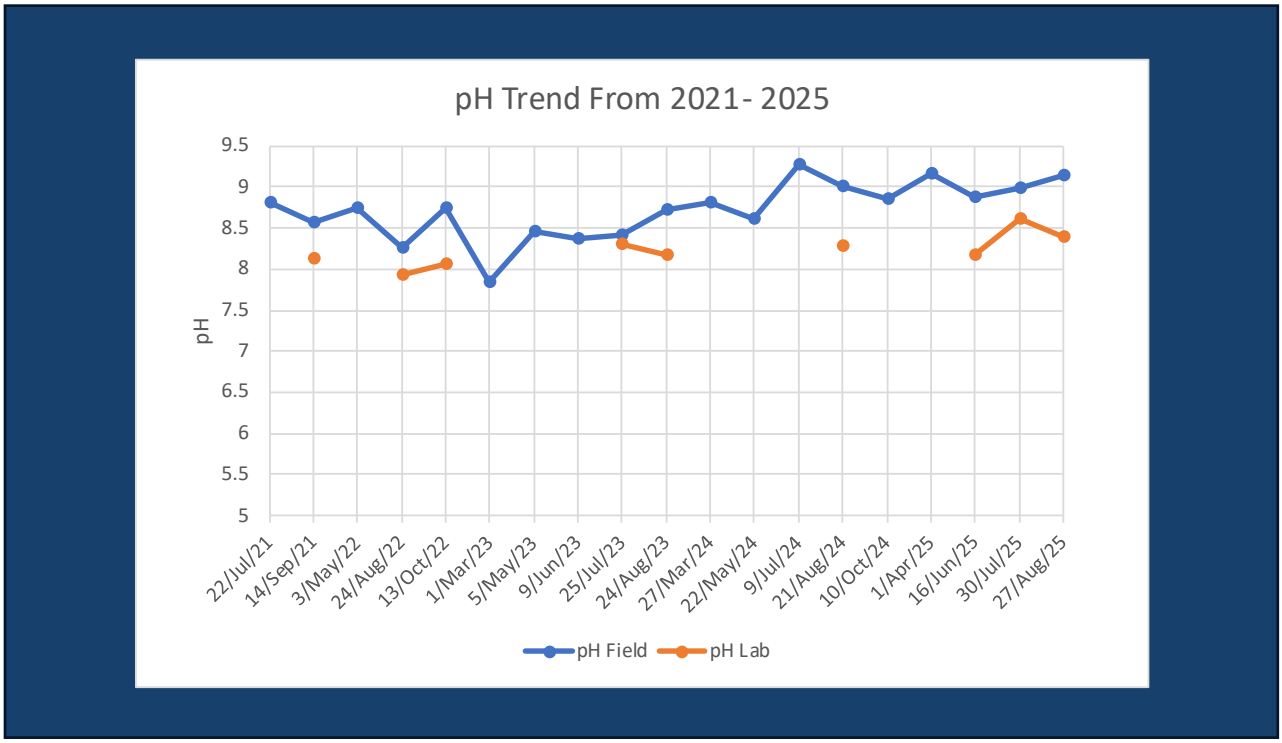
Jensen Lakes

Jensen Lake Data Trend Sheet

pH:

The pH of water is determined by the amount of hydrogen (ions) in a solution in order to give an indication of the acidity. pH is measured on a scale of 1 to 14 with 1 indicating an acidic solution and 14 indicating a basic solution. Most aquatic organisms can only survive within a certain pH range with a neutral pH (7) allowing the greatest variety of organisms to survive. A range of approximately 6.5 to 9.0 is considered suitable for lakes within Alberta. For primary human recreational contact, water should have a pH range of 5.0 to 9.0. pH may be higher during the day and decrease slightly at night due to changes in photosynthesis processes.



Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water Guidelines (EQGASW) (2018) and Environmental Quality Guidelines for Alberta Surface Waters' Surface Water Quality Guidelines (AB WQG) for Recreation and Aesthetics (2018).

Date Prepared: October 1, 2025

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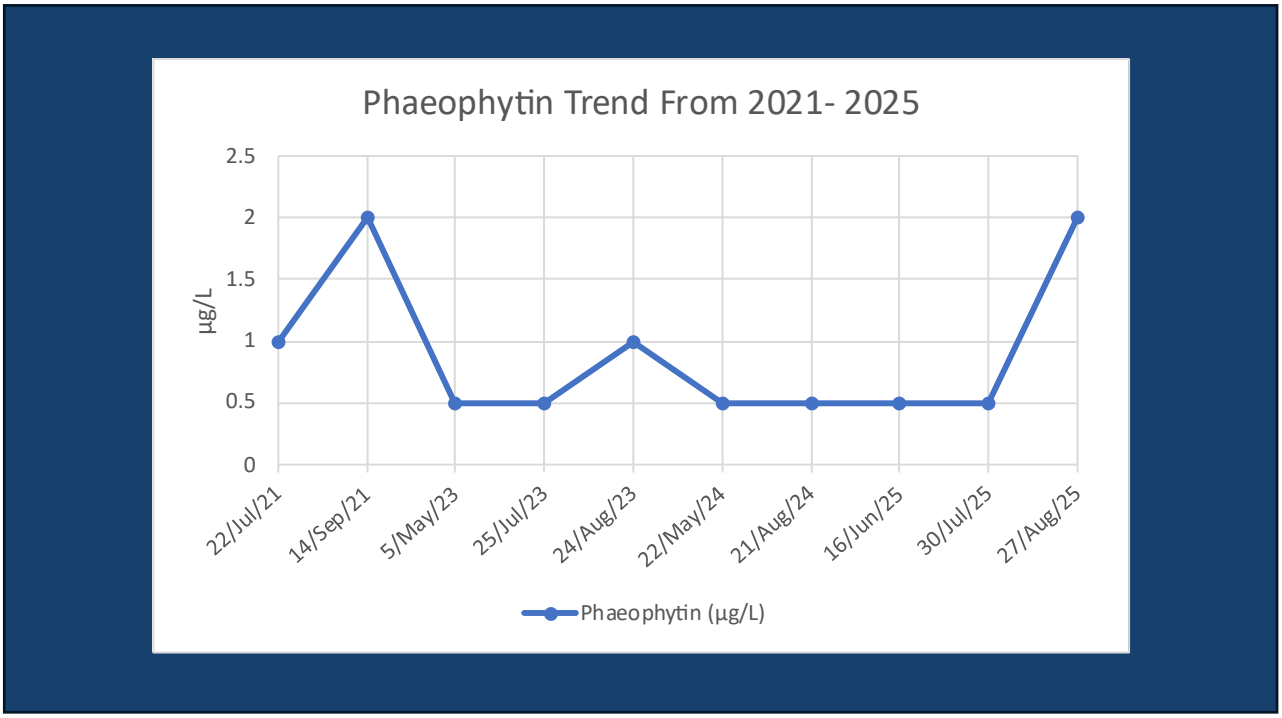
Jensen Lake Data Trend Sheet

Phaeophytin:

Phaeophytin is one of the byproducts of the breakdown of chlorophyll. It remains pigmented but is not involved in the process of photosynthesis. The amount of phaeophytin and its ratio to chlorophyll can indicate physiological condition of phytoplankton within water. <5 µg/L phaeophytin is associated with oligotrophic to mesotrophic (low to moderate productivity) waters which is desirable. Large elevations at higher concentrations may indicate recent or ongoing algal bloom die-off whereas minor fluctuations at lower concentrations may indicate natural seasonal fluctuations or minor algal bloom. There is no specific guideline for phaeophytin within Alberta for lakes.



Current Status:

Acceptable. In August 2025, phaeophytin was slightly elevated in comparison to recent previous sample results and similar to September 2021 sample result (but was still at a low overall concentration).

Date Prepared: September 30, 2025

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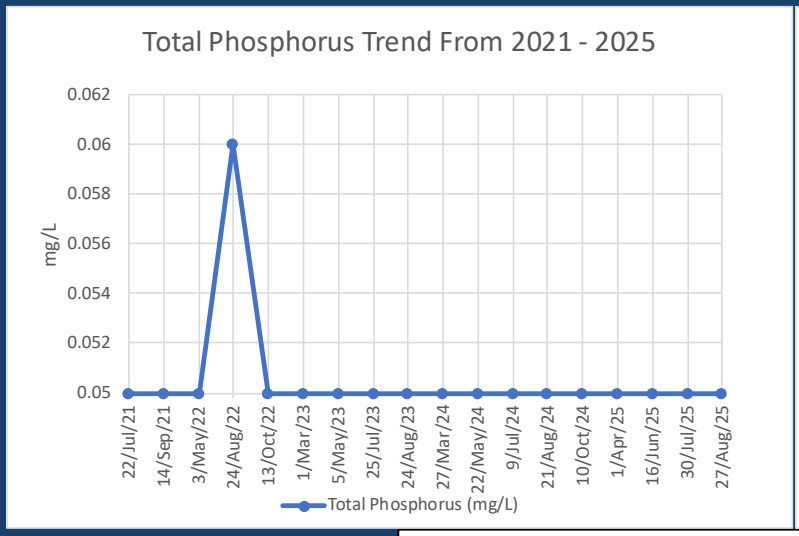
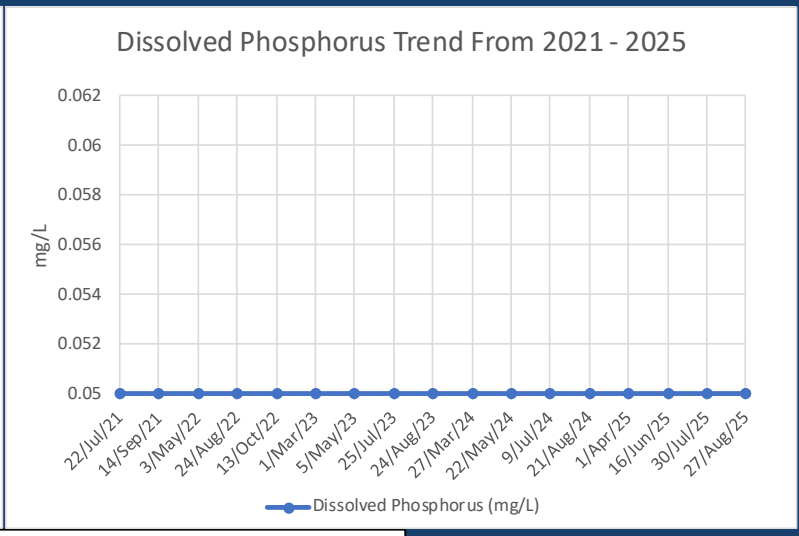
Jensen Lake Data Trend Sheet

Phosphorus (Total and Dissolved):

Excess phosphorus can lead to explosive growth of aquatic plants and algae leading to decreased dissolved oxygen levels and degraded water and recreational quality. For surface waters not covered by specific guidelines, phosphorus concentrations should be maintained so as to prevent detrimental changes to algal and aquatic plant communities, aquatic biodiversity, oxygen levels and recreational quality. In previous guidelines, a maximum short-term guideline of 0.05 mg/L for total phosphorus (TP) was noted. Phosphorus is an indicator of the trophic status of the lake, and generally a range of 0.01 - 0.035 mg/L is considered suitable.





0.05 mg/L is low range limit of laboratory analysis. Therefore 0.05 mg/L is ≤0.05 mg/L.

Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water Guidelines (EQGASW) for the Protection of Freshwater Aquatic Life (2018) and with consideration of site-specific conditions.

Date Prepared: September 30, 2025

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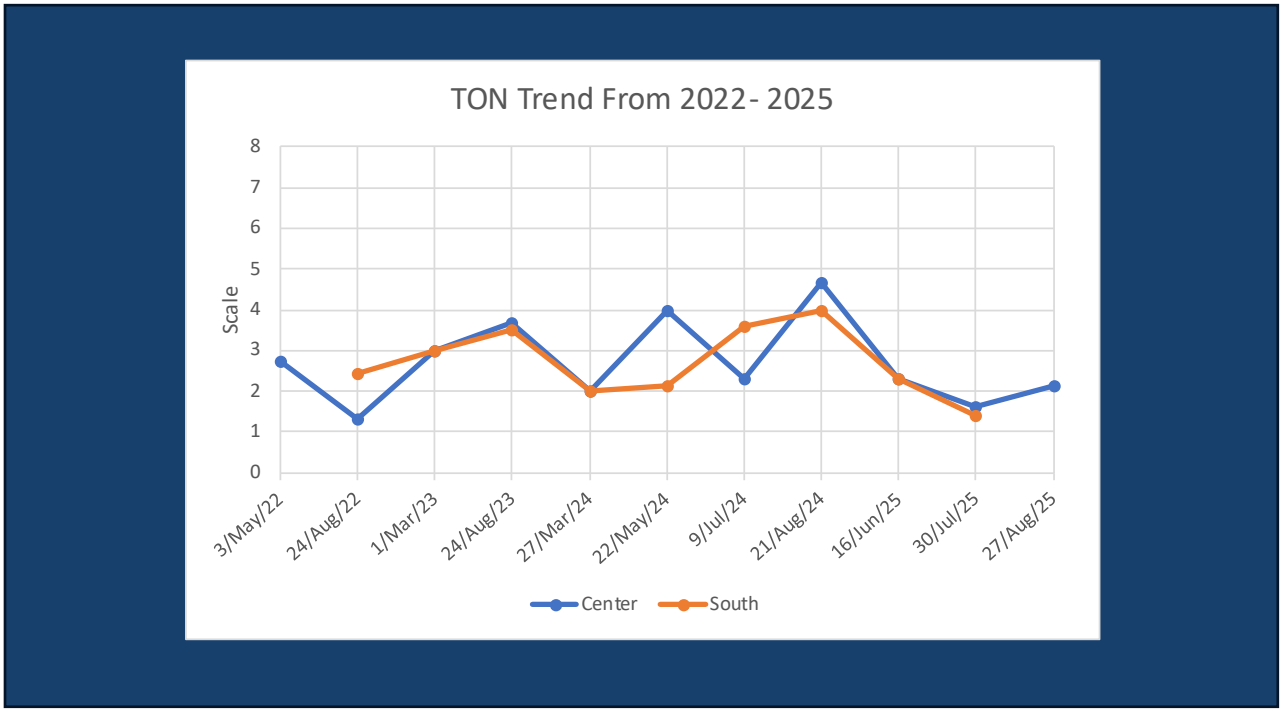
Odour:

For the purposes of recreation, lakes should be free from materials that produce odour in such a degree as to be objectionable or impair use. There is no specific level of odour set as a guideline as the determination of what is objectional, and the characteristics and severity of an odour can be subjective. To provide some metric by which to gauge and monitor odour, a test is conducted to measure threshold odour number (TON) which represents the dilution ratio at which odour is hardly detectable within a water sample. A TON of <8 is considered desirable for recreational lake use. (Odour associated with chemical spills or contamination should be absent.)



Current Status:

TON <8 and within a desirable range.

Date Prepared: September 30, 2025

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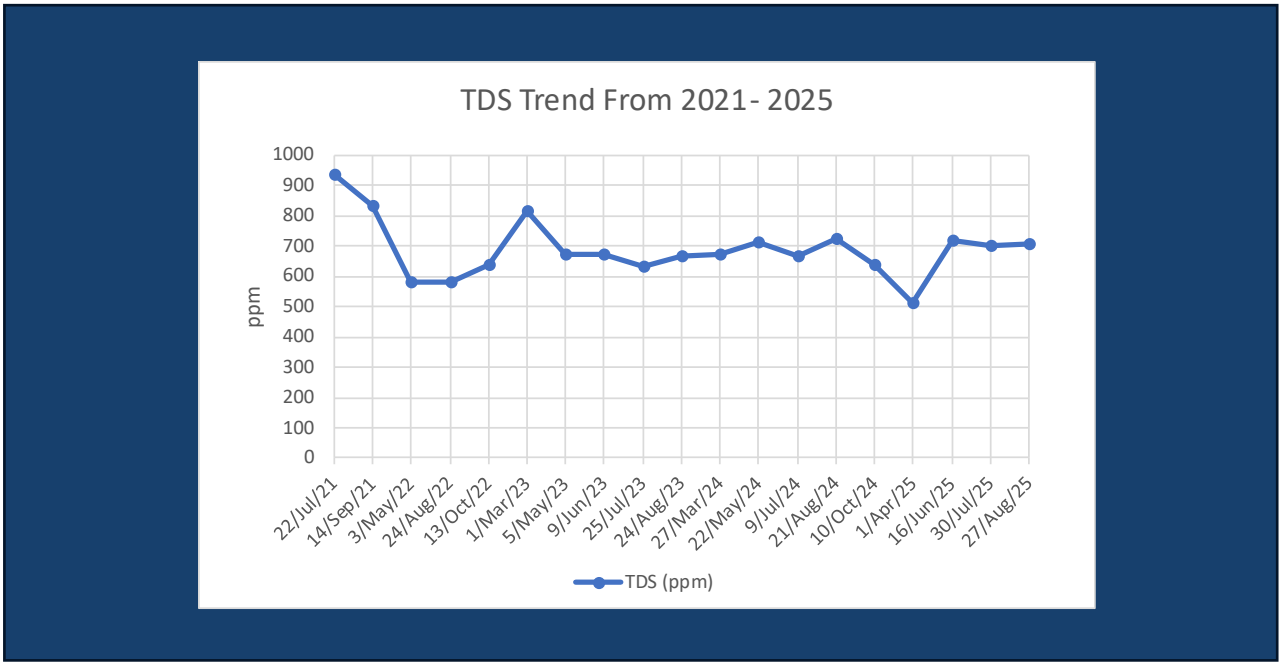
Total Dissolved Solids (TDS):

TDS is the total concentration of dissolved substances in water comprised of a combination of primarily inorganic salt materials and small amount of organic matter. TDS relates to the mineral content of the water, which is important to survival of aquatic life, and, it can be an indicator of potential harmful contaminants, such as iron, manganese, sulfate, bromide, arsenic and fertilizers. Changes to TDS can influence the pH and temperature of the water which can also impact aquatic organisms. Lake water level and "topping up" of the lake may be anticipated to influence TDS. There are no specific guidelines for TDS for lake aquatic life or recreation; however, it is an important indicator to watch for changes and its results may prompt testing of other parameters. The aesthetic objective of TDS for drinking water is ≤500 ppm.



Current Status:

Total Dissolved Solids (TDS) are acceptable and have remained similar over the past sampling dates. Will continue to be monitored and trends analyzed.

Date Prepared: September 30, 2025

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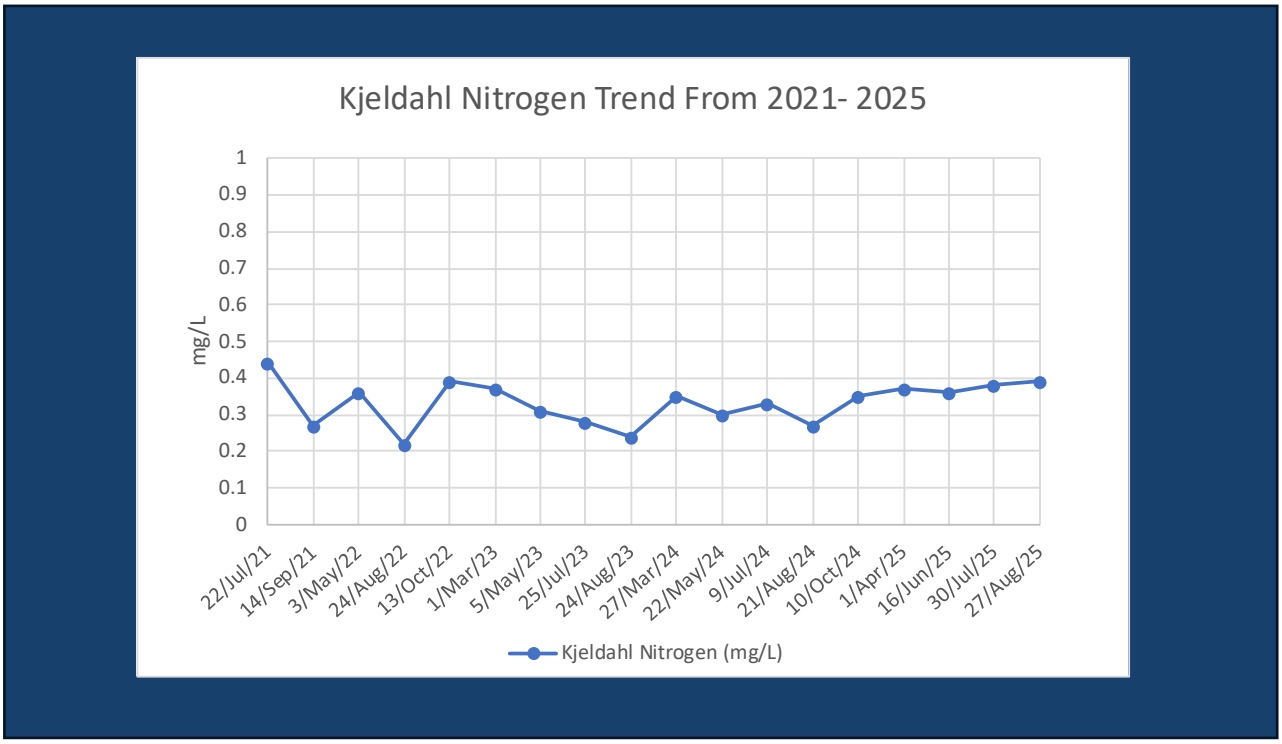
Total Kjeldahl Nitrogen (TKN):

Nitrogen occurs in lakes in multiple forms. Excess nitrogen can cause overstimulation of growth of aquatic plants and algae. Total Kjeldahl Nitrogen (TKN) is the sum of ammonia nitrogen and organic nitrogenous compounds. For surface waters not covered by specific guidelines, nitrogen (total) should be maintained so as to prevent detrimental changes to algal and aquatic plant communities, aquatic biodiversity, oxygen levels and recreational quality. In previous guidelines, a maximum short-term guideline of 1 mg/L for TKN was noted.



Current Status:

Acceptable as per the Environmental Quality Guidelines for Alberta Surface Water Guidelines (EQGASW) for the Protection of Freshwater Aquatic Life (2018) and with consideration of site-specific conditions.

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Environmental Management Consultants

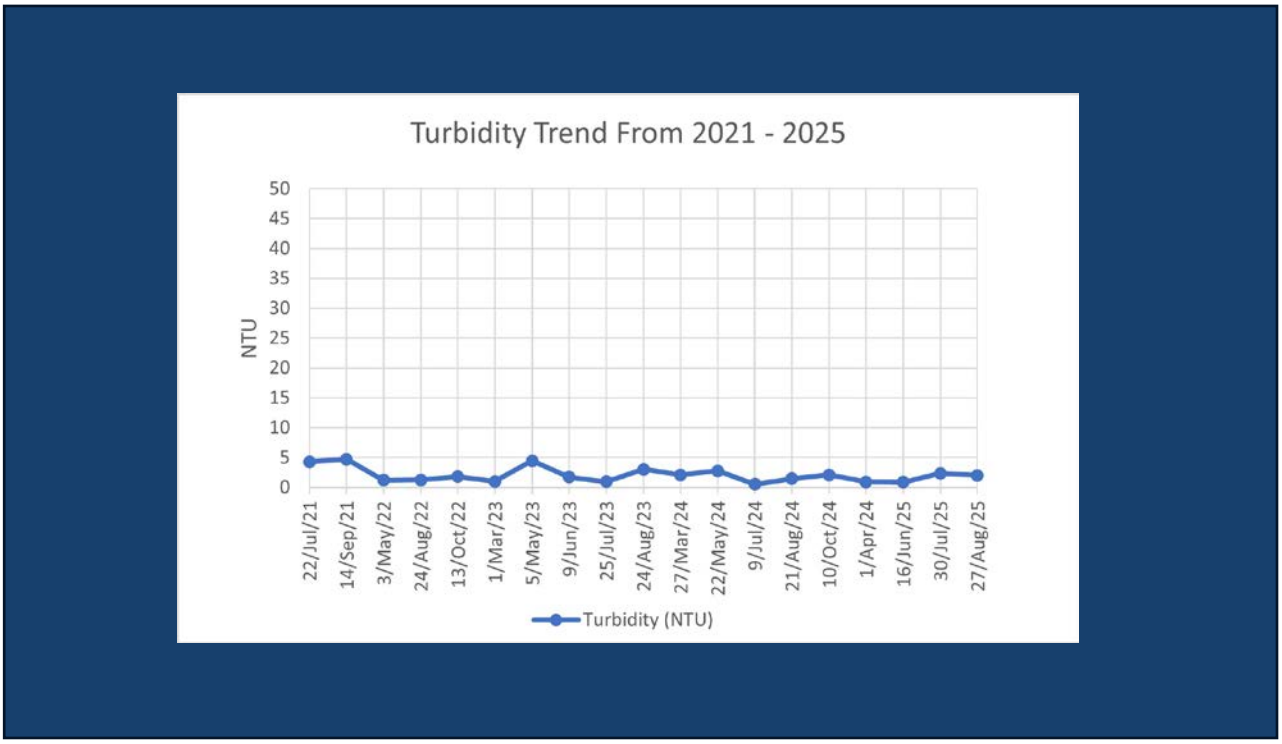
Date Prepared: September 30, 2025

Jensen Lakes

Jensen Lake Data Trend Sheet

Turbidity:

Turbidity (NTU) is the measurement of the cloudiness of a solution due to the number of particles within it. The more hazy or cloudy it is, the more particles suspended within the solution and the higher the turbidity. Turbidity is expected to fluctuate due to clay and silt, fine organic and inorganic matter, soluble colored organic compounds, algae and other microscopic organisms that can be suspended within the water. Generally, low turbidity is beneficial for aquatic life and fish survival as well as for human recreational use. For recreation, less than 50 NTU is desirable. By comparison, treated drinking water is expected to be less than 1 NTU.



Current Status:

Acceptable as per the as per the Environmental Quality Guidelines for Alberta Surface Waters for the Protection of Aquatic Life and for Recreation and Aesthetics (2018).

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Environmental Management Consultants

Date Prepared: December 31, 2025

Attachment

Photographs


Facing north from the center of the lake.


Facing the east shore from the center of the lake.


Facing the south shore from the center of the lake.


Facing west shore from the center of the lake.


Facing south from the boat launch towards the lake.


Facing towards center sampling location hole.


Facing south towards wildlife tracks observed on lake.


Facing east across Jensen Lake from the southwest sampling location.


Facing east across Jensen Lake from the southwest sampling location.


Facing north towards the boat launch from the northeast sampling location.

	Jensen Lake
PHOTOGRAPH LOG: April 1, 2025,	
SE17-54-25-W4M **St. Albert, Alberta**	**Project No.** **14-10-04-03**


Facing northwest from the center of the lake.


Facing northeast from the center of the lake.


Facing east from the center of the lake.


Facing southwest from the center of the lake.


Facing south from the boat launch towards the lake.


Facing west from the boat launch into the bay.


Facing east across lake from the west shoreline.


Chara sp. and Cladophora observed in northwest bay.


Facing north towards new development occurring at the northwest end of the lake.


Cladophora observed on the anchor at southwest sample location.

	Jensen Lake
PHOTOGRAPH LOG: June 16, 2025	
SE17-54-25-W4M St. Albert, Alberta	**Project No. 14-10-04-03**


Facing west from the center of the lake.


Facing northeast from the center of the lake.


Facing southeast from the center of the lake.


Facing south from the center of the lake.

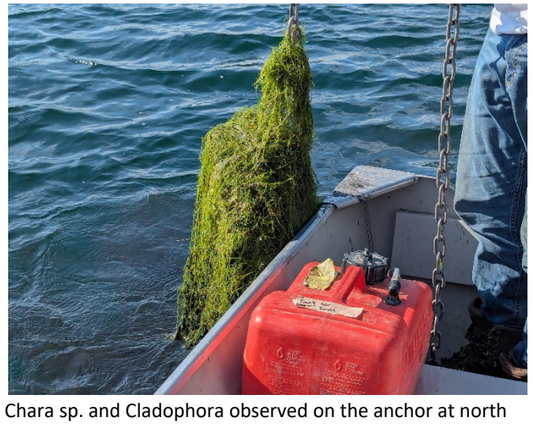

Vegetation on lake bed at northeast edge of lake.


Vegetation on lake bed at southeast edge of lake.


Gull sp. observed within Jensen Lake.


Facing north towards new development occurring at the northwest end of the lake.


Facing north towards northeast corner of lake.


Chara sp. and Cladophora observed on the anchor at north sample location.

	Jensen Lake
PHOTOGRAPH LOG: July 30, 2025	
SE17-54-25-W4M **St. Albert, Alberta**	**Project No.** **14-10-04-03**


Facing west from the center of the lake.


Facing north from the center of the lake.


Facing east from the center of the lake.


Facing south from the center of the lake.

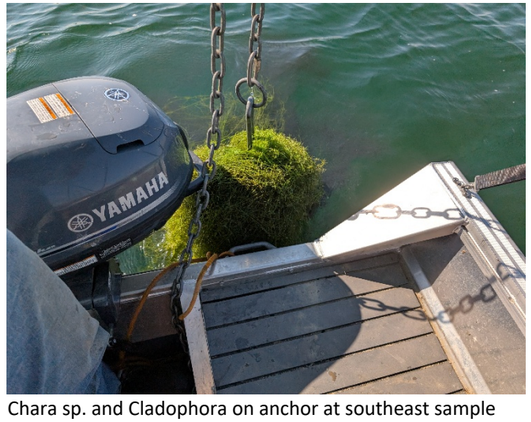

Vegetation along lake bottom from the south edge of lake.


Vegetation on lake bed at northeast edge of lake near dock.


Facing north from south sample location.


Facing south from south sample location.


Facing east from west sample location.



Chara sp. and Cladophora on anchor at southeast sample location.

	Jensen Lake
PHOTOGRAPH LOG: August 27, 2025	
SE17-54-25-W4M **St. Albert, Alberta**	**Project No.** **14-10-04-03**