

## Summary of Hydrology

Frontier Lithium Inc (Frontier) is proposing to develop an open pit mine with supporting facilities, known as the PAK Lithium Project (Project). The Project is located approximately 175 km north of Red Lake. Indigenous communities in proximity to the Project include Deer Lake, North Spirit Lake, Sandy Lake and Keewaywin.

The main objective of the hydrological baseline study is to characterize the existing climate and surface water hydrologic conditions (i.e. surface water levels and streamflow rates, which is the quantity and rate at which surface water flows). The Project site is located approximately 9 km west of Whiteloon Lake within the Cellist Lake-Flanagan River Quaternary Watershed. From here, the Flanagan River drains north through Whiteloon Lake, Cellist Lake and Northwind Lake before discharging into Sandy Lake and continuing north via the Severn River until eventually reaching Hudson's Bay.

Weather monitoring has been conducted at the Project site since February 2017. Data collected at the local weather station includes air temperature, rainfall, humidity, wind speed, wind direction, wind gust, atmospheric pressure, and solar radiation. Hydrological baseline monitoring at the Project site initiated in 2015 involves spot manual streamflow measurements at various locations. Hydrometric stations equipped with leveloggers for recording of continuous water levels were installed in 2019 and 2022. ***Frontier will be completing ongoing data collection in 2024, including manual streamflow measurements, manual water level measurements, and continuous water level measurements.***

Regional climate and hydrometric stations with long-term historical records were also used to help characterize site conditions. Average annual precipitation and temperature estimated for the Project area are 569 millimetres (mm) of precipitation and 0.3 °C, respectively.

Based on long-term hydrometric data gathered at the Flanagan River, which best characterizes the Project site's runoff conditions, it was estimated that surface water flows would be highest in June at 32.8 cubic metres per second ( $\text{m}^3/\text{s}$ ) and lowest in March at 5.1  $\text{m}^3/\text{s}$ . The annual average flow was approximately 17.8  $\text{m}^3/\text{s}$ . Across the Project site, surface water elevations in waterbodies and watercourses were observed to range from 232 metres above sea level (m asl) and 325 m asl.

