Baseline Hydrology Report

Upper Beaver Gold Project

Prepared for:
Agnico Eagle Mines Limited
10200 Route de Preissac
Rouyn-Noranda, QC
J0Y 1C0

Prepared by:
Story Environmental Inc.
332 Main St.
Haileybury, ON
P0J 1K0

April 2025

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 Introduction

1.1 Background

The Upper Beaver Gold Project ("the Project"), is located approximately six kilometres ("km") northeast of the town of Dobie in the Township of Gauthier, Ontario and approximately 14 km east of the town of Kirkland Lake, Ontario (Figure 1.2.1). Agnico Eagle Mines Limited ("Agnico Eagle") is currently evaluating opportunities to develop, operate and eventually reclaim an underground and open pit, gold-copper mine, processing facility and related infrastructure at the Project site. The proposed mine would be built on the site of a former producing mine, expanding on its historical underground workings. The Project entered the Advanced Exploration phase in 2024 and is currently completing a Federal Impact Assessment for the proposed production phase Project. Before deciding to move into the construction/production phase, Agnico Eagle is implementing an Advanced Exploration program to increase confidence in the feasibility of the Project.

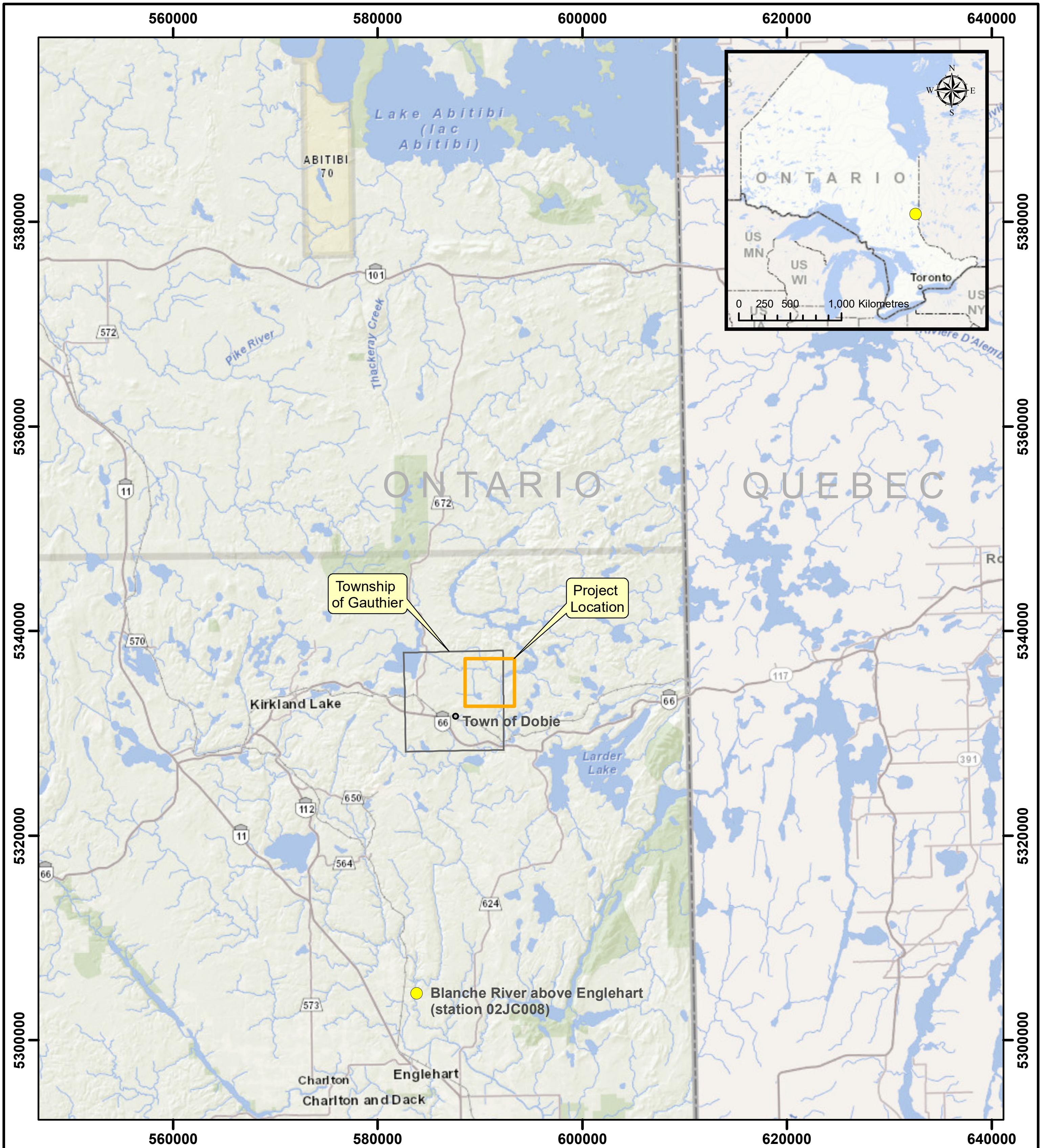
Since July 2018, Story Environmental Inc. ("SEI") has been collecting water level and flow data for this Project under contract with Agnico Eagle Mines Limited (SEI, 2019, 2020, 2021, 2022, 2023, 2024, 2025). SEI also collected hydrological data in this area for Queenston Mining Inc. from 2011 to 2013 (SEI, 2013). These data were used to develop the level – flow models for each of the Project stations and assess the derived flow data against the regional Water Survey of Canada ("WSC") station 02JC008 on the Blanche River (Figure 1.2.1).

1.2 Purpose of Report

This baseline report has been prepared to support the following proposed activities that will require regulatory approval:

- surface water taking;
- groundwater taking from underground workings;
- discharge of treated effluent from an industrial sewage works facility to a water body;
- diversion of water from a natural water body into another natural water body; and
- closure planning.

In addition, this report assesses previous flow modelling work (SEI, 2019), in particular the reliability of the modelled winter flow data. This assessment was undertaken using a five-year portion of the dataset (2019 to 2023) for reasons explained in Section 2.5 of this report.



Legend

- WSC Gauging Station
- Geographic Township of Gauthier
- Project Location

UTM NAD83 Zone17N

Kilometres

0 2.5 5 10

Service Layer Credits: OMNRF-OPM: LIO Topographic Basemap (Oct. 2023). Land Information Ontario: Geographic Township Improved (2023). Locations are approximate.

STORY environmental

AGNICO EAGLE

Agnico Eagle Mines Limited	Baseline Hydrology Report
Upper Beaver Project	Project Location
Drawn by: JALD — Rev'd by: ACS	Drawing No.: SEI-105-101-09-2024-001.2
Date: 03-Oct-2024	**Figure 1.2.1**

Project Location

Document Path: T:\SEI\105 Agnico\105AB_KL_CSD_Explore\Figures\101_Upper Beaver\09_Hydrology\2024\SEI-105-101-09-2024-001 UB_Project Location_8.5x11P.mxd

1.3 Hydrometric Monitoring Stations

The Project is located in the Misema River watershed east of Kirkland Lake, Ontario. The Misema River flows south to the Blanche River (Figure 1.2.1) and has a watershed area of 254 square kilometres ("km^2") at the Beaverhouse Lake outflow (Figure 1.3.1). Near the Project, there are two small lakes (Ava Lake, and York Lake) which are essentially widenings of the Misema River (Figure 1.3.1, inset). At the downstream end of York Lake, Victoria Creek flows into the Misema River, creating a larger total watershed area of approximately 400 km^2. Victoria Creek originates at Victoria Lake approximately 10 km to the west of the Project area.

This baseline report provides streamflow data for six Project area stations: M1 on the Misema River at the outflow of Beaverhouse Lake, M2 on the Misema River downstream of the Project, MUSF1 on the Misema River where Beaverhouse Lake narrows upstream of the Project, V3F and V3G on Victoria Creek near the Project, and V1 at the Victoria Lake outflow (Figure 1.3.1).

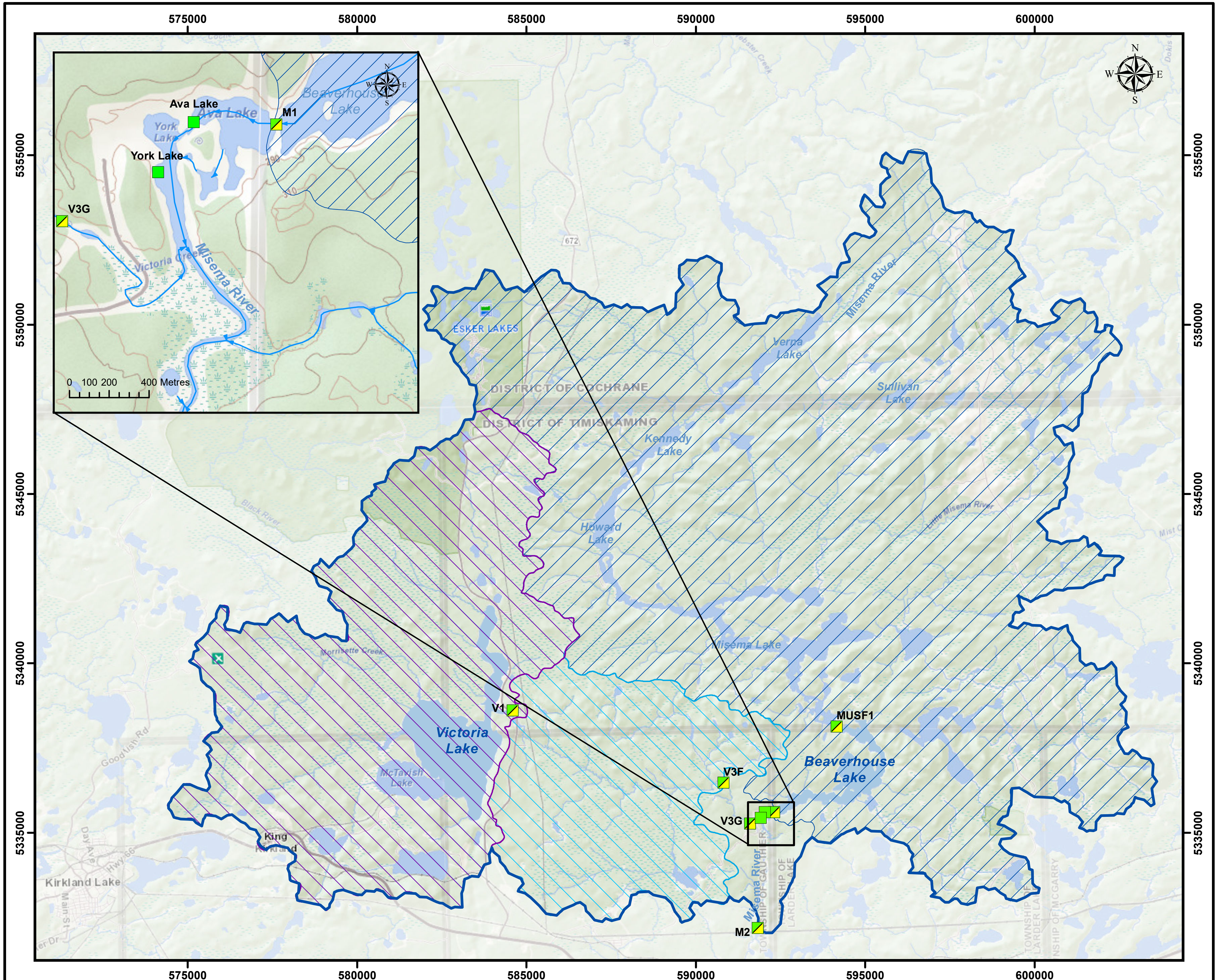
The annual streamflow pattern of the Misema River and its tributaries is characterized by high flows in the spring (typically April and May), receding flows during early summer (June), low flows in middle to late summer (July, August, and early September), increasing flows during fall (late September to November), and moderately low flows in winter months (January, February, and early March). Extreme low flows such as the annual $7Q_2$ and $7Q_{20}$ flows (7-day average low flow with recurrence intervals of 2 and 20 years, respectively), occur in the summer.

Table 1.3.1 provides the drainage areas for stations V1, M1, V3F, V3G, MUSF1, and M2. The sum of the M1 drainage area (254 km^2) and Victoria Creek (V3F or V3G) drainage areas (142 km^2 or 145 km^2) contributes nearly the entirety of the M2 drainage area (404 km^2). This is useful for quality control of the flow data (i.e., the M2 daily flow should approximately equal the sum of the daily flows at M1 and V3F (or V3G)).

Table 1.3.1 Watershed Drainage Areas for the Project Stations

Hydrometric Monitoring Station	Watershed Area (km^2)
V1 (2019) (Victoria Lake outflow)	98
M1 (Misema River at Beaverhouse Lake outflow)	254
MUSF1 (Misema River at Beaverhouse Lake narrows)	234
V3F[Note 1] (Victoria Creek)	142
V3G (Victoria Creek)	145
M2 (Misema River)	404

Notes:
km^2 = square kilometres
Note 1: The V3F location includes both the V3F US and U3F DS stations. Both are in close proximity



Document Path: T:\SEI\105 Agnico\105AB_KL_CSD_Explore\Figures\101_Upper Beaver\09_Hydrology\2024\SEI-105-101-09-2024-002_HydrologicMonitoring Sites_11x17L.mxd

AGNICO EAGLE

Upper Beaver Hydrometric Monitoring Stations

Legend

Hydrology Station

Parameters

- Flow and Water Level
- Water Level
- Watercourse and Flow Direction
- V1 Watershed
- V3F Watershed
- M1 Watershed
- M2 Watershed

Credits: OMRNF-OPM: LIOTopographic Basemap (2022). Stream layer provided by Ontario Integrated Hydrology and field truthed by SEI personel in 2018. Watershed generated using OIH DEM. Locations are approximate.

UTM NAD 83 Zone 17N

Kilometres

0 1 2 4

Figure 1.3.1

Agnico Eagle Mines Limited

Upper Beaver Project

Baseline Hydrology Report

Upper Beaver Hydrometric Monitoring Stations

Project Number: 105A-101-09-2024

Drawing Number: SEI-105-101-09-2024-002.3

Drawn by: JALD | Rev'd by: ACS | Date: 03-Oct-2024

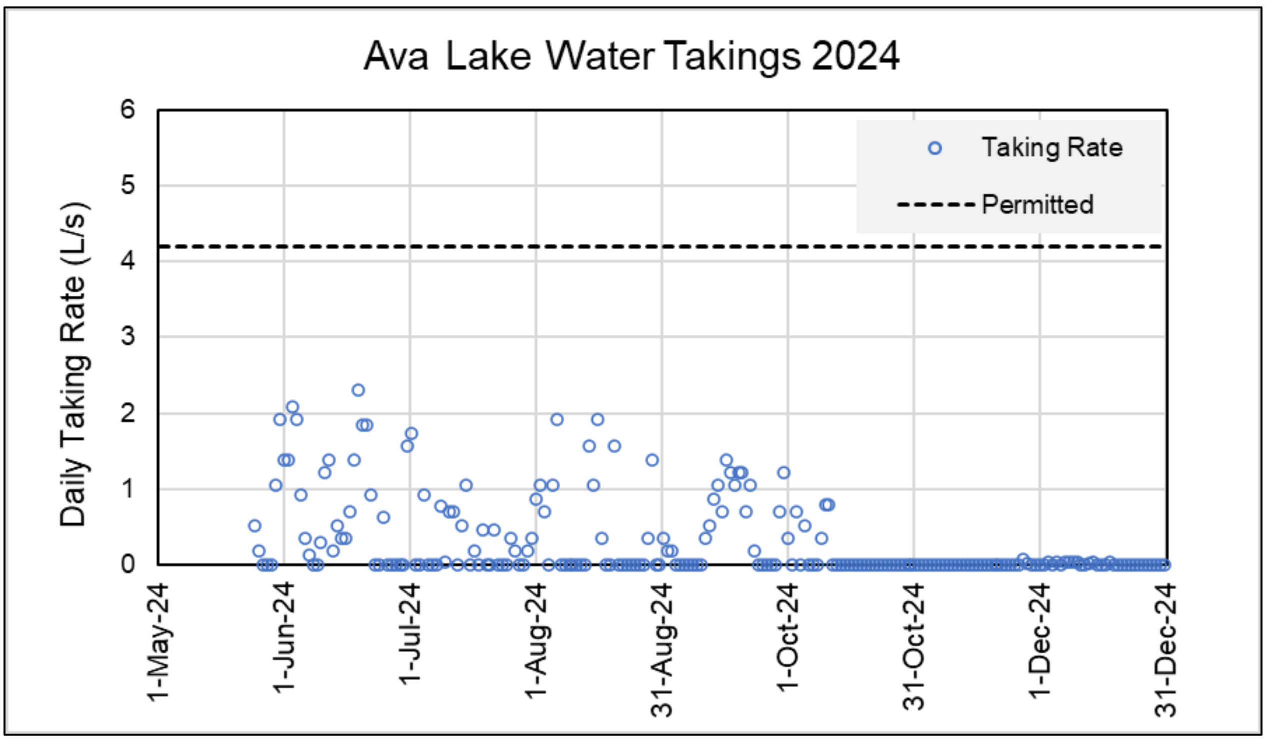
STORY environmental

1.4 Permit to Take Water

The maximum approved groundwater taking under the Ontario Permit to Take Water Number 8357-C5SR58 (“PTTW”) is 39 Litres per second (“L/s”). The maximum surface water takings rate under the same PTTW, from Ava Lake, is 4.2 L/s. Therefore, the combined total permitted water taking, groundwater and surface water, is 43.2 L/s.

Beginning on 25 May 2024, surface water was taken from Ava Lake under the above mentioned PTTW. Water taking data provided by Agnico Eagle are plotted in Figure 1.4.1. The maximum surface water taking was 2.3 L/s on 19 June 2024, which is less than the permitted surface water taking 4.2 L/s. No water was taken from underground workings for the Project in 2024.

During 2024, the lowest average daily streamflow recorded at the M1 station, just upstream of Ava Lake at the Beaverhouse Lake outlet, was 0.27 cubic metres per second (“m^3/s”) or 270 L/s, on 26 August 2024. Therefore, the maximum rate of water taken from Ava Lake was less than 1 percent [i.e., (2.3 L/s / 270 L/s) x 100] of the flow through the lake. This would not cause a measurable reduction in Ava Lake water levels or downstream flows. Based on this fact, users of the hydrometric data provided with this report may choose how they wish to include this data in the baseline dataset.



2024 Daily Water Tracking File_24FEB2025_SEI notesAdded

Figure 1.4.1 Ava Lake Water Takings in 2024

2 Methods

2.1 Overview of Hydrometric Stations and Station Instrumentation

There are eight hydrometric stations within the Upper Beaver project (Table 2.1.1). Data collection at six of the eight stations (i.e., M1, M2, V1, V3F, Ava Lake and York Lake) first began in 2011/2012 and ceased in 2013 (SEI, 2013). In 2018, all these stations except V1 were re-established. Since 2018, four new stations (i.e., MUSF1, V1(2019), V3F DS, and V3G) were established at various times (Table 2.1.1).

Table 2.1.1 History of Upper Beaver Hydrometric Stations

Flow Monitoring			
Station Name	**Waterbody**	**Date Established**	**Notes**
M1	Beaverhouse Lake outflow	July 2011	Re-established at the same location in July 2018
M2	Misema River	July 2011	Re-established at the same location in July 2018
MUSF1	Misema River	September 2021	Continuous (open-water) water-level monitoring not implemented at this location until June 2022. Established at the request of MECP.
V1	Victoria Creek	July 2011	Station discontinued after 2012
V1 (2019)[1]	Victoria Lake	June 2019	Station moved approximately 200 m upstream in 2019 compared to the 2011-2012 location
V3F US[2]	Victoria Creek	July 2011	In 2011-2012, this station was known simply as V3F. Re-established at the same location as V3F US in June 2019.
V3F DS[2]	Victoria Creek	July 2018	This station was established in July 2018 approximately 30 m downstream of V3F US to avoid beaver activity that occurred in summer 2011 and 2012 near V3F US
V3G	Victoria Creek	June 2020	Established in 2020 at request of MECP[3]
Lake Level Monitoring			
Station Name	**Waterbody**	**Date Established**	**Notes**
Ava Lake	Ava Lake	July 2012	Re-established at same location in July 2018
York Lake	York Lake	July 2012	Re-established at same location in July 2018

Notes:

1) All references to station V1 from this point forward in the report refer to V1(2019) but only “V1” is used for simplicity.
2) US = upstream; DS = downstream.
3) MECP = Ministry of the Environment, Conservation and Parks

Water level monitoring stations were instrumented with level-recording data-loggers, housed in protective polyvinyl chloride piping, and securely anchored within the channel using rebar posts driven into the stream or lakebed or other similar methods such as installations on cinder blocks. Data loggers installed at all stations recorded water levels continuously at 15-minute intervals. A separate level logger was placed in the atmosphere for purposes of correcting for the effects of variations in barometric pressure on the recorded water level data, where necessary (i.e., for unvented loggers).

Care was taken to ensure historical continuity of the gauge datum at each station, by establishing multiple survey benchmarks near the cross-section at the time of instrument installation. This is especially important for this Project because the rating curves have been refined through multiple years of data collection. To ensure consistency in the historical record of flow gauging and water level monitoring, optical surveying was conducted at all stations every spring and fall.

Visits were made through the spring, summer, and fall, and during a range of flow conditions, to conduct manual measurements of water level at all stations and to measure streamflow at the flow stations. Streamflow was measured using a range of standard methods and instruments (see Section 2.2.1). Each data point collected for the development of rating curves included the name of the instrument used for measurement, as specified in the Project data tables in Appendix A of this report.

At many hydrometric monitoring stations in northern Ontario, winter ice has a substantial effect on water levels. This can lead to erroneous flow results if the ice effects are not taken into consideration. However, at several of the Upper Beaver hydrometric stations (i.e., M1, V1, and Ava Lake), the level loggers were installed close to the lake outlets, where water velocities are sufficient to maintain open water conditions or only very thin ice cover throughout the winter. Therefore, at these stations there was no need to adjust the winter level and/or flow data to account for substantial ice effects. Stations M2 and York Lake were susceptible to ice formation; however, the effects were minor and detailed analysis demonstrated that the water level and flow data were not substantially affected by ice at these two stations (SEI, 2022). At the Victoria Creek stations (V3F[1] and V3G), thicker ice developed at the cross-sections, which could influence the winter flow data. Any data points affected by ice were excluded from data used for development of the rating curves.

There are several historical WSC stations in the vicinity of the Project. The closest active station is 02JC008 (Blanche River above Englehart, for which the Misema River is a tributary). It is

[1] The V3F station includes two sets of level logging instrumentation at separate cross-sections (V3F US and V3F DS) separated by approximately 30 m. From a flow data perspective (but not a water level perspective), results from the two sets of instrumentation are considered interchangeable. Therefore, V3F is considered a single flow station. V3F DS and V3F US are considered "sub-stations."

located approximately 35 km south of Ava Lake (see Figure 1.2.1) and has a total watershed area of 1780 km^2. Continuous data are available for this station from 1973 to 2024 (WSC, 2024).

2.2 Field Methods

2.2.1 Flow Measurement

At low-to-moderate water levels, streamflow was measured using the area-velocity method and a wading current meter (either Marsh-McBirney Flo-Mate, or, more commonly, a Sontek FlowTracker). For measuring streamflow in high flow streams where wading was not possible, an Acoustic Doppler Current Profiler ("ADCP") boat (Teledyne RD Instruments StreamPro) was used in 2019 and 2020. In 2021, SEI purchased their own ADCP boat (Sontek RS5) and this was used to measure high flows in 2021, 2022, 2023, and 2024, using standard moving boat or stationary boat methods.

2.2.2 Calibration of Flow Measurement Devices

Calibration of flow measuring equipment is an important consideration for hydrometric monitoring programs. The FlowTracker instrument features an automatic quality control ("QC") test which was used daily in the field before measuring flows. The QC test assesses several criteria including Noise Level, Signal-to-Noise-Ratio, Peak Shape, and Peak Location. No QC Test warnings were observed during hydrology fieldwork at Upper Beaver. The Flo-Mate was calibrated every two years (2021, 2023 and 2025) on a flow testing bench by ACG Envirocan in Woodbridge, Ontario.

The Sontek RS5 ADCP boat user manual states that "Each system is individually calibrated during the manufacturing process. Since there are no moving parts and the beams are built into the RS5 head, recalibration is not necessary unless the RS5 is physically damaged." The RS5 ADCP unit used at Upper Beaver in 2021, 2022, 2023, and 2024 was not physically damaged over the 2021 to 2024 period and before each flow measurement all standard checks such as compass calibration were conducted resulting in accurate and reliable data.

2.2.3 Level-logging Instrumentation.

Two types of water level loggers were used in the Project from 2018 to 2024. At most stations, Onset Hobo U20 level loggers were used [0 to 4 metres ("m") range], which require barometric compensation and do not include direct-read cables. Vented loggers (Solinst brand) were also used at some stations in 2021-2022, but damage due to ice effects and animal activity discouraged further use of the vented loggers in the short-term.

2.2.4 Water Level Benchmarks for Beaverhouse, Ava, and York Lakes

Detailed information about the benchmarks and measurement points used to monitor lake water levels at Ava, Beaverhouse, and York Lakes is provided in Appendix B. This information is provided due to the close proximity of the lakes to the Project and the importance of this information at this stage of the Project development. As discussed in Appendix B, recent (May 2024) geodetic surveying checks on elevations for key benchmarks near the three lakes showed variations of up to +0.043 m compared to previous surveying work in 2018. This difference in elevations (0.043 m) is typical of data variability associated with survey-grade GPS technology. The geodetic lake water levels provided in this report continue to use the older surveying results from 2018 (2019 for York Lake). However, these checks also indicate that the geodetic lake water levels are associated with uncertainties of at least approximately ±0.05 m.

2.3 Data Analysis

2.3.1 Rating Curve Development

Rating curves were developed for the flow monitoring stations to calculate flows or discharge based on measured water levels. Rating curves operate on the premise that water level serves as a dependable indicator for both the cross-sectional area of water and its depth (which influences velocity). This relationship is expressed by the equation Q = V*A, where discharge (Q) equals the product of velocity (V) and area (A) of the water, as explained by Hamilton et al. (2019). Rating curves were generally developed using the following equation:

$$Q = C * (H - h_0)^b, where,$$

- Q is streamflow or discharge.
- $H - h_0$ represents the effective depth of water, or hydraulic head, above the control. Here, 'H' is the gauge height relative to the station datum, while 'h_0' is the gauge height indicating zero flow, also known as the offset.
- C is the calibration parameter, which is affected by factors such as width, slope, bed roughness, and other characteristics of the channel.
- b is the calibration parameter influenced by the control geometry (Rainville et al., 2016).

The development of rating curves is an ongoing process. The Upper Beaver monitoring stations are mainly controlled by bedrock features in the channels, which has allowed data to be collected over multiple years during which the hydraulic characteristics of these stable channels have not changed substantially between 2018 and 2024 (an exception is the V1 station, as discussed further in Section 3.6). Small changes in the M1 and M2 rating curves between the earlier 2011-2013 dataset and the 2018-2024 dataset have also been applied.

According to the Hydrometric Manual by the WSC (Rainville et al., 2016), at least six calibration measurements are required for development of a rating curve for a location or segment. A rating curve segment describes that portion of a rating curve which is defined by a separate equation due to variations in channel geometry at different water levels. For instance, rating curves often feature separate "low flow" segments where the channel geometry is influenced more by a narrower and deeper part of the channel than at higher water levels. In this study, rating curves for all flow gauging stations have more than six data points, although not all rating curve segments have six measurement points yet. Often this is because extreme low flows (e.g., $7Q_{20}$ flows) have not yet occurred during the period of data collection.

In developing these rating equations, the range of flows across which the rating curves for the Upper Beaver stations can be reasonably applied was considered. Rantz *et al.* (1982) state that extrapolation of rating curves beyond twice the largest measured flow is generally not valid for deriving flow data. High flows of this magnitude occurred rarely in the 2011-2024 dataset but have been flagged with a "C" quality grading in the accompanying Excel workbook. In 2013, three days of flow data (2-4 May) at M1 and M2 have been flagged with a C grade. In 2023, two days of flow data (1 May and 2 May) at one station (V3G) have been flagged accordingly with a C grade. In 2024, flow data for 13-14 April for the M1 and M2 stations, and for 12-14 April for V3G, have been flagged as C grade.

2.3.2 QA/QC

In general, the QA/QC methods for this work have focused on two approaches:

a. comparison of water level logger data to concurrent manual water level measurements to identify any substantial discrepancies in the water level logger data due to biofouling of the level logger sensor or other effects such as ice formation; and

b. mass balance checks to identify any issues in flow data at one or more stations (e.g., the sum of Victoria Creek flow(s) and Misema River flow (M1) should approximately equal the downstream flow at M2).[2]

The data collected by the Teledyne RD Instruments StreamPro ADCP boat in 2020 were discovered to be inaccurate when compared to both manual measurements taken in the same year and measurements conducted using all other methods between 2018 and 2024. All flows

[2] For instance, where the sum of sum of Victoria Creek daily flow(s) and Misema River daily flow (M1) did not fall within the range of 85% to 115% of the M2 daily flows, all three datasets were reviewed for potential erroneous influences such as beaver effects, ice effects, or level logger error.

measured with this instrument at all Project stations in 2020 were not used in the development of the rating curves.

2.3.3 Estimation of Continuous Winter Flows for Victoria Creek

The continuous water level data and gauging cross-sections at V3F and V3G were substantially influenced by ice cover in the winter. Therefore, it was necessary to estimate the continuous winter flow data for these Victoria Creek stations.

Data from the upstream station, V1, were used as a proxy for V3F and V3G stations based on the following reasons:

- V1 winter flow data were not substantially influenced by ice cover, and
- Direct measurements of baseflow conditions during both winter and summer conditions at V3F and V3G were within the error margins of typical V1 flow data (i.e., often less than 115% of V1).

2.3.4 Data Gaps (2018 to 2024)

Animal interference and ice effects were two of the most common reasons for data gaps at the Project stations. Table A1 in Appendix A summarizes the gaps in level/flow data and the methods used by SEI, where possible to fill in these gaps. When encountering ice effects, interpolation, following the methodology of the WSC, was utilized to fill in any missing data points. Sometimes, when the flow rates from two out of three stations (M1, M2, and V3F or V3G) were known, the flow accounting method was employed to estimate the data for the third station. In winter, due to unreliable data recorded at V3F and/or V3G, the flows were estimated to be equal to V1, with the exception of data from winter 2024 when ice cover was unusually thin (in 2024, the V3F and V3G flow data were used without any infilling with V1 data).

2.4 2011-2013 Data

Appendix E contains the data collected at M1, M2 and V3F US stations for the years 2011-2013. As mentioned in Table 2.1.1, these three stations were re-established in 2018 at the same locations as in 2011-2013; therefore, data from these three stations are fully comparable across the 2011-2024 period. Manual measurements made at the three stations are also plotted on the respective rating curves in Section 3 of this report. Data collected for the V1 station in 2011-2013 are not presented in this report, since the V1 station was not at the same location in 2011-2013 as in the later period of data.

2.5 Project Station Data Compared to Blanche River WSC Data

The different gauging stations associated with the Project and their drainage areas are part of the larger Blanche River watershed, where flows are gauged by the WSC. In this report, the representativeness or "normality" of the flow data measured at the Project stations for the five years from 2019 to 2023 was assessed by evaluating the normality of the Blanche River data for the same period, which has a much longer record (over 45 years). In other words, was this five-year period typical of the long-term conditions observed in the Blanche River, or was it substantially wetter or drier from a flow perspective?

Analysis of "normality" was also used to assess the reliability of modelling work previously undertaken by SEI (SEI, 2019). The Project hydrometric stations do not have adequately long flow records to support the direct computation of statistical flow indices. Previously, SEI conducted modelling work using the Blanche River data from WSC to estimate long-term monthly average flows for M1, M2, and V3F (SEI, 2019).[3] For months that happened to be close to "climate normal" during the 2019 to 2023 period, the average measured flows at the Project stations were compared directly to the long-term averages modelled for the stations in SEI (2019). Differences between the measured (2019-2023) and modelled long-term monthly averages may provide an opportunity to improve the SEI (2019) model for those months that were at or very close to (within 15% of) climate normal at the Blanche River station.

Although some Project station data are also available for the years 2011-2013 and 2024, the climate normal analysis is performed for the five-year period from 2019 to 2023 due to the following reasons.

- For establishing long term averages, more than 10 years of baseline data is needed (ideally, 20 to 30 years or more). An additional few years of Project data would still not be enough to satisfy this condition. The WSC data from the Blanche River station are the best source of these long-term data and were used previously to model long-term averages for key project stations (M1, M2, and V3F).
- Ava Lake surface water takings began in late May 2024. Although the water taking was well below the permitted quantity and did not affect the water levels or flows in a measurable way, the 2024 conditions might arguably no longer be considered "baseline".

The best estimates of the long-term baseline flows at the Project stations continue to be those submitted by SEI in the 2018 Hydrology Report (SEI, 2019), with January-February results revised as per Section 3.13 of this report.

[3] These long-term monthly averages were modelled using a regression of the daily flows measured at the Project stations versus the daily flows measured by the WSC at the Blanche River station.

3 Results

3.1 Introduction

An important goal of this report was to update the flow records (all the daily data) for all stations from 2011 to 2024, using the most recent rating curves established for each station as applicable. The rating curves have been refined from year-to-year as more data has become available, especially for higher flows and water levels. The evolution of the rating curves for all stations is provided in Table A2 of Appendix A.

3.2 M1

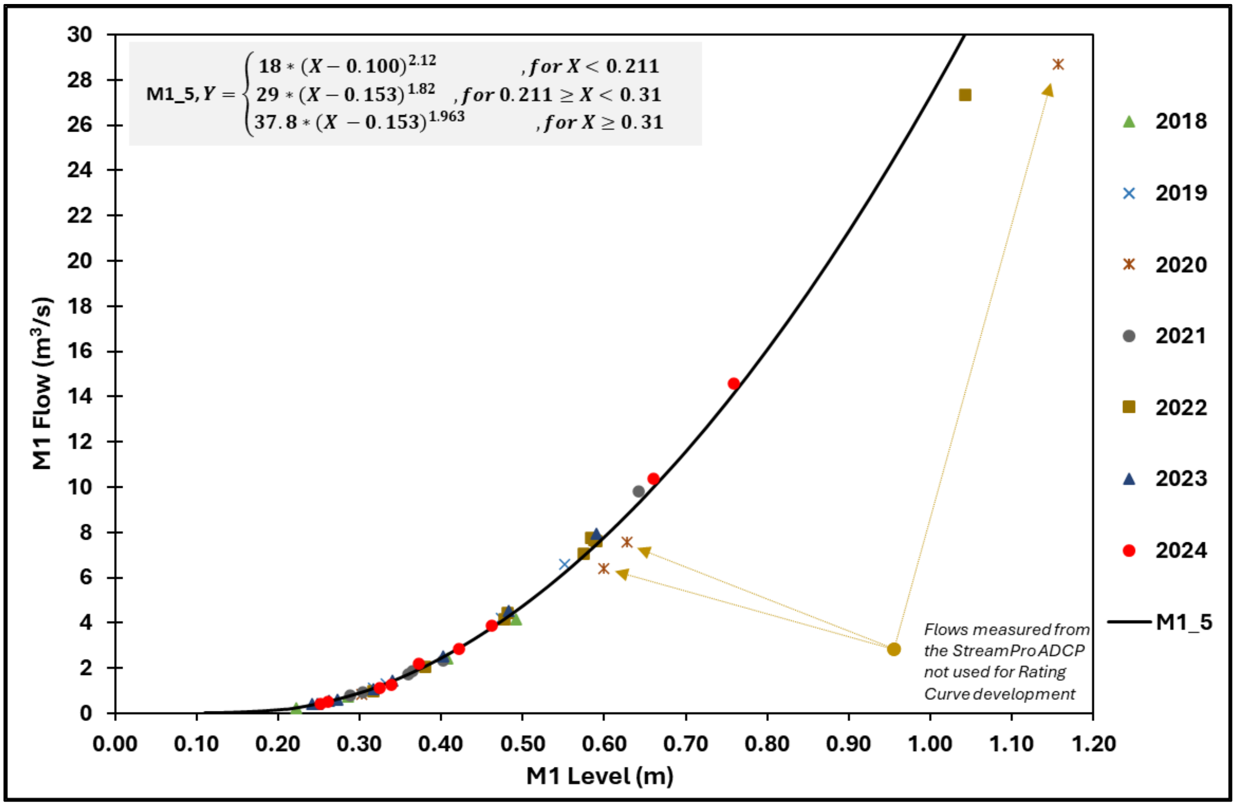
3.2.1 Rating Curve

Following the nomenclature suggestions by the WSC in their 2016 document (Rainville et al., 2016), the current rating curve for the M1 station is notified as M1_5, as this is the fifth iteration of the development of the curve at this station. Figure 3.2.1 shows the current rating curve (M1_5) for the M1 station.

As shown in Figure 3.2.1, three equations were used to describe the curves: one segment for moderate to high flows that was valid for water levels greater than or equal to ~0.31 m, a second segment for low to moderate flows that was valid for water levels less than 0.31 m and greater than or equal to 0.211 m, and a third segment for low flows that was valid for water levels less than 0.211 m.

Data used to develop the M1 rating curve are shown in Table A3, Appendix A. As noted previously in Section 2.3.2, the flow measurements made in 2020 with the StreamPro ADCP were not considered in the rating curve development for M1 (and for all stations described in Section 3).

For the 2011-2013 dataset, the M1_0 rating curve was applied to derive daily flow results. The M1_0 curve is identical to M1_5 at water levels greater than 0.49 m. There are small differences in the curve below those water levels, including use of a second-order polynomial fit, which fits the direct gauging results better (Figure 3.2.2). The M1_0 curve also provided superior results from a mass balance perspective for those periods of 2011 and 2012 when flow data were available from all three stations (M1, V3F, and M2).



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2025\2024 Annual Hydrology Report Work\Rating Curves and Survey with 2024 Data\M1_AllData_wRatingCurve_26Feb2025_AS_ACS.xlsx"

Figure 3.2.1 Rating Curve (M1_5) for M1 Station, used for 2018-2024 Dataset

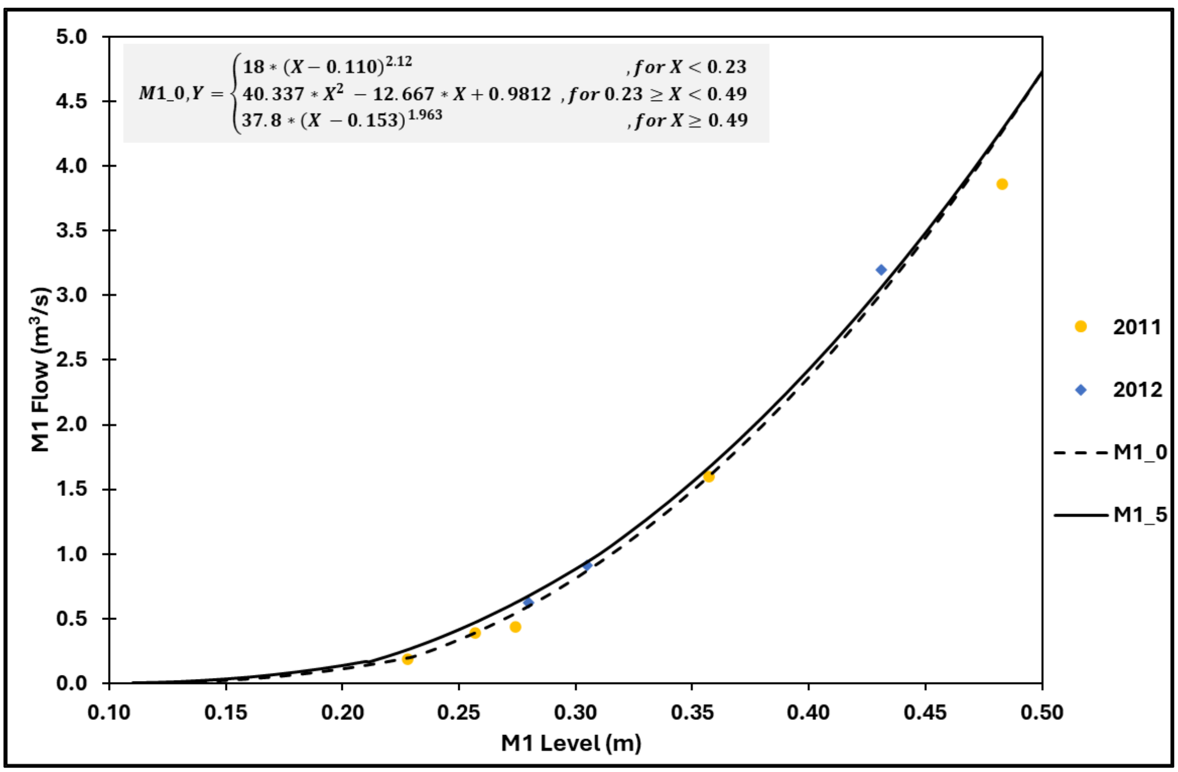


Figure 3.2.2 Rating Curve (M1_0) for M1 Station, used for 2011-2013 Dataset

3.2.2 Flow Summary

The M1 rating curve (M1_5) updated for the 2024 Hydrometric Report (SEI, 2025), was applied to derive daily flow results from 2018 to 2024. For the 2011-2013 dataset, the M1_0 rating curve was applied to derive daily flow results.

Monthly average flows at the M1 station compared to the Modelled long-term Average Flows (SEI, 2019) are summarized in Table 3.2.1. The same monthly data (2019-2023) are plotted graphically in Figure C1 of Appendix C.

Table 3.2.1 Summary of Modelled Long-Term Average Flow for M1 and Comparison to 2019-2023 averages

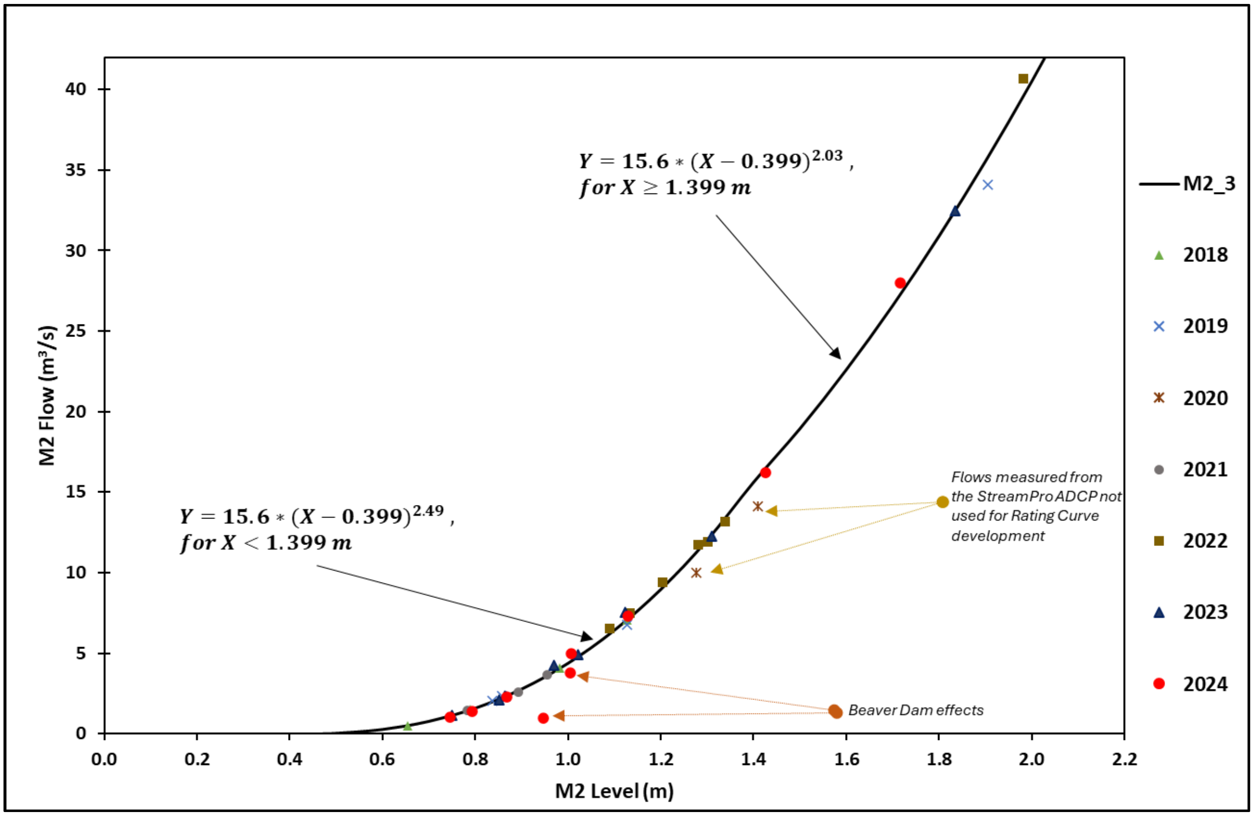
	Modelled M1 Long-Term Average (m^3/s) (SEI, 2019)	Measured Average flows from 2019 to 2023 (m^3/s)					
		2019	2020	2021	2022	2023	Average 2019-2023
Jan	1.2	1.5	1.2	1.6	1.3	2.0	1.5
Feb	0.7	1.3	1.0	1.0	0.9	1.3	1.1
Mar	1.2	1.3	0.9	2.0	1.1	1.1	1.3
Apr	8.2	9.8	6.9	6.3	11.4	12.3	9.3
May	8.5	25.0	16.1	2.4	13.8	10.5	13.6
Jun	3.4	6.5	3.8	0.8	5.8	1.0	3.5
Jul	1.7	1.2	2.0	4.0	6.2	1.4	2.9
Aug	1.1	1.3	0.9	1.6	3.0	0.5	1.5
Sep	1.2	1.1	1.1	1.6	5.5	4.0	2.7
Oct	2.5	2.1	7.7	2.9	5.0	10.4	5.6
Nov	3.2	2.9	6.6	1.5	8.9	5.0	5.0
Dec	2.3	1.8	2.1	1.8	2.9	2.4	2.2
Mean Annual	2.9	4.6	4.2	2.3	5.5	4.3	4.2

105A_101_Monthly AverageFlowDataOnly_24May2024_AS

3.3 M2

3.3.1 Rating Curve

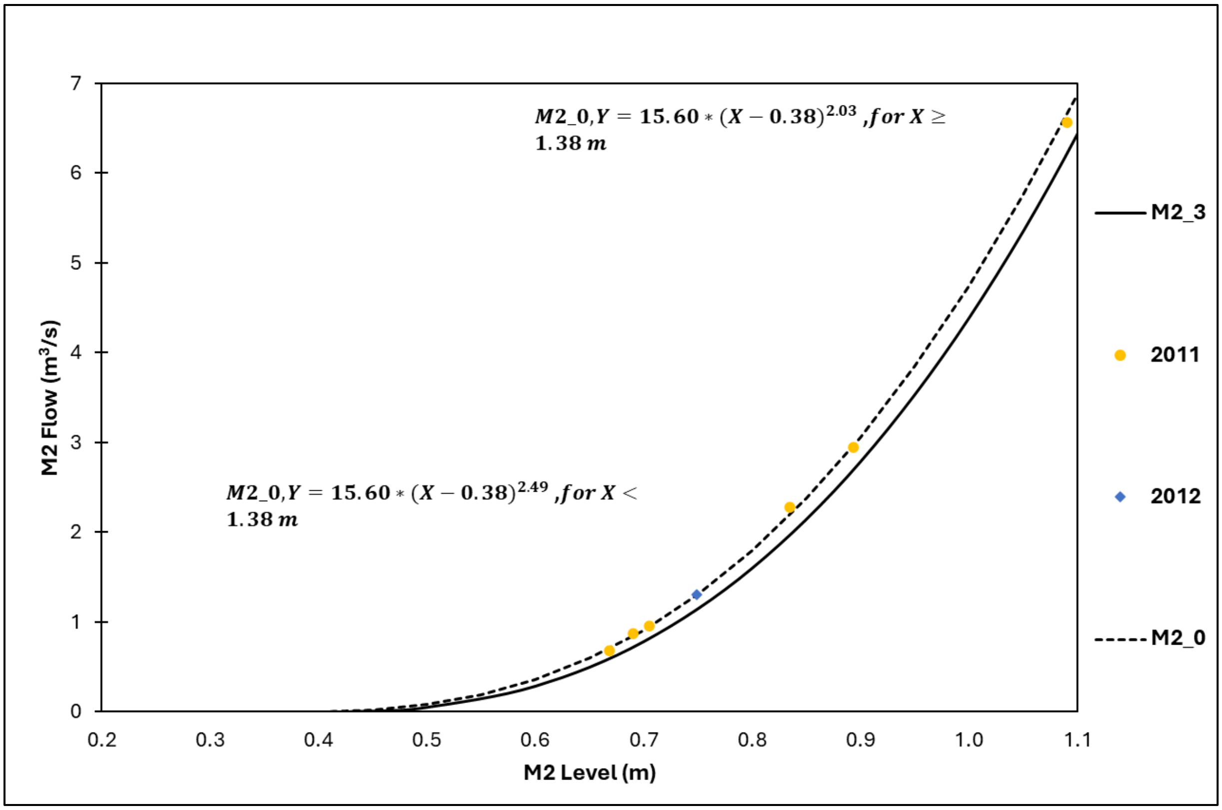
There is a strong relationship between water level and flow over the range of measured flows at the M2 station (Figure 3.3.1). The current rating curve is M2_3, as this is the third iteration of the development of the curve at this station. Two equations were used to describe the curve: one for moderate to high flows that was valid for water levels greater than or equal to 1.399 m and one for low flows that was valid for water levels less than 1.399 m. Data used to develop the M2 station rating curves are provided in Table A4, Appendix A.



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2024\Rating Curves\For Baseline Report\105A_101_M2 RatingCurve_Cleaned_28Jan2025_AS.xlsx"

Figure 3.3.1 Rating Curve (M2_3) for M2 Station, used for 2018-2024 Dataset

A separate M2 rating curve (denoted as M2_0) was used for the 2011-2013 data (Figure 3.3.2). The lower flow portion of the curve is the same as used for this station for that period of data in SEI (2019). The higher flow portion of the curve is based upon assumed similarity to the shape of the newer M2_3 rating curve (no direct measurements of high flows were made in 2011-2013). Simple mass balance evidence (e.g., plotting M2 versus M1 flows for both periods (2011-2013 and 2018-2024) indicated that this assumption is valid.



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2024\Rating Curves\For Baseline Report\105A_101_M2 RatingCurve_Cleaned_28Jan2025_AS.xlsx"

Figure 3.3.2 Rating Curve (M2_0) for M2 Station, used for 2011-2013 Dataset

3.3.2 Flow Summary

The rating curve developed for M2 in 2022 (i.e., M2_3), was applied to the level data recorded for the years 2018 to 2024. The rating curve has not required refinement since it was last updated in 2022. Monthly average flows at the M2 station (2019-2023) compared to the Modelled long-term Average Flows (SEI, 2019) are summarized in Table 3.3.1 (a Figure depicting the data is provided in Appendix C).

Table 3.3.1 Summary of Modelled Long-Term Average Flow for M2 and Comparison to 2019-2023 averages

	Modelled M2 Long-Term Average (m^3/s) (SEI, 2019)	Measured Average flows from 2019 to 2023 (m^3/s)					
		2019	2020	2021	2022	2023	Average 2019-2023
Jan	2.0	2.2	2.1	2.3	2.1	3.5	2.4
Feb	1.2	2.0	1.7	1.5	1.5	2.2	1.8
Mar	2.1	2.0	1.7	3.1	1.8	1.9	2.1
Apr	14.5	14.0	11.6	9.9	17.3	18.7	14.3
May	15.0	37.2	24.0	3.8	21.3	16.9	20.6
Jun	5.8	11.1	6.0	1.3	8.8	1.9	5.8
Jul	2.8	2.2	3.4	5.8	9.4	2.3	4.6
Aug	1.8	2.4	1.3	2.3	5.2	1.1	2.5
Sep	2.0	2.2	2.0	2.6	10.0	6.9	4.7
Oct	4.3	3.8	11.5	4.3	8.5	16.5	8.9
Nov	5.6	5.1	11.3	2.4	14.0	8.4	8.3
Dec	4.0	3.1	3.5	3.0	4.9	4.1	3.7
Mean Annual	5.1	7.3	6.7	3.5	8.7	7.0	6.6

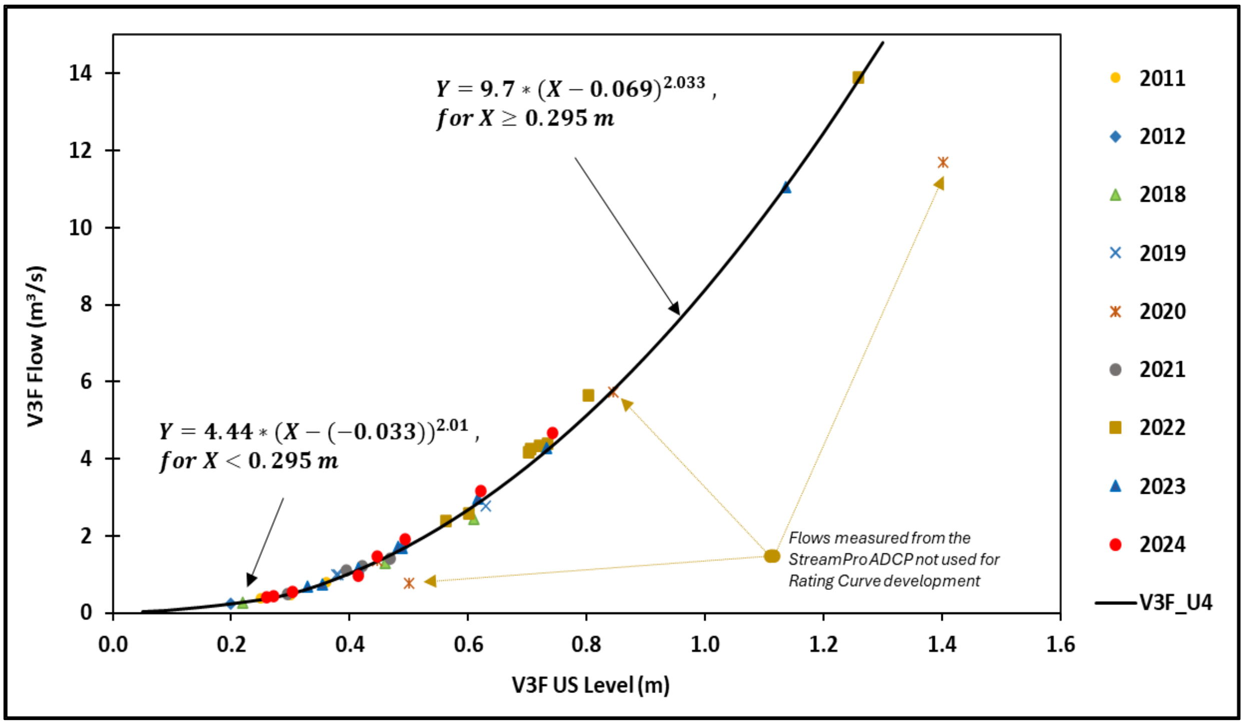
105A_101_Monthly AverageFlowDataOnly_3March2025_AS

3.4 V3F

3.4.1 Rating Curve

This station has two water level monitoring sub-stations: the original V3F station (now called V3F US) and V3F DS. V3F DS was established as a pro-active measure to avoid beaver activity that occurred upstream in 2011 and 2012. However, no beaver activity was observed at the V3F US sub-station over the 2018 to 2024 period. Manual measurements were conducted at both stations beginning in 2018, which are provided in Table A5, Appendix A.

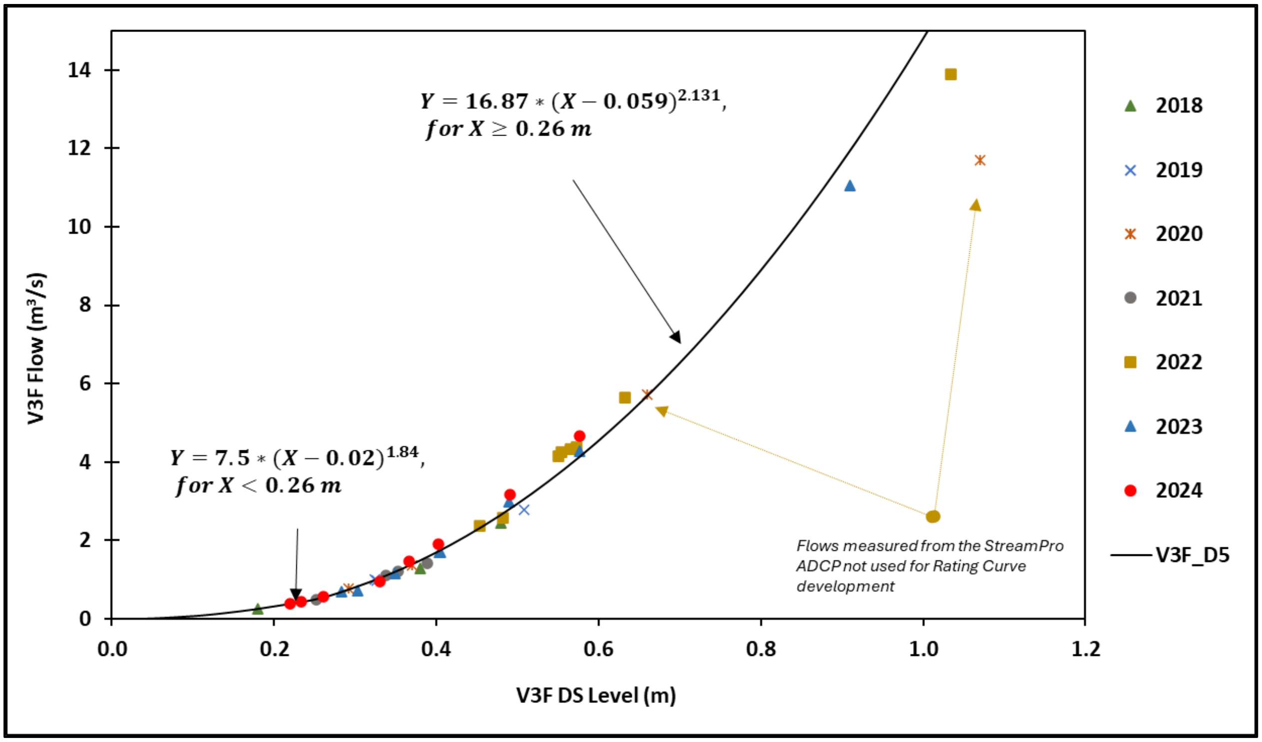
The current rating curve for the V3F US sub-station (i.e., V3F_U4; Figure 3.4.1) is the fourth iteration of the development of the curve. Two equations were used to describe the curve: one for moderate to high flows that was valid for water levels greater than or equal to 0.295 m and one for low flows that was valid for water levels less than 0.295 m.



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2024\Rating Curves\For Baseline Report\105A_101_V3F RatingCurve_Cleaned_28Jan2025_AS.xlsx"

Figure 3.4.1 Rating Curve for Victoria Creek Sub-Station V3F US (V3F_U4)

The current rating curve for V3F DS (i.e., V3F_D5) is the fifth iteration of the development of the curve (Figure 3.4.2). Two equations were used to describe the curve: one for high flows that was valid for water levels greater than or equal to 0.26 m and one for low flows that was valid for water levels less than 0.26 m.



105A_101_V3F RatingCurve_Cleaned_28Jan2025_AS

Figure 3.4.2 Rating Curve for Victoria Creek Sub-Station V3F DS (V3F_D5)

3.4.2 Flow Summary

The rating curve developed for V3F US in 2022 (i.e., V3F_U4) as well as the rating curve developed for V3F DS in 2024 (i.e., V3F_D5), were applied to the level data recorded for the years 2018 to 2024. The V3F US rating curve has not required refinement since it was last updated in 2022. Monthly average flows at the V3F station (2019-2023) compared to the Modelled long-term Average Flows (SEI, 2019) are summarized in Table 3.4.1 (a figure depicting the data is provided in Appendix C). The V3F_U4 rating curve was also used for the 2011-2013 dataset.

Table 3.4.1 Summary of Modelled Long-Term Average Flow for V3F and Comparison to 2019-2023 averages

	Modelled V3F Long-Term Average (m^3/s) (SEI, 2019)	Measured Average flows from 2019 to 2023 (m^3/s)					
		2019	2020	2021	2022	2023	Average 2019-2023
Jan	0.7	NA	0.9	0.9	0.8	NA	0.8
Feb	0.5	NA	0.7	0.7	0.7	0.8	0.7
Mar	0.8	NA	0.7	1.2	0.7	0.7	0.8
Apr	4.8	NA	0.4	3.5	5.4	7.0	5.0
May	5.0	NA	7.5	1.5	7.2	NA	5.4
Jun	2.0	NA	2.2	0.5	3.0	NA	1.9
Jul	1.0	0.8	1.6	1.8	2.9	0.8	1.6
Aug	0.6	0.9	0.4	0.8	2.3	0.5	1.0
Sep	0.7	0.9	0.9	1.0	3.9	2.3	1.8
Oct	1.5	1.4	3.9	1.4	3.2	5.2	3.0
Nov	1.9	1.9	4.0	1.0	NA	3.1	2.5
Dec	1.3	1.2	1.4	1.2	NA	1.4	1.3
Mean Annual	1.7	1.2	2.4	1.3	3.0	2.4	2.2

105A_101_Monthly AverageFlowDataOnly_24May2024_AS

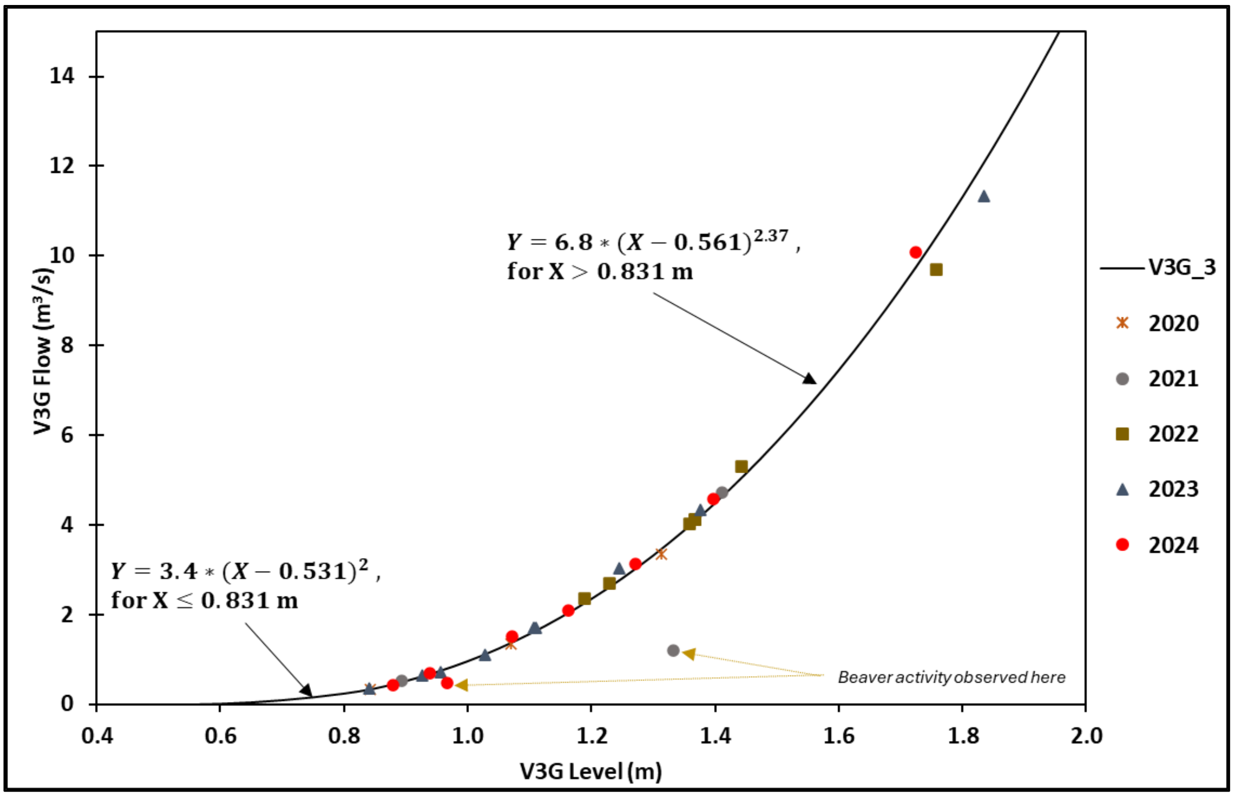
Notes:

1) NA = not available due to beaver effects, level logger damage or other factors. For more detail, see Table A1 in Appendix A.

3.5 V3G

3.5.1 Rating Curve

The current rating curve for the V3G station is depicted on Figure 3.5.1 as V3G_3, as this is the third iteration of the development of the curve. Two equations were used to describe the curve: one for high flows that was valid for water levels greater than 0.831 m and one for low flows that was valid for water levels less than or equal to 0.831 m. The data used to develop the rating curve for V3G are shown in Table A6, Appendix A. The V3G_3 rating curve was applied to all data available from 2020 to 2024.



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2024\Rating Curves\For Baseline Report\105A_101_V3G Rating Curve_Cleaned_28Jan2025_ACS_AS.xlsx"

Figure 3.5.1 Rating Curve for the V3G station (V3G_3)

3.5.2 Flow Summary

The average monthly flow records for V3G (2020 to 2023) are provided in Table 3.5.1, along with mean annual flows.

Table 3.5.1 Measured Average Monthly Flows for V3G from 2020 to 2023.

	Measured Average Flows from 2020 to 2023 (m^3/s)				
	2020	**2021**	**2022**	**2023**	**Average 2020-2023**
Jan	NA	0.8	0.8	1.4	1.0
Feb	NA	0.7	0.7	0.8	0.7
Mar	NA	1.2	0.7	0.7	0.9
Apr	NA	3.4	5.5	6.6	5.2
May	NA	1.5	7.4	6.7	5.2
Jun	NA	0.6	3.0	0.8	1.5
Jul	1.6	1.7	2.7	0.8	1.7
Aug	NA	NA	2.1	0.5	1.3
Sep	NA	NA	3.8	2.4	3.1
Oct	3.9	NA	3.1	5.3	4.1
Nov	NA	NA	4.5	3.1	3.8
Dec	1.4	NA	2.0	1.4	1.6
Mean Annual	2.3	1.4	3.0	2.5	2.5

105A_101_Monthly AverageFlowDataOnly_24May2024_AS

Notes:

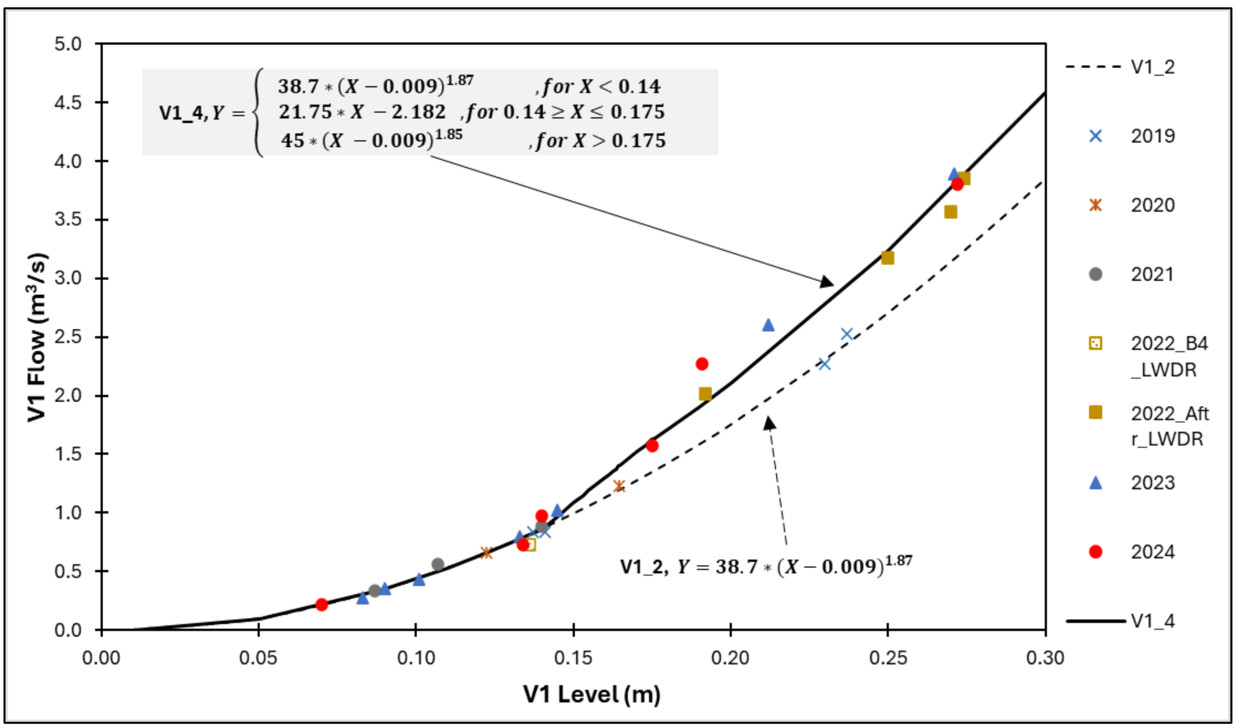
1) NA = not available due to beaver effects, level logger damage or other factors. For more detail, see Table A1 in Appendix A.

3.6 V1

3.6.1 Rating Curve

The V1 rating curve was updated in 2023 because large woody debris was observed at the edges of the V1 dam spillway since the gauging work began in 2019. This debris was relatively stable and had not had any obvious effects on the flow gauging results. However, in communications with MECP staff through 2022, it was decided that V1 would be a key source of reference water level and flow data. To ensure a clear starting point, the woody debris was removed from the spillway on 30 August 2022. This did not affect the lowest-flow portion of the rating curve (below 0.14 m or 0.86 m^3/s), presumably because the water was able to flow under the woody debris relatively unimpeded at low flows and water levels. However, the higher flow portion of the curve was affected as shown in Figure 3.6.1 and further explained below.

Data measured up to and including the year 2022 (i.e., some measurements taken before and after the woody debris was removed) are depicted in Figure 3.6.1. In the above figure, two distinct symbols represent the data before and after the “Large Woody Debris Removal” (“LWDR”) in 2022, denoted as “2022_B4_LWDR” and “2022_Aftr_LWDR”, respectively. The rating curve V1_2 is also presented, which was the rating curve used at this station until 30 August 2022. After 30 August 2022, the V1_4 rating curve has been applied to all level data for the V1 station.

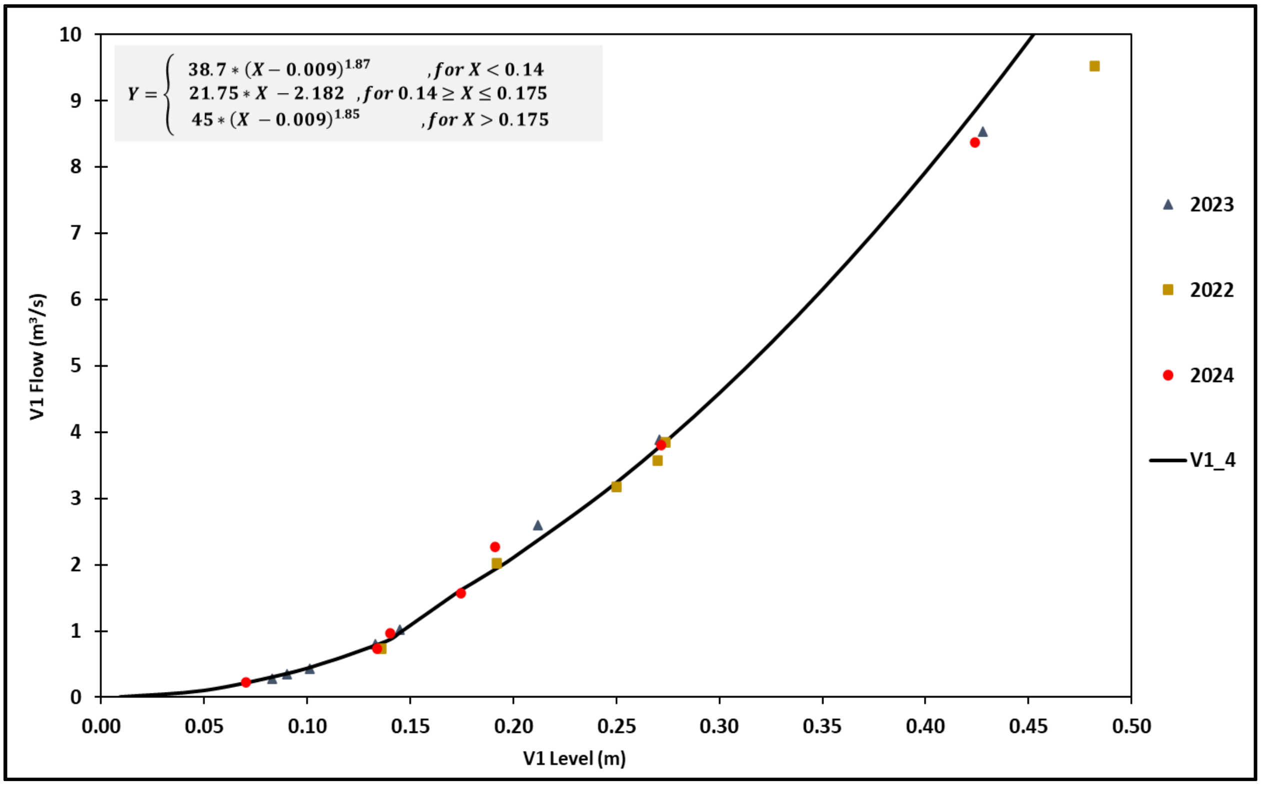


"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2025\2024 Baseline Report Work\Rating Curves For Baseline Report\105A_101_V1 RatingCurve_Cleaned_10March2025_AS.xlsx"

Figure 3.6.1 Rating Curve (V1_2) and the Current Rating Curve (V1_4) at V1 Station

Note that all four data points measured in 2022 after the woody debris removal ("2022_Aftr_LWDR") plot above the V1_2 rating curve (Figure 3.6.1). Therefore, for flows greater than 0.86 m^3/s different rating curve (V1_4) was developed.

All the data points measured after the removal of large woody debris in 2022, in 2023, and 2024 for V1 are shown on Figure 3.6.2. The data used to develop the rating curves are shown in Table A7, Appendix A.



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2025\2024 Baseline Report Work\Rating Curves For Baseline Report\105A_101_V1 RatingCurve_Cleaned_10March2025_AS.xlsx"

Figure 3.6.2 Rating Curve for the V1 Station (V1_4), applied to all Data after 30 August 2022

3.6.2 Flow Summary

Average monthly flow records from 2019 to 2023 for station V1, along with mean annual flows are shown in Table 3.6.1.

Table 3.6.1 Measured Monthly Average Flows for V1 from 2019 to 2023

	Measured Average Flows from 2019 to 2023 (m^3/s)					
	2019	**2020**	**2021**	**2022**	**2023**	**Average 2019-2023**
Jan	NA	NA	0.9	0.8	1.1	0.9
Feb	NA	NA	0.7	0.7	0.8	0.7
Mar	NA	NA	0.8	0.7	0.7	0.7
Apr	NA	2.3	2.4	3.2	4.1	3.0
May	NA	5.7	1.2	5.9	4.9	4.4
Jun	NA	1.8	0.4	2.5	0.6	1.3
Jul	0.8	1.3	1.0	2.5	0.6	1.2
Aug	0.8	0.4	0.6	NA	0.4	0.6
Sep	0.8	0.7	0.8	2.9	1.5	1.3
Oct	1.5	2.7	1.0	2.4	3.7	2.3
Nov	1.6	2.9	0.7	3.7	2.5	2.3
Dec	1.1	1.2	0.9	1.7	1.2	1.2
Mean Annual	NA	NA	1.0	NA	1.8	1.7

105A_101_Monthly AverageFlowDataOnly_3March2025_AS

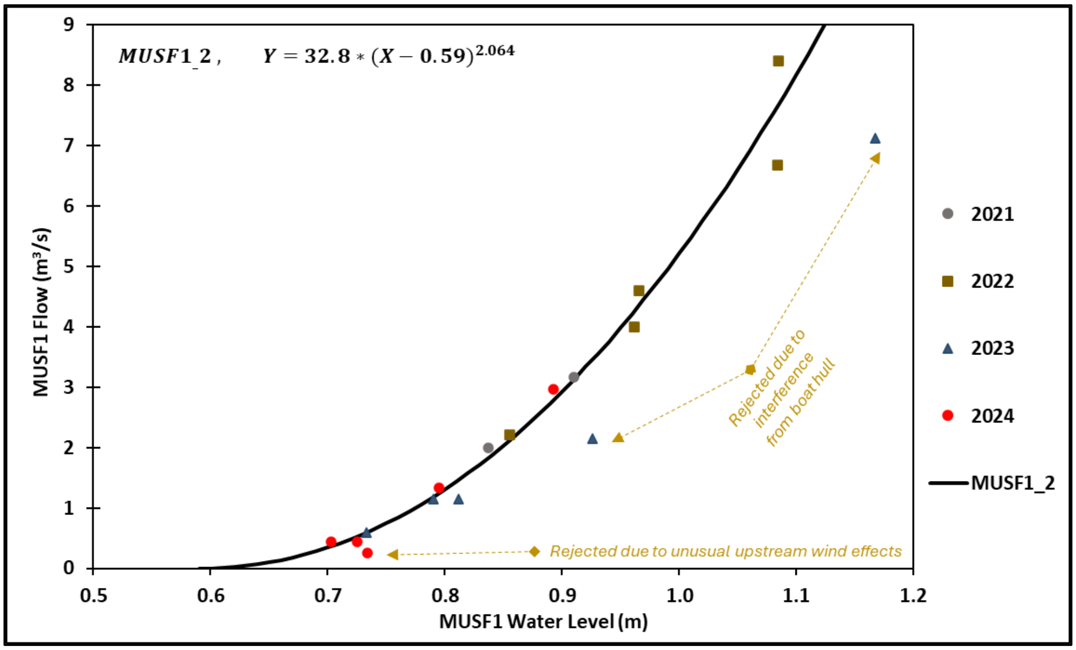
Notes:

1) NA = not available due to beaver effects, level logger damage or other factors. For more detail, see Table A1 in Appendix A.

3.7 MUSF1

3.7.1 Rating Curve

MUSF1 is the newest Project station, established in fall 2021. The data used to develop the rating curve for this station (Figure 3.7.1) are provided in Table A8, Appendix A. The current rating curve is MUSF1_2, which was updated in 2024, and has been applied to all available level logger data from this station (2022 through 2024).



"R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Work\2025\2024 Baseline Report Work\Rating Curves For Baseline Report\105A_101_MUSF1 RatingCurve_Cleaned_10March2025_AS.xlsx"

Figure 3.7.1 Rating Curve for the MUSF1 Station (MUSF1_2)

3.7.2 Flow Summary

Level logger data collection began at MUSF1 in June 2022. The data logger at this station was only deployed for the summer and early fall open water seasons of 2022, 2023 and 2024. Therefore, for these years, complete months of continuous flow data were only available for the months of July, August, and September (only partial months are available in June and October of both years). Table 3.7.1 shows the measured average flows for 2022 and 2023.

Table 3.7.1 Measured Monthly Average Flows for MUSF1 Station

	Measured Average Flows (m^3/s)	
	2022	**2023**
Jul	6.5	1.5
Aug	3.1	0.6
Sep	5.6	4.0

105A_101_Monthly AverageFlowDataOnly_24May2024_AS

3.8 Ava Lake Water Levels

The water levels at Ava Lake have been measured continuously since July 2018. Table 3.8.1 shows the average monthly geodetic water levels at Ava Lake over the 2019 to 2023 period.

Table 3.8.1 Monthly Geodetic Water Levels at Ava Lake for years 2019 to 2023

	Geodetic Water Levels at Ava Lake (m)					
	2019	**2020**	**2021**	**2022**	**2023**	**Average 2019-2023**
Jan	284.34	284.33	284.34	284.34	284.39	284.35
Feb	284.33	284.31	284.30	284.31	284.33	284.32
Mar	284.33	284.30	284.36	284.32	284.31	284.32
Apr	284.57	284.60	284.58	284.70	284.67	284.62
May	285.02	284.81	284.41	284.78	284.66	284.73
Jun	284.59	284.48	284.29	284.56	284.31	284.45
Jul	284.33	284.39	284.49	284.59	284.34	284.43
Aug	284.34	284.29	284.35	284.45	284.26	284.33
Sep	284.31	284.29	284.35	284.55	284.48	284.40
Oct	284.38	284.61	284.45	284.55	284.69	284.54
Nov	284.45	284.61	284.36	284.66	284.55	284.53
Dec	284.38	284.40	284.38	284.45	284.42	284.40

105A_101_LakeWaterLevelsData_1May2024_AS

3.9 Beaverhouse Lake Water Levels

The water levels at Beaverhouse Lake have been measured continuously since July 2018. Table 3.9.1 shows the average monthly geodetic water levels at Beaverhouse Lake over the 2019 to 2023 period.

Table 3.9.1 Monthly Geodetic Water Levels at Beaverhouse Lake for years 2019 to 2023

	Geodetic Water Levels at Beaverhouse Lake (m)					
	2019	**2020**	**2021**	**2022**	**2023**	**Average 2019-2023**
Jan	285.47	285.45	285.48	285.46	285.50	285.47
Feb	285.46	285.44	285.44	285.43	285.46	285.44
Mar	285.46	285.43	285.48	285.44	285.45	285.45
Apr	285.67	285.68	285.68	285.79	285.76	285.72
May	286.09	285.89	285.52	285.86	285.74	285.82
Jun	285.68	285.58	285.41	285.66	285.43	285.55
Jul	285.45	285.50	285.59	285.67	285.46	285.53
Aug	285.46	285.42	285.47	285.55	285.38	285.46
Sep	285.44	285.43	285.47	285.64	285.58	285.51
Oct	285.50	285.72	285.55	285.63	285.78	285.64
Nov	285.55	285.69	285.48	285.74	285.63	285.62
Dec	285.49	285.51	285.49	285.55	285.53	285.51

105A_101_LakeWaterLevelsData_1May2024_AS

3.10 York Lake Water Levels

The water levels at York Lake have been measured continuously since July 2018. Table 3.10.1 shows the average monthly geodetic water levels at York Lake over the 2019 to 2023 period.

Table 3.10.1 Monthly Geodetic Water Levels at York Lake for years 2019 to 2023

	Geodetic Water Levels at York Lake (m)					
	2019	**2020**	**2021**	**2022**	**2023**	**Average 2019-2023**
Jan	281.05	281.02	281.05	281.03	281.15	281.06
Feb	281.01	280.98	280.96	280.97	281.04	280.99
Mar	281.02	280.96	281.11	281.00	281.00	281.02
Apr	281.52	281.73	281.59	281.85	281.77	281.69
May	282.52	282.06	281.21	282.02	281.76	281.91
Jun	281.62	281.35	280.93	281.55	280.99	281.29
Jul	281.03	281.17	281.33	281.56	281.03	281.23
Aug	281.05	280.91	281.04	281.31	280.89	281.04
Sep	281.00	281.00	281.07	281.54	281.37	281.20
Oct	281.15	281.65	281.25	281.51	281.80	281.47
Nov	281.29	281.64	281.07	281.73	281.50	281.45
Dec	281.12	281.17	281.15	281.28	281.20	281.18

105A_101_LakeWaterLevelsData_1May2024_AS

3.11 Project Station Data Compared to Concurrent Blanche River Data

To determine the representativeness of the five years (2019-2023) of flow data from the Project stations, data were assessed against the long-term record at the WSC Blanche River station (available continuously since 1973). To start, data collected from the Blanche River station over the 2019 to 2023 period were compared to data collected over the 1973 to 2018 period. In other words, was the 2019 to 2023 period typical of average long-term conditions, or was it substantially wetter or drier from a flow perspective?

Table 3.11.1 provides the percentage differences between the long-term Average (1973-2018) and the five-year (2019-2023) average monthly flows for the Blanche River. Overall, the Mean Annual Flow for the five-year (2019-2023) period was 23% greater than the Average long-term Mean Annual Flow (Table 3.11.1).

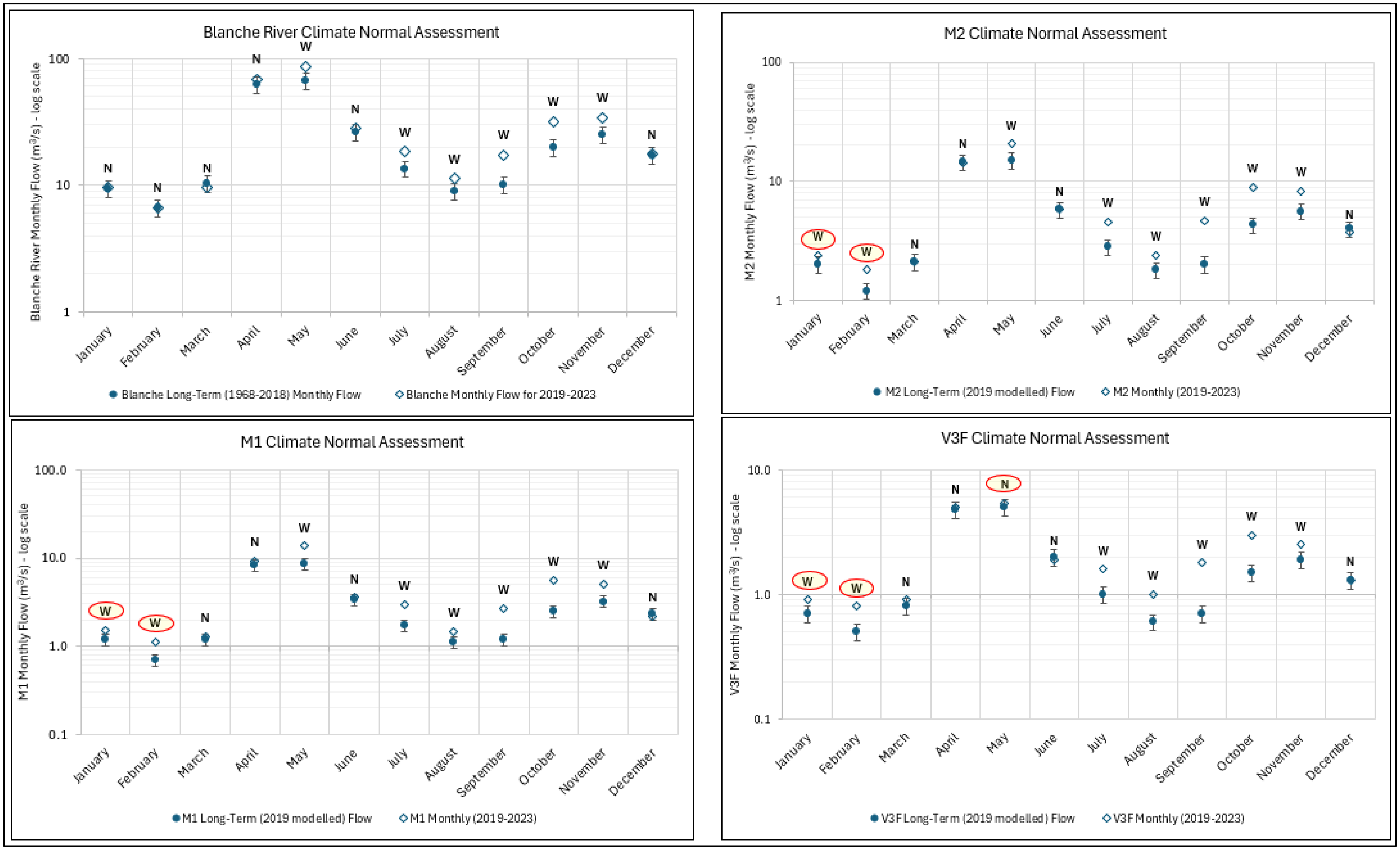
As indicated in the column at the far right of Table 3.11.1, six of the 12 months were Normal (“N”) months, defined as being within ±15% of the long-term (1973-2018) Average Monthly Flow for the month. These Normal months were January, February, March, April, June, and December. The other six months were all Wet (“W”) months, defined as recording average flows more than 15% above the long-term (1973-2018) Average Monthly Flows.

In the upper-left panel of Figure 3.11.1, the Blanche River data provided in Table 3.11.1 are plotted graphically. Similar analyses for the M1, M2, and V3F stations are provided in the other three panels of Figure 3.11.1. For the M2 station (upper-right panel), the monthly patterns of Wet and Normal months match those at the Blanche River station for the ten months from March to December (Figure 3.11.1). At M2, January and February flows were assessed as Wet in Figure 3.11.1. Because these January and February results do not match the Blanche River assessment for the same months, the W symbols for those two months at M2 are circled in red on Figure 3.11.1. Since the Blanche River average flows for January and February were assessed as Normal, these M2 results suggest that the January and February long-term flows previously modelled in SEI (2019) for the M2 station could be too low and may require updating.

Table 3.11.1 Monthly Average Data for the WSC Blanche River Station (WSC, 2024)

	Long-term (1973-2018) Average Monthly Flow	Average Monthly Flow for 2019-2023	Percentage difference between the Two Averages	Hydro-climate Conditions		
	(m^3/s)	*(m^3/s)*	*(%)*	Normal ("N")	Wet ("W")	Dry ("D")
Jan	9.3	9.6	3%	N		
Feb	6.6	6.7	0%	N		
Mar	10.2	9.6	-6%	N		
Apr	61.7	68.4	11%	N		
May	66.9	86.4	29%	W		
June	26.1	27.9	7%	N		
Jul	13.5	18.3	36%	W		
Aug	9.0	11.3	26%	W		
Sep	10.1	17.3	72%	W		
Oct	19.8	31.9	61%	W		
Nov	25.0	34.0	36%	W		
Dec	17.3	17.5	1%	N		
Mean Annual	23.0	28.2	23%			

105A_101_MonthlyLongTermAverageBlanche,M1,M2,V3F_1May2024_AS



105A_Blanche_vs_ProjectStations_wClimateNormalPlots_3March2025_AS

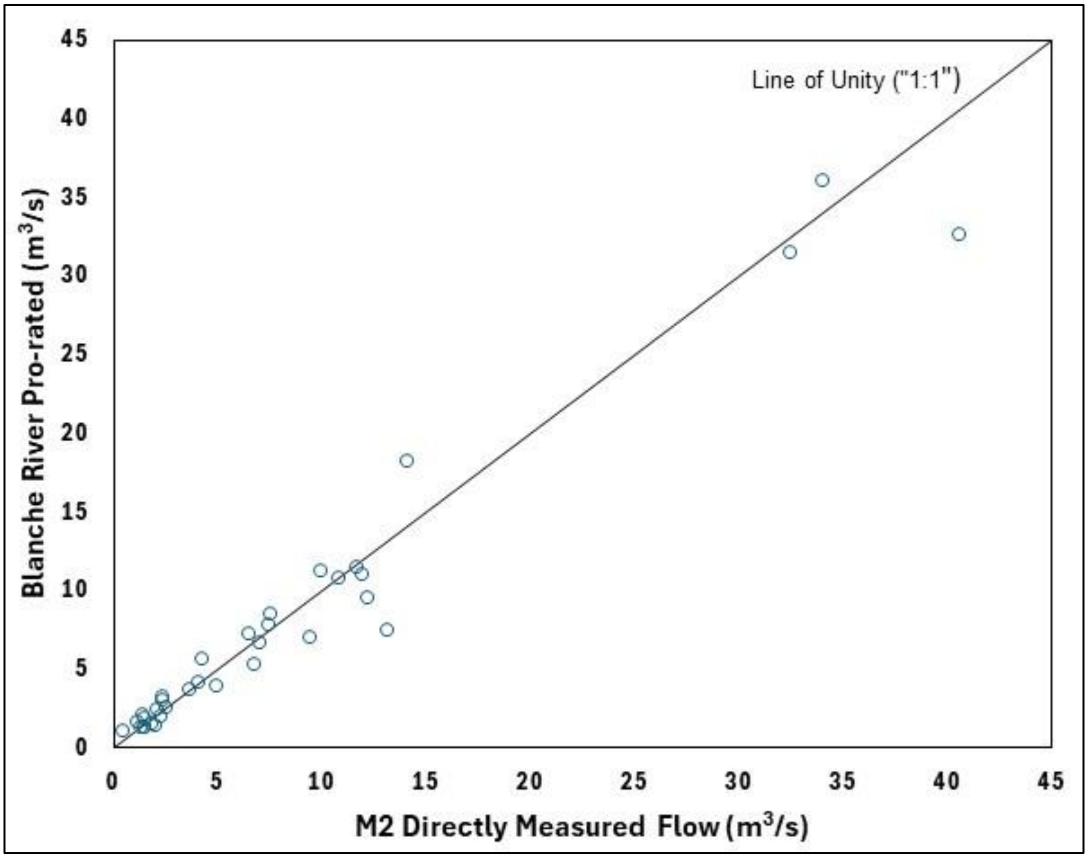
Figure 3.11.1 Combined Assessment of Climate Normal Conditions for Blanche River, M2, M1, and V3F Stations

Notes: Vertical error bars on the long-term modelled Flows (SEI, 2019) are ±15%. The W and N symbols are explained in the text, as are those symbols circled in red.

The M1 assessment of climate normal conditions is provided in the lower-left panel of Figure 3.11.1. These M1 results are the same as those for the M2 station. The 2019-2023 average flows at M1 for January and February were 25% and 57%, respectively, higher than the previous long-term average flows modelled in SEI (2019). These results suggest that the January and February long-term flows previously modelled in SEI (2019) for the M1 station may be too low and may require updating.

The V3F assessment of climate normal conditions is provided in the lower-right panel of Figure 3.11.1. These V3F results are similar to those for the M2 station (and the Blanche River station), with the exception that May was assessed as a Normal month for the 2019-2023 period. However, May 2019 data were not available for this station (Table 3.4.1). Flow data from the M1 and M2 stations indicate that May 2019 recorded the highest flows of any May between 2019 and 2023 (Tables 3.2.1 and Table 3.3.1). Therefore, the absence of this high-flow May 2019 data in the V3F dataset likely resulted in a dis-proportionately low average May value for 2019-2023 when compared to other stations such as the Blanche. These results suggest that the January and February long-term flows previously modelled in SEI (2019) for the V3F station may be too low and may require updating but that the modelled flow for May does not require revision.

The Blanche River flow data were also checked against the M2 directly measured data to further evaluate potential similarities and differences between the Blanche River and Project flow datasets. Thirty-four measurements were completed at the M2 station from 2019 to 2023. The daily average flow data corresponding to the dates when measurements were conducted was extracted from the Blanche River data reported by the Water Survey of Canada (WSC, 2024). The Blanche River watershed is more than four times the size of the M2 drainage area (1780 km^2 versus 404 km^2). Therefore, these watershed areas were used to calculate the pro-rated daily flows for the Misema River using the Blanche River data (i.e., the Blanche River flows were multiplied by a ratio of 404km^2 / 1780 km^2). Figure 3.11.2 shows the two datasets plotted against each other. Overall, good correspondence was observed between flows at the two stations, with fairly uniform scatter around the 1:1 line.

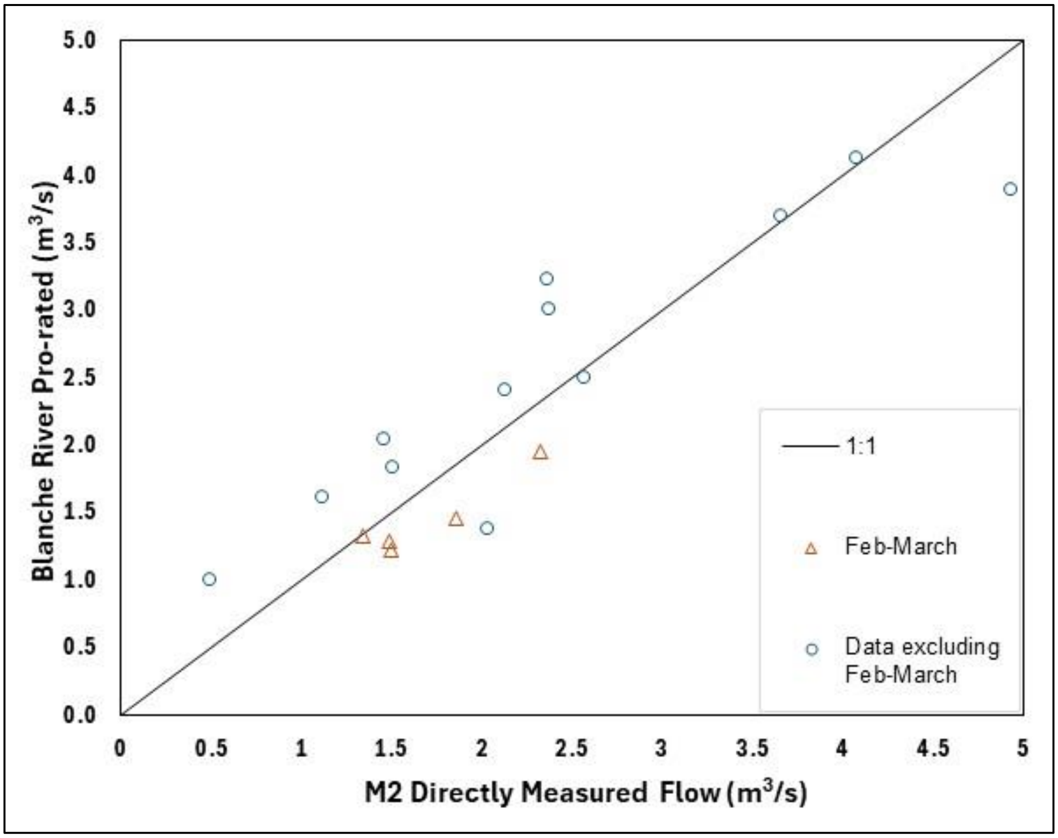


Work\2024\2024 Baseline Report Work\105A_M2vsBlanche

Figure 3.11.2 Flow Observations from M2 and Blanche (pro-rated)

Low flows are of interest as they are important for water management in the mining industry. Figure 3.11.3 is similar to Figure 3.11.2, but it focuses on flows that are less than 5 m^3/s. In Figure 3.11.3 the flows measured in February and early March are also plotted with a different symbol compared to other months[4], due to an interest in previous modelling work (SEI, 2019) carried out for those months. The February and early March flows plot in a different relationship with the Blanche River pro-rated flow data compared to other months (Figure 3.11.3). The months other than February and early March tend to plot above the 1:1 line, suggesting that the Misema River at the M2 station supplies *less* flow compared to the Blanche River in those months. In contrast, the February and early March data tend to plot below the 1:1 line, suggesting that the Misema River at the M2 station supplies *more* flow compared to the Blanche River in the winter months. This difference in the behaviour of non-winter and winter flows could have important implications for the modelling work that was carried out previously for stations M1, M2, and V3F (SEI, 2019). This analysis of directly measured flows at M2 provides further evidence that it is likely that the SEI (2019) modelling work underestimated the average winter flows since that previous modelling work did not develop separate relationships for low flows in different seasons.

[4] January flows at M2 have not been directly measured.



Work\2024\2024 Baseline Report Work\105A_M2vsBlanche

Figure 3.11.3 Flow Observations less than 5 m^3/s from M2 and Blanche (pro-rated)

Analysis of the two datasets plotted in Figures 3.11.2 and 3.11.3 indicates a strong correlation between flow data from the two stations (M2 and the Blanche River station 02JC008). This establishes a sound general basis for the correlation between the Blanche River average flows and the Project watershed flows, as was used for the earlier (SEI, 2019) modelling work. However, seasonal differences in these relationships should be considered in future modelling.

3.12 Winter Flows

3.12.1 Introduction

This section considers whether:

- modelling of long-term monthly average flows previously carried out for three Upper Beaver stations (M1, M2, and V3F) provided accurate estimates of winter flows; and
- the method used for estimating winter flows for Victoria Creek stations V3F and V3G (i.e., as equal to V1) is sufficiently accurate.

3.12.2 Long-term Monthly Average Flows for M1, M2, and V3F

As previously noted in Section 3.11, the February average five-year (2019-2023) flows at the three key Upper Beaver stations (M1, M2, and V3F) were all substantially above the Normal averages previously modelled (SEI, 2019), despite the Blanche River flows for this period not deviating from Normal.

In a previous report (SEI, 2019), SEI stated that:

> "The February average monthly flows are likely underestimated in the model. In future analyses, SEI will explore the use of a seasonal or monthly approach to consider seasonal variations in the relation between M1 and 02JC008 flows."

This statement is supported by the additional flow data recorded from 2019 to 2023. Section 3.11 demonstrated that the February data for the M1 station were underestimated in the SEI (2019) model as were the February data for M2 and V3F. Furthermore, the SEI (2019) model underestimated the January average five-year (2019-2023) flows at M1, at M2, and at V3F. Therefore, revised tables of long-term monthly flows have been prepared for the M1, M2, and V3F stations, which included revised average long-term flows for both January and February (see Section 3.13).

3.12.3 Estimates of Victoria Creek Winter Flows

As mentioned in Section 2.3.3, winter flows at Victoria Creek stations V3F and V3G have been estimated primarily using the assumption that those flows are approximately equal to flows at the upstream station V1 at the outflow of Victoria Lake. This section examines that assumption.

Flow data from the V1, V3F, and V3G stations that were directly measured in February or March of 2021 2022, 2023, and 2024 are summarized in Table 3.12.1. Measurements at each station were generally made within one day of each other. The measured flows at V3F and V3G were higher than at V1 in all years, ranging from 6% to 31% greater (i.e., 106% and 131% in Table 3.12.1), with an average value of 17% greater among all seven comparisons in Table 3.12.1. Based on this, the increase in winter flows between V1 and the downstream stations (V3F and V3G) was 17% on average. Given the limited number of data points available for comparison, as well as the inherent error in winter-time flow measurements where ice cover is present (at least ±10%) this difference is considered marginally meaningful.

Using V1 winter flows as a proxy for V3F and V3G flows likely underestimates the V3F and V3G flows by approximately 15%. Estimating the continuous winter flows in Victoria Creek using those recorded at V1 will provide a conservatively low estimate of winter low flows at V3F and V3G. If there is a water management scenario where more accurate winter flow data at V3F or V3G are required, V1 should be used for modelling purposes with the results cautiously adjusted upward by ~10 to 15% (e.g., to model $7Q_{20}$ winter low flows at V3F or V3G).

Table 3.12.1 Summary of Directly Measured Flows at V1, V3F, and V3G in February

Date	**V1 Measured Flow**	**Date**	**V3F Measured Flow**	V3F / V1	**Date**	**V3G Measured Flow**	V3G / V1
	(m^3/s)		*(m^3/s)*	*(%)*		*(m^3/s)*	*(%)*
26-Feb-21	0.561	-	-	-	25-Feb-21	0.595	106%
24-Feb-22	0.731	24-Feb-22	0.831	114%	28-Feb-22	0.890	122%
28-Feb-23	0.798	27-Feb-23	0.933	117%	1-Mar-23	0.890	112%
13-Feb-24	0.728	14-Feb-24	0.957	131%	14-Feb-24	0.871	120%

105_101_VictoriaCreekWinterFlows_26March2024_ACS.xls

3.13 Revised Long-Term Modelled Flows for Upper Beaver Stations

Tables 3.13.1 to 3.13.3 below, use the previous (SEI, 2019) modelled monthly average flows for the months of March to December since the analysis in Section 3.11 indicated that there was no basis to modify those estimates. Average flows for January and February have been revised with the average measured values from 2019 to 2023 as presented in this report (i.e., from Table 3.2.1 for M1; Table 3.3.1 for M2, and Table 3.4.1 for V3F).

Table 3.13.1 Summary of Long-Term Modelled Average Monthly Flows for M1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean Annual
M1 Average (m^3/s) – SEI (2019)	1.2	0.7	1.2	8.2	8.5	3.4	1.7	1.1	1.2	2.5	3.2	2.3	2.9
M1 Average (m^3/s) – **Revised, as per this Baseline Hydrology report**	**1.5**	**1.1**	1.2	8.2	8.5	3.4	1.7	1.1	1.2	2.5	3.2	2.3	**3.0**

Table 3.13.2 Summary of Long-Term Modelled Average Monthly Flows for M2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean Annual
M2 Average (m^3/s) – SEI (2019)	2.0	1.2	2.1	14.5	15.0	5.8	2.8	1.8	2.0	4.3	5.6	4.0	5.1
M2 Average (m^3/s) – **Revised, as per this Baseline Hydrology report**	**2.4**	**1.8**	2.1	14.5	15.0	5.8	2.8	1.8	2.0	4.3	5.6	4.0	**5.2**

Table 3.13.3 Summary of Long-Term Modelled Average Monthly Flows for V3F

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean Annual
V3F Average (m^3/s) – SEI (2019)	0.7	0.5	0.8	4.8	5.0	2.0	1.0	0.6	0.7	1.5	1.9	1.3	1.7
V3F Average (m^3/s) – **Revised, as per this Baseline Hydrology report**	**0.8**	**0.7**	0.8	4.8	5.0	2.0	1.0	0.6	0.7	1.5	1.9	1.3	**1.8**

4 Summary

This report presents the rating curves, detailing the water level-discharge relationships, for multiple project stations within the Upper Beaver area. These stations include the Misema River at Beaverhouse Lake outflow (M1), Misema River (M2), Victoria Creek (V3F and V3G), Victoria Lake Outflow (V1), and Misema River at Beaverhouse Lake narrows (MUSF1). Additionally, it documents all manual measurements conducted at these stations from 2011 to 2024 and includes the average monthly flow measurements from 2019 to 2023. Furthermore, the report includes the average monthly water levels for Ava Lake, Beaverhouse Lake, and York Lake from 2019 to 2023.

An analysis comparing the long-term flows observed at the Blanche River station (~45 years of data) with the flows recorded between 2019 and 2023 was conducted to assess hydroclimatic normality across the datasets. In other words, was this five-year period typical of normal long-term conditions, or was it substantially wetter or drier? The Blanche River Mean Annual flow from 2019 to 2023 was 23% greater than the Normal Mean Annual flows recorded through the long-term data, with above-normal flows in the months of May, July, August, September, October, and November. However, the winter months of December, January, and February were all close to normal. Average long-term modelled flows for January and February for stations M1, M2, and V3F were revised using the average measured values from 2019 to 2023. Any engineering or Project work carried out using the previous January and February long-term flow estimates were likely conservatively low (e.g., in terms of effects of water-takings and for assimilative capacity). As such, there is no need to modify any previous engineering or Project work related to the January-February flows, but future work should make use of the revised estimates.

In this report, the 2019-2023 averages estimated for the Project stations are not long-term flow averages as they only use a five-year time period. The best estimates of the long-term flows at the Project stations continue to be those submitted by SEI in the 2018 Hydrology Report (SEI, 2019), with monthly winter flows (January and February) as revised in this report.

5 References

Hamilton, S., Watson, M., & Pike, R. (2019). The Role of the Hydrographer in Rating Curve Development. *Journal of Watershed Science and Management*, *3*, 1. https://doi.org/10.22230/jwsm.2019v3n1a1

Rainville, F., Hutchinson, D., Stead, A., Moncur, D., & Elliott, D. (2016). *Hydrometric Manual - Data Computations. Stage - Discharge Model Development and Maintenance (qSOP-NA049-01-2016)* (pp. 1–40). Water Survey of Canada, Environment and Climate Change Canada.

Rantz, S.E., and others, 1982. *Measurement and Computation of Streamflow: Volume 1. Measurement of Stage and Discharge*. Geological Survey Water-Supply Paper 2175. United States Geological Survey, Washington, DC.

SEI. (2013). *Upper Beaver Project Aquatic Baseline Study. Draft report prepared for Osisko Mining Ltd.* Story Environmental Inc., Haileybury, Ontario.

SEI. (2019). *2018 Hydrology Report - Upper Beaver Zone Advanced Exploration Project (Revised June 2020). Report prepared for Agnico Eagle Mines Limited* (p. 56). Story Environmental Inc., Haileybury, Ontario.

SEI. (2020). *2019 Surface Water Hydrologic Monitoring Summary. Report prepared for Agnico Eagle Mines Ltd.* Story Environmental Inc., Haileybury, Ontario.

SEI. (2021). *Upper Beaver Hydrology Data for 2020. Hydrology Letter sent to Agnico Eagle Mines Ltd.* Story Environmental Inc., Haileybury, Ontario.

SEI. (2022). *2021 Annual Hydrometric Monitoring Report. Report prepared for Agnico Eagle Mines Ltd.* (p. 27 + appendices) Story Environmental Inc., Haileybury, Ontario.

SEI. (2023). *2022 Annual Hydrometric Monitoring Report. Report prepared for Agnico Eagle Mines Ltd.* (p. 26 + appendices) Story Environmental Inc., Haileybury, Ontario.

SEI. (2024). *2023 Annual Hydrometric Monitoring Report - Upper Beaver Zone Advanced Exploration Project. Report prepared for Agnico Eagle Mines Ltd.* (p. 27 + appendices). Story Environmental Inc., Haileybury, Ontario.

SEI. (2025). *2024 Annual Hydrometric Monitoring Report - Upper Beaver Zone Advanced Exploration Project. Report prepared for Agnico Eagle Mines Ltd*. (p. 33 + appendices) Story Environmental Inc., Haileybury, Ontario.

WSC. (2024). *Real-time Hydrometric Data for Blanche River Above Englehart (02JC008)*. https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=02JC008

6 Qualifications and Limitations

This document was prepared and reviewed by the undersigned.

Prepared by:

Ajar Sharma, PhD
Water Resources Engineering Intern

Reviewed by:

Anthony Story, M.Sc., P.Geo.
Environmental Geoscientist

Reviewed by:

Maria Story, P.Eng.
President

A description of the limitations, which are inherent to these types of studies, is outlined below. This information forms an integral part of this document.

This report is intended to provide information to Agnico Eagle Mines Limited. SEI is not a party to the various considerations underlying Agnico Eagle Mines Limited's business decisions, and does not make recommendations regarding such business decisions. In providing this report, SEI accepts no liability or responsibility in respect of the site described in this report or for any business decisions relating to the station. SEI accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

The findings, conclusions, and recommendations in this report have been developed in a manner consistent with the level of skill normally exercised by environmental professionals currently practicing under similar conditions in the area. The findings contained in this report are based, in part, upon information provided by others. If any of the information is inaccurate, modifications to the findings, conclusions, and recommendations may be necessary.

The findings, conclusions, and recommendations presented by SEI in this report reflect SEI's best judgment based on the station conditions on the date(s) set out in this report and on information available at the time of preparation of this report. They have been prepared for specific application to this station and are based, in part, upon visual observation of the site, and information available from historical databases. The findings cannot be extended to previous or future site conditions or to portions of the site, which were unavailable for direct observation.

The findings and conclusions of this report are valid only as of the date of this report. If site conditions change, new information is discovered, or unexpected site conditions are encountered in future work, SEI should be requested to re-evaluate the findings, conclusions, and/or recommendations of this report, and to provide amendments as required.

Appendix A

Tables

Table A1. Gaps in Flow Data (2018 to 2024)

Station	Data Gaps / Editing	Reason	Estimation Method
M1	16 Dec 2020 to 20 Dec 2020	Likely ice formation on level logger	M1 water levels were corrected using a linear regression relationship between M1 and Ava Lake water levels
M2	26 Aug 2018 to 5 Sept 2018	Beaver activity.	Flow were estimated to be equal to the sum of flows from M1 and V3F.
	30 July 2019 to 7 August 2019	Likely beaver activity.	Flow were estimated to be equal to the sum of flows from M1 and V3F.
	21 Aug 2020 to 28 Sept 2020	Beaver activity.	Flow were estimated to be equal to the sum of flows from M1 and V3F.
	17 Aug 2023 to 8 Sept 2023	Beaver activity.	Flow were estimated to be equal to the sum of flows from M1 and V3G.
	17 June 2024 to 19 June 2024	Probable Logger Biofouling	Flow were estimated to be equal to the sum of flows from M1 and V3F.
	18 Aug 2024 to 5 Nov 2024	Beaver activity.	Flow were estimated to be equal to the sum of flows from M1 and V3F.
V3F	16 Nov 2018 to 8 Jun 2021	DS Level logger not deployed, because of ice conditions from Nov 2018 to Mar 2019 and due to high-water levels in Apr-May 2019.	US Logger available from 14 Jun 2019
	6 Dec 2019 to 4 Apr 2020	US data unavailable due to ice conditions.	N/A
	8 Dec 2020 to 14 Dec 2020	US data unreliable.	Data interpolated using flow on 7 Dec 2020 at V3F, and flow on 15 Dec 2020 at V1.
	15 Dec 2020 to 18 Mar 2021	US data unreliable.	Flows were estimated to be equal to V1.
	19 Mar 2021 to 24 Mar 2021	US data unreliable.	Flows were estimated to be equal to the difference of flows at M2 and M1.
	9 Jun 2021 to 31 Dec 2021	US logger malfunction.	DS logger functional.
	27 Nov 2021 to 28 Nov 2021	DS Logger malfunction.	Flows were interpolated using flow on 26 Nov 2021 and 29 Nov 2021.
	1 Jan 2022 to 31 Mar 2022	US logger malfunction. DS logger could not be read out.	Flows estimated to be equal to V1.
	1 Apr 2022 to 4 Apr 2022	US logger malfunction.	Flows were estimated to be equal to the difference in flows at M2 and M1.
	1 Apr 2022 to 24 Jan 2023	DS logger could not be read out on 24 Jan 2023.	N/A
	23 Nov 2022 to 24 Jan 2023	Inaccessibility to the logger at the US.	N/A
	25 Jan 2023 to 16 Jun 2023	US logger damage.	DS logger functional.
	27 Feb 2023 to 1 Mar 2023	DS Logger unreliable data due to ice effects.	Flows were estimated to be equal to V1.
	6 May 2023 to 16 Jun 2023	DS Level logger error.	N/A
	12 Aug 2023 to 16 Jan 2024	DS data not read out due to animal interference.	US logger functional.
	14 Nov 2024 to 10 Jan 2025	US Level logger not read out due to ice conditions.	N/A
V3G	28 Aug 2020 to 27 Sept 2020	Unreliable data.	N/A
	6 Nov 2020 to 25 Nov 2020	Level logger not deployed.	N/A
	8 Dec 2020 to 14 Dec 2020	Unreliable flow data due to ice effects.	Flows interpolated using flow on 7 Dec 2020 at V3G, and flow on 15 Dec 2020 at V1.
	15 Dec 2020 to 18 Mar 2021	Unreliable flow data due to ice effects.	Flows were estimated to be equal to V1.
	19 Mar 2021 to 24 Mar 2021	Unreliable flow data due to ice effects.	Flows were estimated to be equal to the difference of flows at M2 and M1.
	30 Aug 2021 to 31 Dec 2021	Beaver dam effects.	N/A
	1 Jan 2022 to 31 Mar 2022	Unreliable flow data due to ice effects.	Flows were estimated to be equal to V1.
	1 Apr 2022 to 13 Apr 2022	Unreliable flow data due to ice effects.	Flows were estimated to be equal to V3F.
	1 Feb 2023 to 5 Apr 2023	Unreliable flow data due to ice effects.	Flows were estimated to be equal to V1.
	1-2 May 2023	Unreliable flow data due to rating curve extrapolation.	Flows were estimated to be equal to V3F.
	6 Apr 2023 to 13 Apr 2023	Unreliable flow data due to ice effects.	Flows were estimated to be equal to V3F.
	12 Apr 2024 to 14 Apr 2024	Unreliable flow data due to rating curve extrapolation.	Flows were estimated to be equal to V3F.
	10 Aug 2024 to 29 Sept 2024	Beaver dam effects.	Flows were estimated to be equal to V3F.
V1	8 Jan 2020 to 23 Mar 2020	Instrument was damaged due to ice.	N/A
	20 Aug 2022 to 30 Aug 2022	Large woody debris was removed.	N/A
MUSF1	24 Oct 2022 to 14 June 2023	Station was only operational from June to October (open water)	N/A
	17 Oct 2023 to 25 June 2024	Station was only operational from June to October (open water)	N/A
	30 Oct 2024 to 10 Jan 2025	Station was only operational from June to October (open water)	N/A

105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\DI\2024 Hydrology Baseline Report\Tab\105A_101_09_2018-2024_BaselineHydroData_19March2025.xlsx

Table A2. Rating Curve Evolution Table

Rating Curve evolution at M1, M2, V3F, V3G, V1, and MUSF1 stations, 2011 to 2024

	2011 - 2013				2018			2019			2020			2021			2022			2023				2018 - 2024			
				Segment transitions	Hydrometric Report			Hydrometric Report			Hydrometric Report			Hydrometric Report			Hydrometric Report			Hydrometric Report				Hydrometric Report & Baseline Report			Segment transitions
M1	C	a	n		C	a	n	C	a	n	C	a	n	C	a	n	C	a	n	C	a	n		C	a	n	
	37.8	0.153	1.963	> 0.49	29	0.153	1.82	29	0.153	1.82	33.5	0.153	1.93	33.5	0.153	1.93	37.8	0.153	1.963	35.69	0.153	1.8729	High	37.8	0.153	1.963	>= 0.31
	40.337*X^2 - 12.667*X + 0.9812			>=0.23 & <=0.49																			Moderate	29	0.153	1.82	>=0.211 & <0.31
	18	0.110	2.12	<0.23	18	0.100	2.12	18	0.100	2.12	18	0.100	2.12	18	0.100	2.12	18	0.100	2.12	18	0.100	2.12	Low	18	0.100	2.12	<0.211
	M1_0				M1_1			M1_1			M1_2			M1_2			M1_3			M1_4				M1_5			
M2	C	a	n		C	a	n	C	a	n	C	a	n	C	a	n	C	a	n	C	a	n		C	a	n	
	15.6	0.38	2.49	<1.38	15.6	0.399	2.49	15.6	0.399	2.49	13.85	0.399	2.4	13.85	0.399	2.4	15.6	0.399	2.49	15.6	0.399	2.49	Low	15.6	0.399	2.49	<1.399
	15.6	0.38	2.03	>=1.38				18	0.48	1.75	13.85	0.399	2	13.85	0.399	2	15.6	0.399	2.03	15.6	0.399	2.03	High	15.6	0.399	2.03	>=1.399
	M2_0				M2_1			M2_1			M2_2			M2_2			M2_3			M2_3				M2_3			
V1											C	a	n	C	a	n	C	a	n	C	a	n		C	a	n	
								46.088 x^2 - 0.465x + 0.0046			38.7	0.009	1.87	38.7	0.009	1.87	38.7	0.009	1.87	38.7	0.009	1.87		38.7	0.009	1.87	<0.14
																								21.75*x - 2.182			>=0.14 & <= 0.175
																	45	0.009	1.85	45	0.009	1.85		45	0.009	1.85	>0.175
																	(After LWD removal)										
								V1_1			V1_2			V1_2			V1_3			V1_3				V1_4			
V3F (DS)					C	a	n	C	a	n	C	a	n	C	a	n				C	a	n		C	a	n	
					11	0.059	1.80	11	0.059	1.80	12.398	0.059	1.88	16.572	0.059	2.145				16.873	0.059	2.1306	High	16.873	0.059	2.1306	>=0.26
														7.5	0.02	1.84							Low	7.5	0.02	1.84	<0.26
					V3F_D1			V3F_D1			V3F_D2			V3F_D3						V3F_D4				V3F_D5			
V3F (US)	V3F_U4 applied in Baseline Report				C	a	n	C	a	n	C	a	n	C	a	n	C	a	n	C	a	n		C	a	n	
					7.4	0.059	1.82	7.4	0.059	1.82	7.58	0.059	1.82	7.5807	0.069	1.76	9.7	0.069	2.033	9.7	0.069	2.033	High	9.7	0.069	2.033	>=0.295
																	4.44	-0.033	2.01	4.44	-0.033	2.01	Low	4.44	-0.033	2.01	<0.295
					V3F_U1			V3F_U1			V3F_U2			V3F_U3			V3F_U4			V3F_U4				V3F_U4			
V3G											C	a	n	C	a	n	C	a	n	C	a	n		C	a	n	
											6.6158	0.561	2.37	6.6158	0.561	2.37	6.8	0.561	2.37	6.8	0.561	2.37	High	6.8	0.561	2.37	>0.831
																							Low	3.4	0.531	2	<=0.831
											V3G_1			V3G_1			V3G_2			V3G_2				V3G_3			
MUSF1																	C	a	n	C	a	n		C	a	n	
																	28.065	0.55	2.291	28.065	0.55	2.291		32.8	0.59	2.064	
																	MUSF1_1			MUSF1_1				MUSF1_2			

105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\DI\2024 Hydrology Baseline Report\Tab\105A_101_09_2018-2024_BaselineHydroData_19March2025.xlsx

Table A3. M1 Data Used to Develop the Rating Curve

Date	Water Level (m)	Measured Flow (m^3/s)	Instrument	
06-Jul-11	0.357	1.60	FlowTracker	
12-Aug-11	0.228	0.19	FlowTracker	
07-Sep-11	0.257	0.39	FlowTracker	
10-Oct-11	0.274	0.44	FlowTracker	
09-Nov-11	0.483	3.86	FlowTracker	
31-May-12	0.431	3.20	FlowTracker	
26-Jun-12	0.280	0.62	FlowTracker	
22-Aug-12	0.305	0.91	FlowTracker	
26-Jul-18	0.286	0.73	FlowTracker	
20-Aug-18	0.222	0.21	FlowTracker	
27-Sep-18	0.408	2.41	FlowTracker	
16-Nov-18	0.492	4.16	FlowTracker	
13-Jun-19	0.552	6.61	FlowTracker	
11-Jul-19	0.333	1.30	FlowTracker	
23-Aug-19	0.317	1.10	FlowTracker	
30-Oct-19	0.474	4.22	FlowTracker	
24-Mar-20	0.303	0.84	Flo-Mate	
25-Feb-21	0.288	0.79	Flo-Mate	
14-Apr-21	0.642	9.80	RS5 ADCP	
20-Aug-21	0.304	0.95	FlowTracker	
22-Oct-21	0.403	2.35	FlowTracker	
29-Oct-21	0.365	1.86	FlowTracker	
29-Nov-21	0.359	1.75	FlowTracker	
23-Feb-22	0.317	1.00	Flo-Mate	
04-May-22	1.043	27.33	RS5 ADCP	
19-May-22	0.588	7.66	FlowTracker	
21-Jun-22	0.482	4.43	FlowTracker	
25-Jul-22	0.584	7.77	FlowTracker	
29-Aug-22	0.380	2.06	FlowTracker	
26-Sep-22	0.591	7.60	FlowTracker	
24-Oct-22	0.477	4.15	FlowTracker	
21-Nov-22	0.575	7.06	FlowTracker	
29-Mar-23	0.317	1.07	Flo-mate	
30-May-23	0.403	2.54	FlowTracker	
29-Jun-23	0.273	0.61	FlowTracker	
20-Jul-23	0.338	1.43	FlowTracker	
10-Aug-23	0.263	0.56	FlowTracker	
24-Aug-23	0.241	0.41	FlowTracker	
05-Sep-23	0.248	0.41	FlowTracker	
18-Oct-23	0.591	7.96	FlowTracker	
13-Nov-23	0.483	4.54	FlowTracker	
13-Feb-24	0.339	1.26	Flo-Mate	
26-Apr-24	0.760	14.59	RS5 ADCP	
29-May-24	0.462	3.90	FlowTracker	
20-Jun-24	0.421	2.85	FlowTracker	
26-Jul-24	0.325	1.13	FlowTracker	
16-Aug-24	0.260	0.50	FlowTracker	
05-Sep-24	0.252	0.41	FlowTracker	
29-Oct-24	0.373	2.19	FlowTracker	
12-Nov-24	0.661	10.36	FlowTracker	
The following data points were excluded from the development of the Rating Curve				***Rationale***
14-Apr-20	0.628	7.59	ADCP StreamPro	Faulty Instrument
28-Apr-20	0.600	6.39	ADCP StreamPro	Faulty Instrument
01-May-20	1.160	28.70	ADCP StreamPro	Faulty Instrument

105A_101_M1 RatingCurve_Cleaned_28Jan2025_AS

Notes:

1) Water Level (metres) is measured with respect to a local (2012) datum.
2) Units of flow are cubic metres per second (m^3/s)
3) ADCP = Acoustic Doppler Current Profiler
4) ADCP StreamPro = Teledyne RD Instruments StreamPro (Rental)
5) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021

Table A4. M2 Data used to develop the Rating Curve

Date	Water Level (m)	Measured Flow (m^3/s)	Instrument	
06-Jul-11	0.835	2.28	FlowTracker	
11-Jul-11	0.893	2.95	FlowTracker	
12-Aug-11	0.668	0.68	FlowTracker	
29-Sep-11	0.690	0.87	FlowTracker	
11-Oct-11	0.705	0.96	FlowTracker	
08-Nov-11	1.090	6.57	FlowTracker	
31-Aug-12	0.749	1.31	FlowTracker	
26-Jul-18	0.789	1.51	FlowTracker	
20-Aug-18, 7:15 a.m.	0.659	0.51	FlowTracker	
20-Aug-18, 4:30 p.m.	0.649	0.48	FlowTracker	
27-Sep-18	0.983	4.07	FlowTracker	
16-Nov-18	1.127	7.06	FlowTracker	
08-Mar-19	0.791	1.49	FlowTracker	
2-May-19	1.906	34.10	ADCP StreamPro	
11-Jul-19	0.858	2.36	FlowTracker	
23-Aug-19	0.836	2.03	FlowTracker	
30-Oct-19	1.128	6.78	FlowTracker	
19-Mar-20	0.788	1.50	FlowTracker	
26-Feb-21	0.769	1.34	FlowTracker	
20-Aug-21	0.783	1.46	FlowTracker	
22-Oct-21	0.956	3.66	FlowTracker	
30-Nov-21	0.893	2.57	FlowTracker	
23-Feb-22	0.821	1.86	FlowTracker	
03-May-22	1.981	40.66	RS5 ADCP	
20-May-22	1.281	11.72	RS5 ADCP	
23-Jun-22	1.134	7.47	FlowTracker	
26-Jul-22	1.338	13.14	RS5 ADCP + FlowTracker	
30-Aug-22	1.204	9.41	RS5 ADCP	
27-Sep-22	1.302	11.92	RS5 ADCP	
25-Oct-22	1.090	6.53	RS5 ADCP + FlowTracker	
22-Nov-22	1.254	10.79	RS5 ADCP	
28-Feb-23	0.850	2.32	FlowTracker	
25-Apr-23	1.834	32.48	RS5 ADCP	
30-May-23	0.969	4.24	FlowTracker	
16-Jun-23	0.863	2.37	FlowTracker	
21-Jul-23	0.852	2.13	FlowTracker	
10-Aug-23	0.749	1.12	FlowTracker	
22-Sep-23	1.021	4.93	FlowTracker	
18-Oct-23	1.309	12.24	RS5 ADCP	
14-Nov-23	1.124	7.53	RS5 ADCP + FlowTracker	
13-Feb-24	0.868	2.29	FlowTracker	
24-Apr-24	1.716	28.00	RS5 ADCP	
28-May-24	1.129	7.33	RS5 ADCP	
21-Jun-24	1.007	4.96	RS5 ADCP	
30-Jul-24	0.793	1.41	FlowTracker	
15-Aug-24	0.746	1.02	FlowTracker	
12-Nov-24	1.425	16.23	RS5 ADCP	
The following data points were excluded from development of the Rating Curve				***Rationale***
23-Apr-20	1.277	10.00	ADCP StreamPro + FlowTracker	Faulty Instrument
28-Apr-20	1.409	14.10	ADCP StreamPro + FlowTracker	Faulty Instrument
04-Sep-24	0.947	0.95	FlowTracker	Beaver Effects
28-Oct-24	1.004	3.76	FlowTracker	Beaver Effects

105A_101_M2 RatingCurve_Cleaned_28Jan2025_ACS

Notes:

1) Level (metres) is measured with respect to a local (2018) datum.
2) Units of flow are cubic metres per second (m^3/s).
3) ADCP = Acoustic Doppler Current Profiler
4) ADCP StreamPro = Teledyne RD Instruments StreamPro (Rental)
5) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021

Table A5. V3F Data used to develop the Rating Curves

Date	Water Level (m)		Measured Flow (m^3/s)	Instrument	
	Upstream Station	Downstream Station			
08-Jul-11	0.360	n/a	0.81	FlowTracker	
12-Aug-11	0.301	n/a	0.46	FlowTracker	
07-Sep-11	0.252	n/a	0.39	FlowTracker	
07-May-12	0.486	n/a	1.73	FlowTracker	
28-Jun-12	0.200	n/a	0.24	FlowTracker	
20-Aug-18	0.218	0.184	0.26	FlowTracker	
27-Sep-18	0.457	0.380	1.30	FlowTracker	
16-Nov-18	0.610	0.480	2.44	FlowTracker	
12-Jul-19	0.378	0.324	0.99	FlowTracker	
22-Aug-19	0.381	0.327	0.99	FlowTracker	
31-Oct-19	0.630	0.508	2.79	FlowTracker	
22-Jan-20	n/a	0.292	0.78	FlowTracker	
23-Jul-20	0.447	0.370	1.36	FlowTracker	
20-Aug-21	0.295	0.252	0.48	FlowTracker	
28-Sep-21	0.469	0.389	1.42	FlowTracker	
21-Oct-21	0.421	0.353	1.21	FlowTracker	
29-Nov-21	0.394	0.338	1.11	FlowTracker	
04-May-22	1.260	1.034	13.89	RS5 ADCP	
19-May-22	0.720	0.565	4.33	RS5 ADCP	
22-Jun-22	0.602	0.482	2.57	FlowTracker	
26-Jul-22	0.705	0.554	4.24	RS5 ADCP	
30-Aug-22	0.804	0.633	5.65	RS5 ADCP	
27-Sep-22	0.735	0.573	4.39	RS5 ADCP	
25-Oct-22	0.562	0.453	2.38	FlowTracker	
22-Nov-22	0.702	0.551	4.16	RS5 ADCP	
24-Apr-23	1.136	0.909	11.05	RS5 ADCP	
29-May-23	0.482	0.404	1.71	FlowTracker + RS5 ADCP	
16-Jun-23	0.414	0.349	1.17	FlowTracker	
21-Jul-23	0.354	0.303	0.73	FlowTracker	
11-Aug-23	0.328	0.283	0.69	FlowTracker	
22-Sep-23	0.488	0.405	1.70	FlowTracker	
17-Oct-23	0.733	0.577	4.27	RS5 ADCP	
14-Nov-23	0.616	0.489	2.98	RS5 ADCP	
14-Feb-24	0.414	0.330	0.97	Flo-Mate	
29-May-24	0.621	0.491	3.17	RS5 ADCP	
21-Jun-24	0.493	0.402	1.91	RS5 ADCP	
30-Jul-24	0.304	0.260	0.56	FlowTracker	
15-Aug-24	0.260	0.220	0.40	FlowTracker	
04-Sep-24	0.272	0.233	0.45	FlowTracker	
30-Oct-24	0.447	0.366	1.48	FlowTracker	
13-Nov-24	0.743	0.577	4.66	RS5 ADCP	
The following data points were excluded from the development of the Rating Curve					***Rationale***
22-Jan-20	0.500	xx	0.78	FlowTracker	Ice effects
28-Apr-20	0.845	0.660	5.73	ADCP StreamPro	Faulty Instrument
01-May-20	1.403	1.070	11.70	ADCP StreamPro	Faulty Instrument
24-Feb-22	n/a	0.357	0.83	FlowTracker	Ice effects
27-Feb-23	0.433	0.296	0.93	FlowTracker	Ice effects

105A_101_V3F RatingCurve_Cleaned_28Jan2025_AS

Notes:
1) Water Level (metres) for US and DS are measured with respect to the 2018 local datum and local datum, respectively.
2) Units of flow are cubic metres per second (m^3/s).
3) ADCP = Acoustic Doppler Current Profiler
4) ADCP StreamPro = Teledyne RD Instruments StreamPro (Rental)
5) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021
6) n/a = Not Available
7) Water level at the older station was elevated (~0.15 m) on 22-Jan-20 due to ice effects in the channel.

Table A6. V3G Data used to develop the Rating Curve

Date	Water Level (m)	Measured Flow (m^3/s)	Method	
23-Jul-20	1.070	1.35	FlowTracker	
18-Aug-20	0.843	0.33	FlowTracker	
06-Nov-20	1.313	3.35	FlowTracker	
09-Apr-21	1.411	4.71	RS5 ADCP	
10-Jun-21	0.893	0.52	RS5 ADCP	
28-Apr-22	1.757	9.70	RS5 ADCP	
19-May-22	1.367	4.11	RS5 ADCP	
22-Jun-22	1.228	2.69	RS5 ADCP	
25-Jul-22	1.368	4.11	RS5 ADCP	
30-Aug-22	1.443	5.30	RS5 ADCP	
27-Sep-22	1.358	4.02	RS5 ADCP	
25-Oct-22	1.188	2.36	RS5 ADCP	
24-Apr-23	1.841	11.33	RS5 ADCP	
29-May-23	1.116	1.72	RS5 ADCP	
16-Jun-23	1.028	1.10	FlowTracker	
21-Jul-23	0.956	0.73	FlowTracker	
01-Aug-23	0.841	0.36	FlowTracker	
11-Aug-23	0.927	0.64	FlowTracker	
22-Sep-23	1.107	1.71	RS5 ADCP	
17-Oct-23	1.376	4.34	RS5 ADCP	
14-Nov-23	1.245	3.02	RS5 ADCP	
23-Apr-24	1.724	10.07	RS5 ADCP	
29-May-24	1.272	3.12	RS5 ADCP	
20-Jun-24	1.164	2.10	RS5 ADCP	
30-Jul-24	0.938	0.70	RS5 ADCP	
16-Aug-24	0.880	0.42	RS5 ADCP	
28-Oct-24	1.072	1.51	RS5 ADCP	
13-Nov-24	1.397	4.57	RS5 ADCP	
The following data points were excluded from development of the Rating Curve				***Rationale***
25-Feb-21	0.957	0.60	FlowTracker	Ice effects
22-Oct-21	1.332	1.19	RS5 ADCP	Beaver effects
28-Feb-22	1.043	0.89	FlowTracker	Ice effects
01-Mar-23	1.040	0.89	FlowTracker	Ice effects
14-Feb-24	1.025	0.87	FlowTracker	Ice effects
04-Sep-24	0.967	0.47	RS5 ADCP	Beaver effects

105A_101_V3G Rating Curve_Cleaned_28Jan2025_ACS_AS

Notes:
1) Water Level (metres) is measured with respect to a local datum.
2) ADCP = Acoustic Doppler Current Profiler
3) Units of flow are cubic metres per second (m^3/s).
4) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021

Table A7. V1 Data used to develop the Rating Curves

Date	Water Level (m)	Measured Flow (m^3/s)	Instrument
14-Jun-19	0.337	5.07	FlowTracker
11-Jul-19	0.141	0.83	FlowTracker
22-Aug-19	0.137	0.84	FlowTracker
30-Oct-19	0.237	2.53	FlowTracker
31-Oct-19	0.230	2.28	FlowTracker
24-Mar-20	0.123	0.66	Flo-Mate
1-May-20	0.483	9.11	FlowTracker
23-Jul-20	0.165	1.23	FlowTracker
26-Feb-21	0.107	0.56	Flo-Mate
23-Jun-21	0.087	0.33	FlowTracker
21-Oct-21	0.140	0.88	FlowTracker
24-Feb-22	0.136	0.73	Flo-Mate
03-May-22	0.482	9.53	FlowTracker
30-Aug-22	0.250	3.17	FlowTracker
27-Sep-22	0.274	3.85	FlowTracker
25-Oct-22	0.192	2.02	FlowTracker
21-Nov-22	0.270	3.57	FlowTracker
28-Feb-23	0.133	0.80	FlowTracker
25-Apr-23	0.428	8.54	RS5 ADCP
14-Jun-23	0.145	1.02	FlowTracker
01-Aug-23	0.083	0.28	FlowTracker
10-Aug-23	0.101	0.44	FlowTracker
05-Sep-23	0.090	0.35	FlowTracker
17-Oct-23	0.271	3.89	FlowTracker
13-Nov-23	0.212	2.60	FlowTracker
13-Feb-24	0.134	0.73	Flo-Mate
24-Apr-24	0.424	8.36	RS5 ADCP
28-May-24	0.191	2.27	FlowTracker
19-Jun-24	0.175	1.57	FlowTracker
27-Aug-24	0.070	0.22	FlowTracker
29-Oct-24	0.140	0.97	FlowTracker
13-Nov-24	0.272	3.80	FlowTracker

105A_101_V1 RatingCurve_Cleaned_28Jan2025_AS

Notes:

1) Water Level (metres) is measured with respect to a local datum.
2) Units of flow are cubic metres per second (m^3/s).
3) ADCP = Acoustic Doppler Current Profiler
4) ADCP StreamPro = Teledyne RD Instruments StreamPro (Rental)
5) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021

Table A8. MUSF1 Data used to develop the Rating Curve

Date	Water Level (m)	Measured Flow (m^3/s)	Instrument	
30-Sept-21	0.910	3.17	RS5 ADCP	
29-Oct-21	0.837	2.00	RS5 ADCP	
21-Jun-22	0.966	4.59	RS5 ADCP	
25-Jul-22	1.085	8.39	RS5 ADCP	
29-Aug-22	0.855	2.21	RS5 ADCP	
26-Sep-22	1.084	6.68	RS5 ADCP	
24-Oct-22	0.962	4.00	RS5 ADCP	
15-Jun-23	0.790	1.16	FlowTracker	
20-Jul-23	0.811	1.15	FlowTracker	
01-Aug-23	0.734	0.60	FlowTracker	
26-Jun-24	0.893	2.97	RS5 ADCP	
26-Jul-24	0.795	1.33	RS5 ADCP	
25-Aug-24	0.703	0.44	FlowTracker	
05-Sep-24	0.725	0.44	FlowTracker	
29-Oct-24	0.843	1.97	RS5 ADCP	
The following data points were excluded from development of the Rating Curve				***Rationale***
21-Sep-23	0.926	2.15	Flo-mate	Interference from boat hull
16-Oct-23	1.167	7.12	Flo-mate	Interference from boat hull
16-Aug-24	0.734	0.26	RS5 ADCP	Unusual upstream wind effects

105A_101_MUSF1 RatingCurve_Cleaned_28Jan2025_AS

Notes:

1) Relative to BM1, with BM1 assigned an arbitrary gauge datum of 1.0 metres.
2) Units of flow are cubic metres per second (m^3/s).
3) ADCP = Acoustic Doppler Current Profiler
4) RS5 ADCP = RS5 ADCP purchased new by SEI in 2021

Appendix B

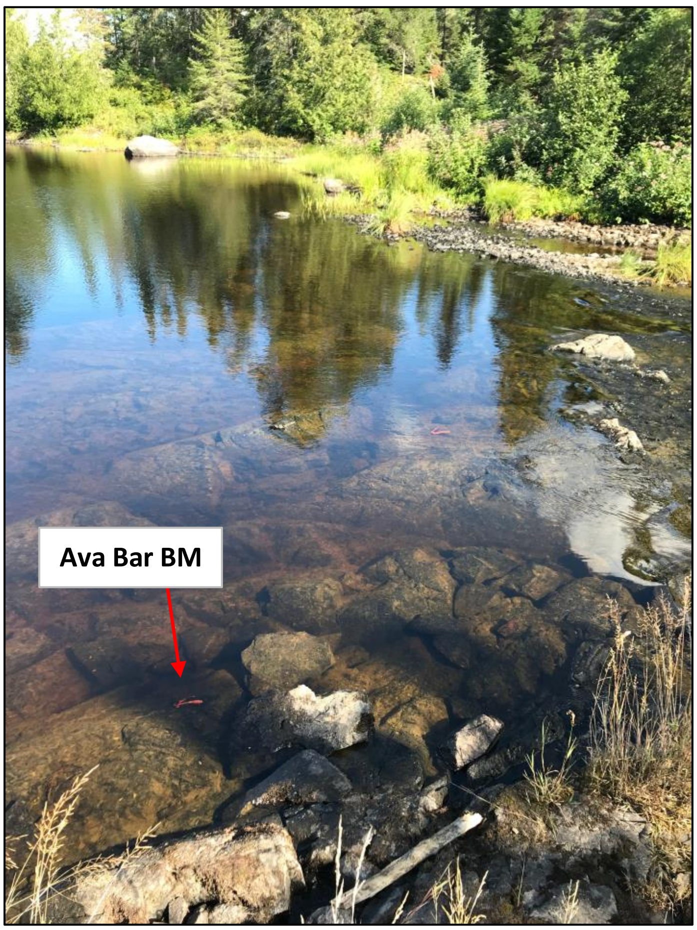
Benchmark Data for Ava, Beaverhouse, and York Lake Water Levels

Ava Lake Benchmark Information

Table B1 and Photos B1, B2, and B3 provide information on Ava Lake water level benchmarks used for monitoring purposes between 2018 and 2024. For geodetic lake water data (e.g., Table 3.8.1), the 2018 elevation datum has been used in this baseline hydrology report.

Table B1. Key benchmarks used at the Ava Lake Water Level Monitoring Station.

Benchmark→	"June 13-1"	Ava Bar
Description	Surveyor's pin installed in bedrock near rapids by Northland Technical Surveys in 2011	Submerged iron bar installed in bedrock below the low water level of Ava Lake, installed in 2012 by Northland Technical Surveys
2018 Elevation (m)	284.610	284.137
Source of 2018 Elevation Data	Agnico Eagle (Martyn Herrington), September 2018	Multiple optical surveys by SEI, 2018 to 2024
8 May 2024 Elevation Check (m)	284.636	not available
Source of 2024 Elevation Data	Hamel Arpentage (surveyors)	not applicable



R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Photos\2020\18Aug2020

Photo B1. Position of Ava iron bar used for water level measurements at Ava Lake.

Following are the photos of the "June-13-1" benchmark.

Photo B2. June 13-1 benchmark location at head of Ava Lake rapids.
N:\079 Queenston\079-01\Photos\AS Queenston 22 Nov 2012

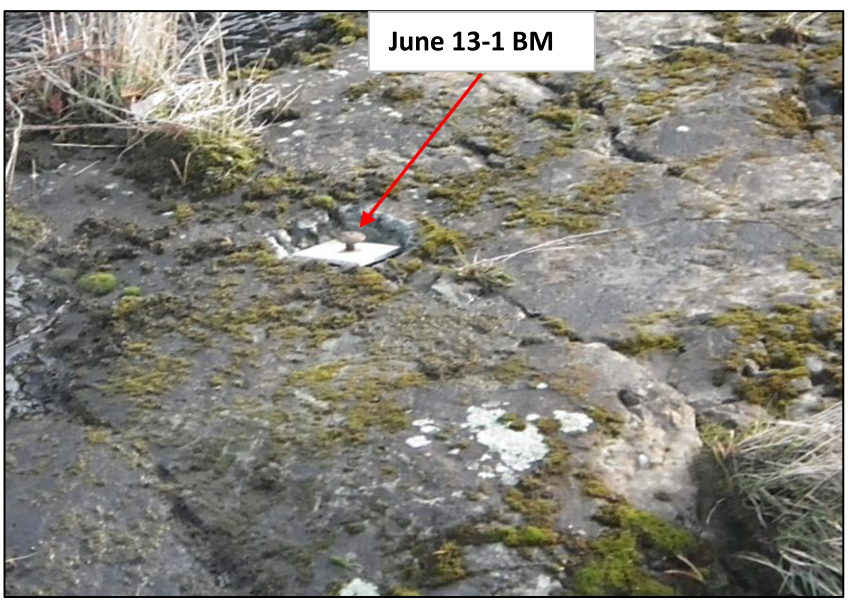


Photo B3. Close-up View of June 13-1 benchmark.

Beaverhouse Lake Benchmark Information

Two key benchmarks were used at the M1 station on Beaverhouse Lake (near the existing boat launch), as shown in Table B2 and Photos B4 and B5 (on the following pages).

Note that two sets of elevation data for BM4 and M1-C are reported in Table B2: one set from 2011/2012 and a second set based on surveying work carried out in 2018. A check measurement on BM4 was also carried out on 8 May 2024.

For flow gauging purposes, the 2011 Elevation datum has been used consistently at the M1 station since 2011 and 2012. That is, the M1-C iron bar was assigned an elevation of 285.162 m, based on repeated optical survey work that showed no movement of the iron bar relative to BM4. Water levels that are used for flow purposes such as rating curves (e.g., Figure 3.2.1) and resulting continuous derived flows, are converted to local elevations by subtracting 285 m from the water elevations. This both reduces error in the calculations (e.g., due to use of exponents in the rating equations) but also serves as a reminder that even survey-grade Global Positioning System ("GPS") elevation data are not accurate enough for flow gauging purposes. Optical surveying is better for achieving the sub-centimetre scale accuracy on local elevations required for gauging purposes.

For geodetic lake water level purposes (e.g., Table 3.9.1), all 2011-2024 data were reported with respect to the BM elevations measured in September 2018 by Agnico Eagle.

Table B2. Key benchmarks used at the M1 station on Beaverhouse Lake.

Benchmark→	BM4	M1-C
Description	Surveyor's pin installed in bedrock near rapids by Northland Technical Surveys in July 2011	Submerged iron bar installed in bedrock below the typical low water level of Beaverhouse Lake, installed in 2012 by Northland Technical Surveys
2011 (or 2012) Elevation (m)	285.834	285.162
Source of Elevation Data	Northland Technical Surveys (Ben Larose)	Multiple optical surveys by SEI, 2012 to 2024
2018 Elevation (m)	285.961	285.289
Source of 2018 Elevation Data	Agnico Eagle (Martyn Herrington), September 2018	Multiple optical surveys by SEI, 2018 to 2024
8 May 2024 Elevation Check (m)	286.004	not available
Source of 2024 Elevation Data	Hamel Arpentage (surveyors)	not applicable

On 8 May 2024, surveyors from Hamel Arpentage Inc. re-surveyed the BM4 benchmark elevation using survey-grade GPS technology. Their result (286.004 m) was more consistent with the 2018 elevation than the 2011/2012 elevation, but was also higher than the 2018 elevation by 0.043 m. This difference in elevations (0.043 m) is typical of data variability associated with survey-grade GPS technology, but it also indicates that the geodetic lake water levels are associated with uncertainties of at least ±0.04 m and likely ±0.05 m. If more accurate results are required, local surveying relative to a known arbitrary local elevation should be used (i.e., use the M1 BM4 benchmark).

Photo B4. Position of BM4 surveyor's pin installed near the rapids leaving Beaverhouse Lake.

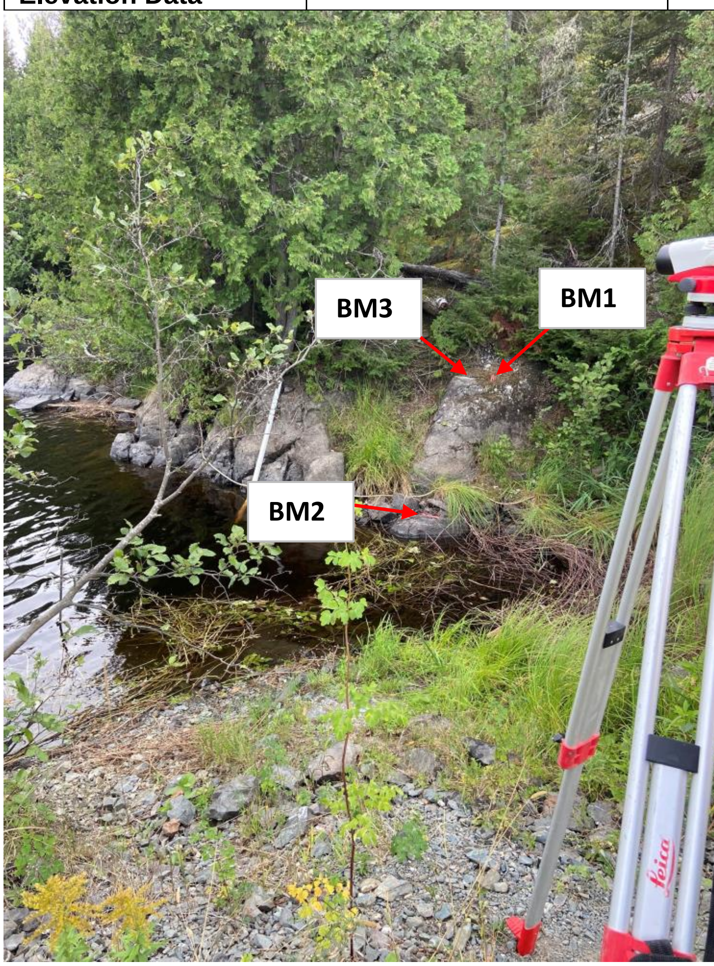
Photo B5. Position of M1-C submerged iron bar on the boat landing side of rapids.

York Lake Benchmark Information

Table B3 and Photo B6 provide information on York Lake water level benchmarks used for monitoring purposes between 2018 and 2024. For geodetic lake water data (e.g., Table 3.10.1), the 2019 benchmark elevation data for BM1 have been used in this report.

Table B3. Key benchmarks used at the York Lake Water Level Monitoring Station.

Benchmark→	BM1	BM2	BM3
Description	Vertical anchor bolt installed in bedrock by SEI in 2018	Vertical anchor bolt installed in bedrock by SEI in 2018	Surveyor's pin installed in bedrock by SEI in 2024
2018 Elevation (m)	282.272	281.016	not available
Source of 2018 Elevation Data	Agnico Eagle (Martyn Herrington), September 2018	Multiple optical surveys by SEI, 2018 to 2024	not applicable
2019 Elevation (m)	282.326	not available	282.275
Source of 2019 Elevation Data	Agnico Eagle (Martyn Herrington), October 2019	not applicable	SEI (16 August 2024 optical survey, tied into 2019 datum for BM1)
8 May 2024 Elevation Check (m)	282.292	not available	not available
Source of 2024 Elevation Data	Hamel Arpentage surveyors	not applicable	not applicable



R:\SEI\105 Agnico Eagle\105-101_Upper Beaver\09 - Hydrology\Photos\2024\8-August\York Lake

Photo B6. BM1, BM2, and BM3 benchmarks for water level monitoring at York Lake

Appendix C

Plots of Monthly Average Data for Flow and Lake Level Stations

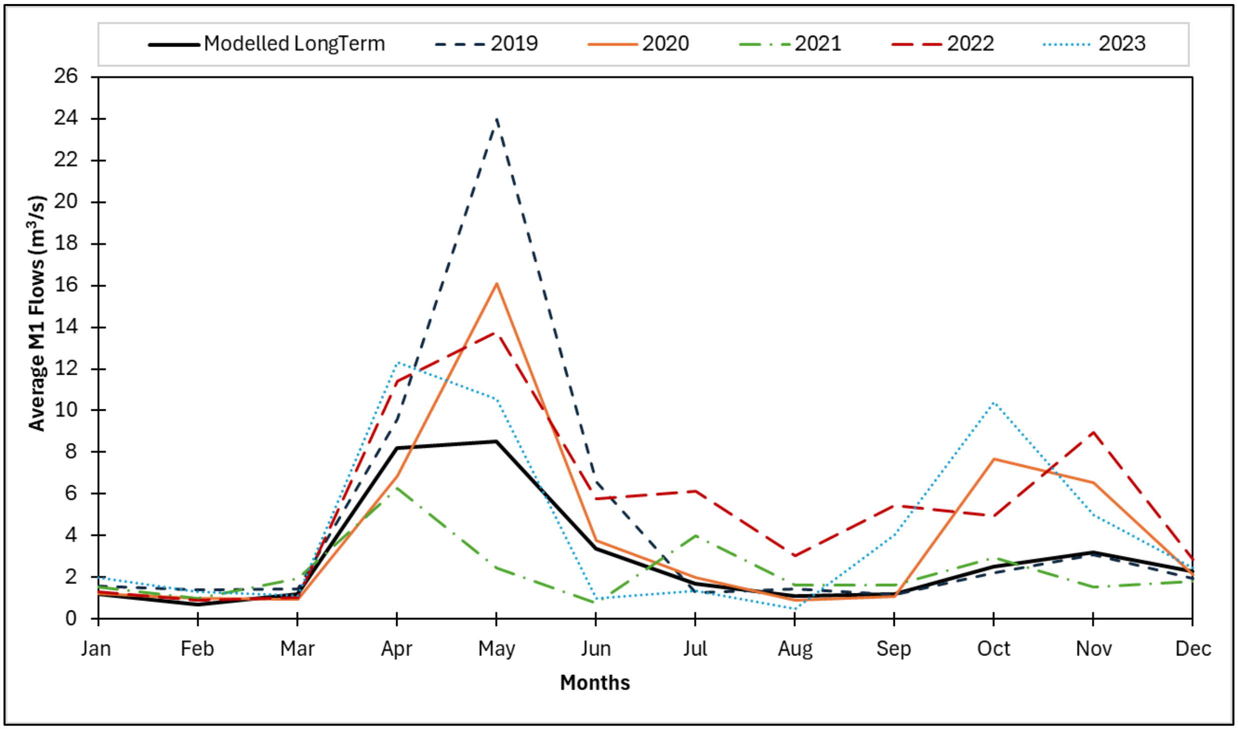


Figure C1. M1 Long-Term Average Monthly Flows and 2019-2023 Average Monthly Flows

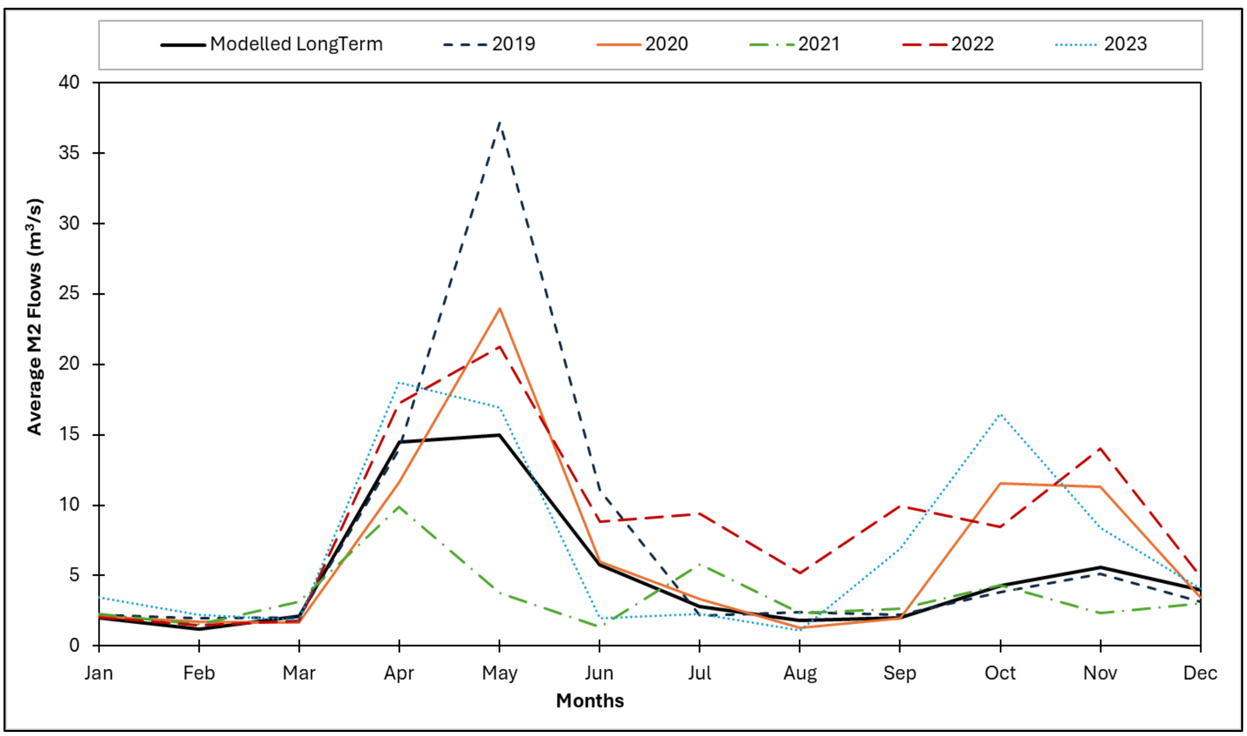


Figure C2. M2 Long-Term Average Monthly Flows and 2019-2023 Average Monthly Flows

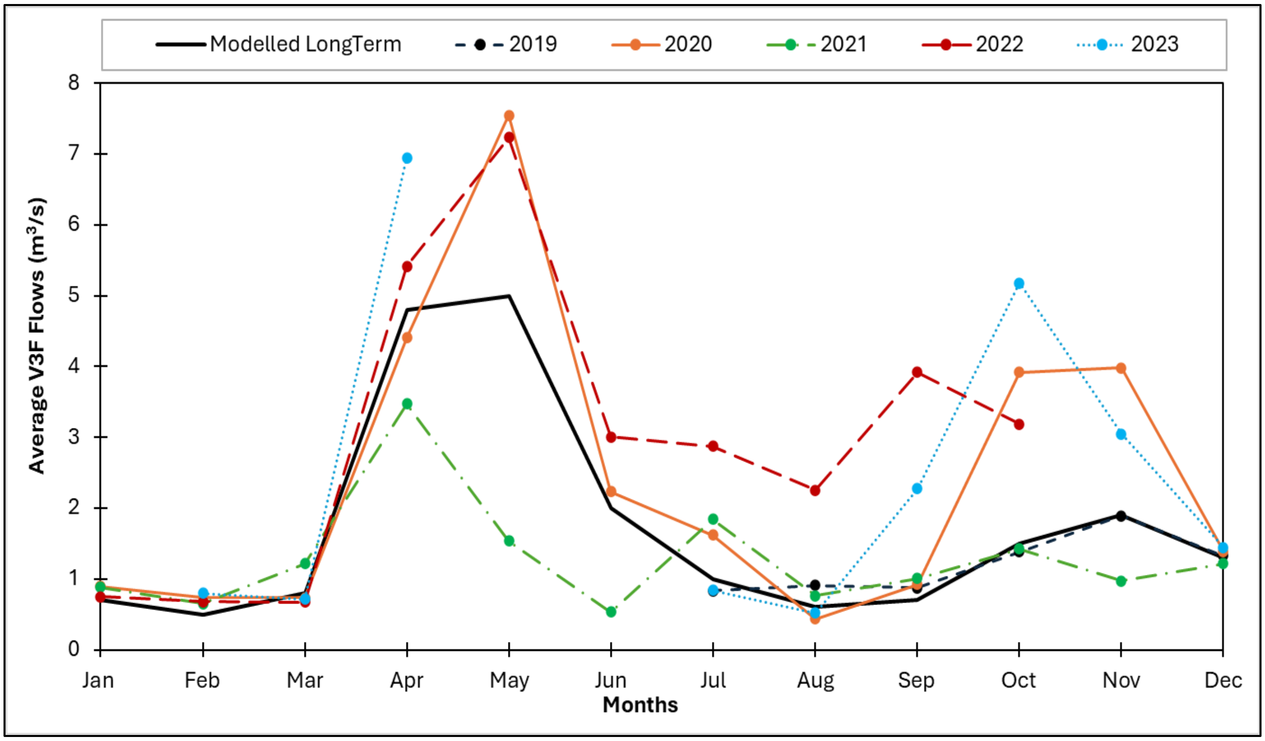


Figure C3. V3F Long-Term Average Monthly Flows and 2019-2023 Average Monthly Flows

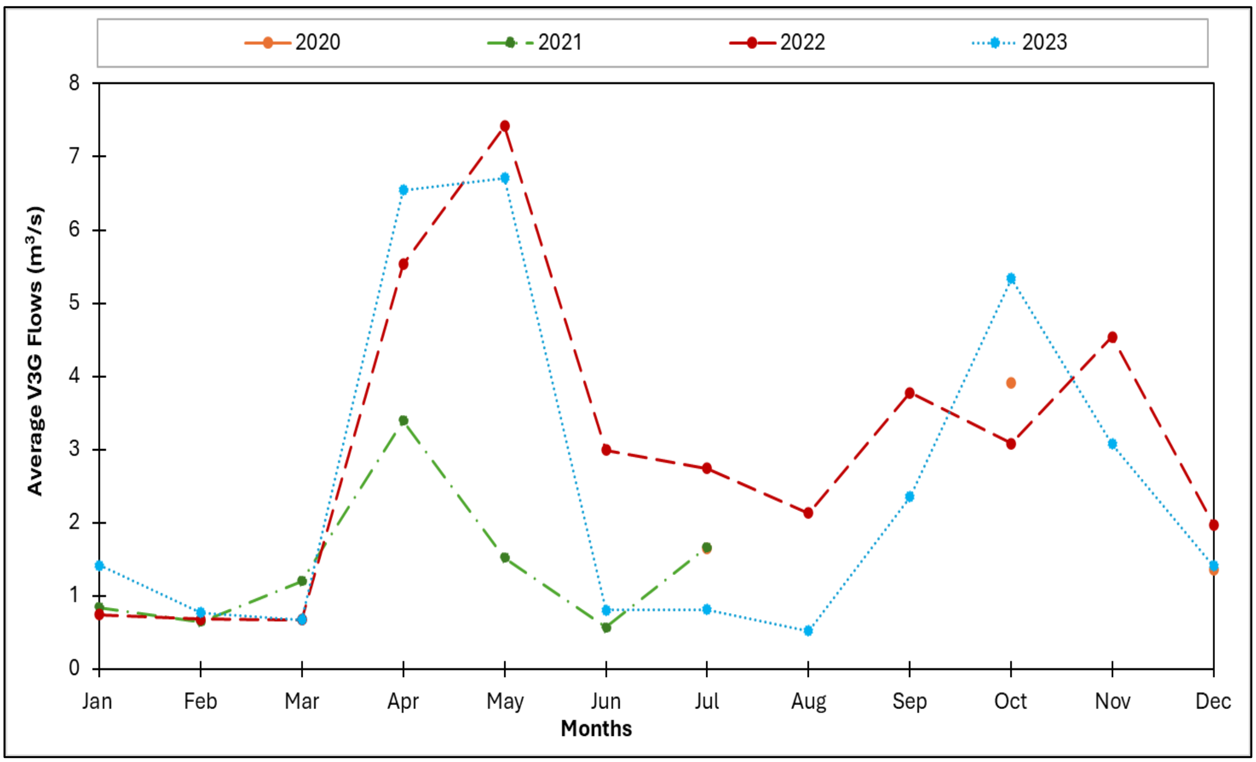


Figure C4. V3G 2020-2023 Average Monthly Flows

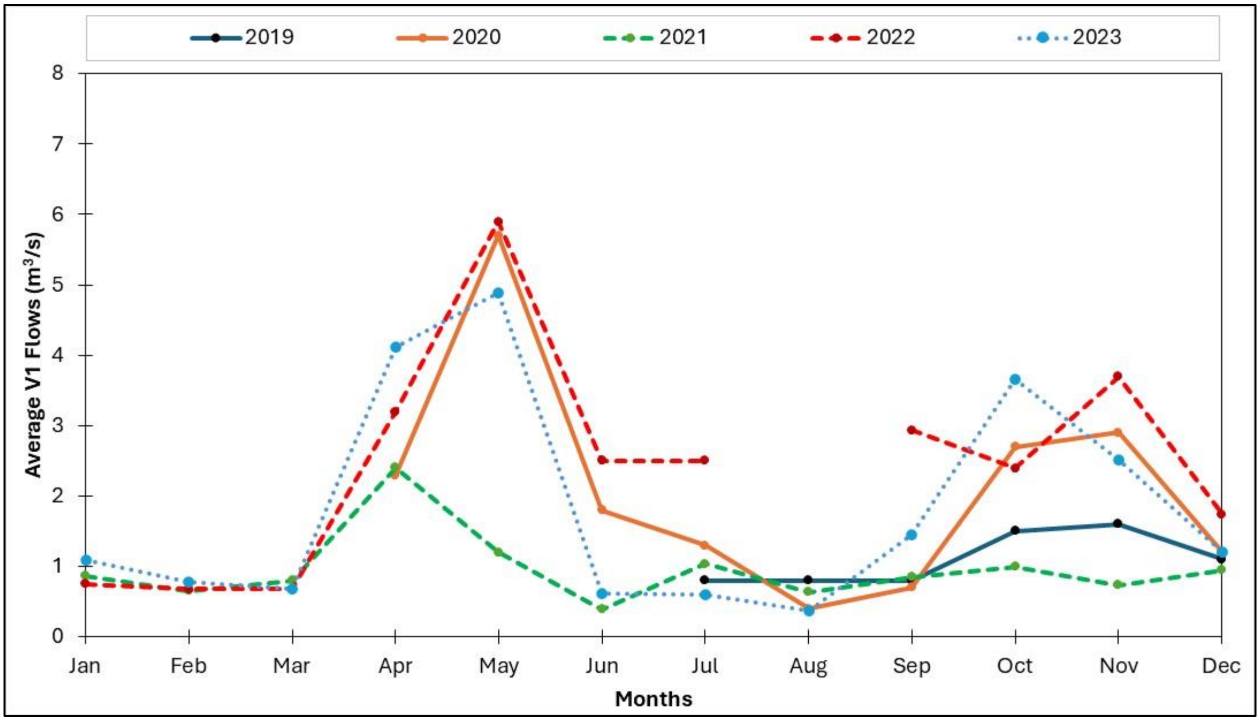


Figure C5. 2019-2023 Average Monthly Flows at V1.

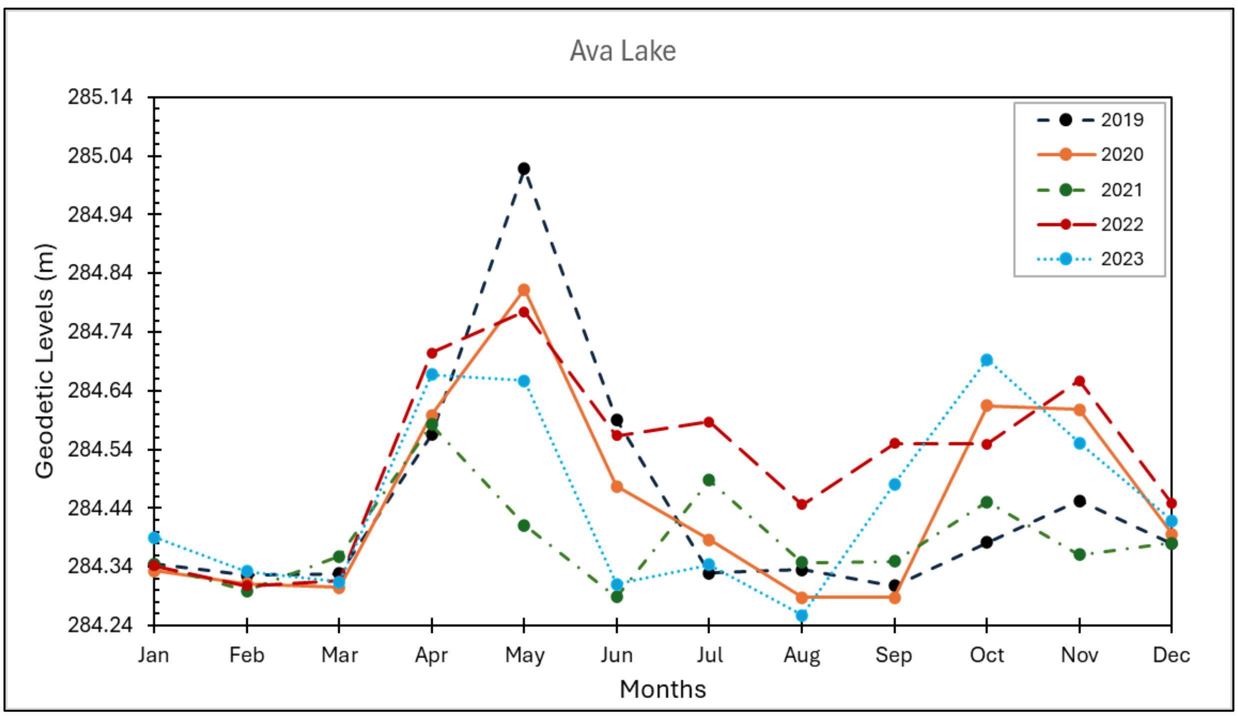


Figure C6. Ava Lake 2019-2023 Average Monthly Water Levels

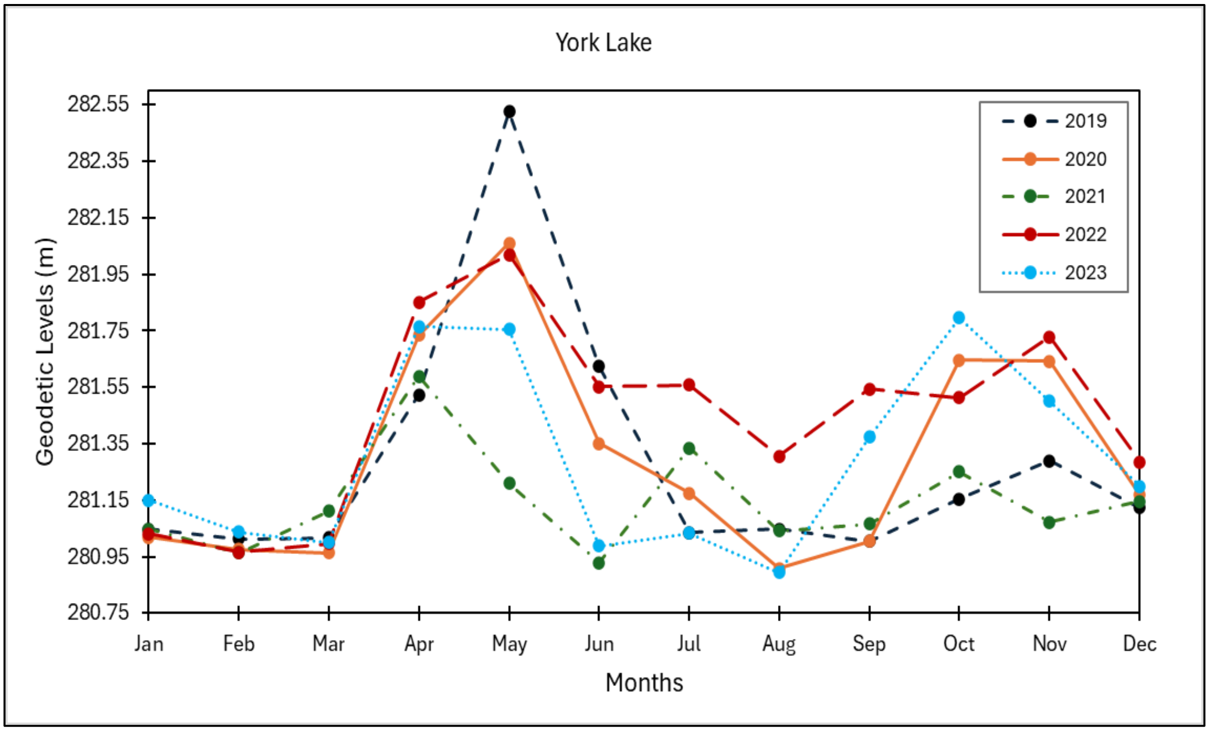


Figure C7. York Lake 2019-2023 Average Monthly Water Levels

Appendix D

2018 to 2024 Baseline Hydrometric Data
Provided in Electronic Format Only

Appendix E

2011 to 2013 Baseline Hydrometric Data
Provided in Electronic Format Only