REPORT

Integrated Water Resources and Natural Environment Monitoring, Triggers, and Mitigation Plan

for the Proposed CBM Caledon Pit/Quarry

Submitted to:

CBM Aggregates Ltd.

55 Industrial Street, Toronto, ON M4G 3W9

Submitted by:

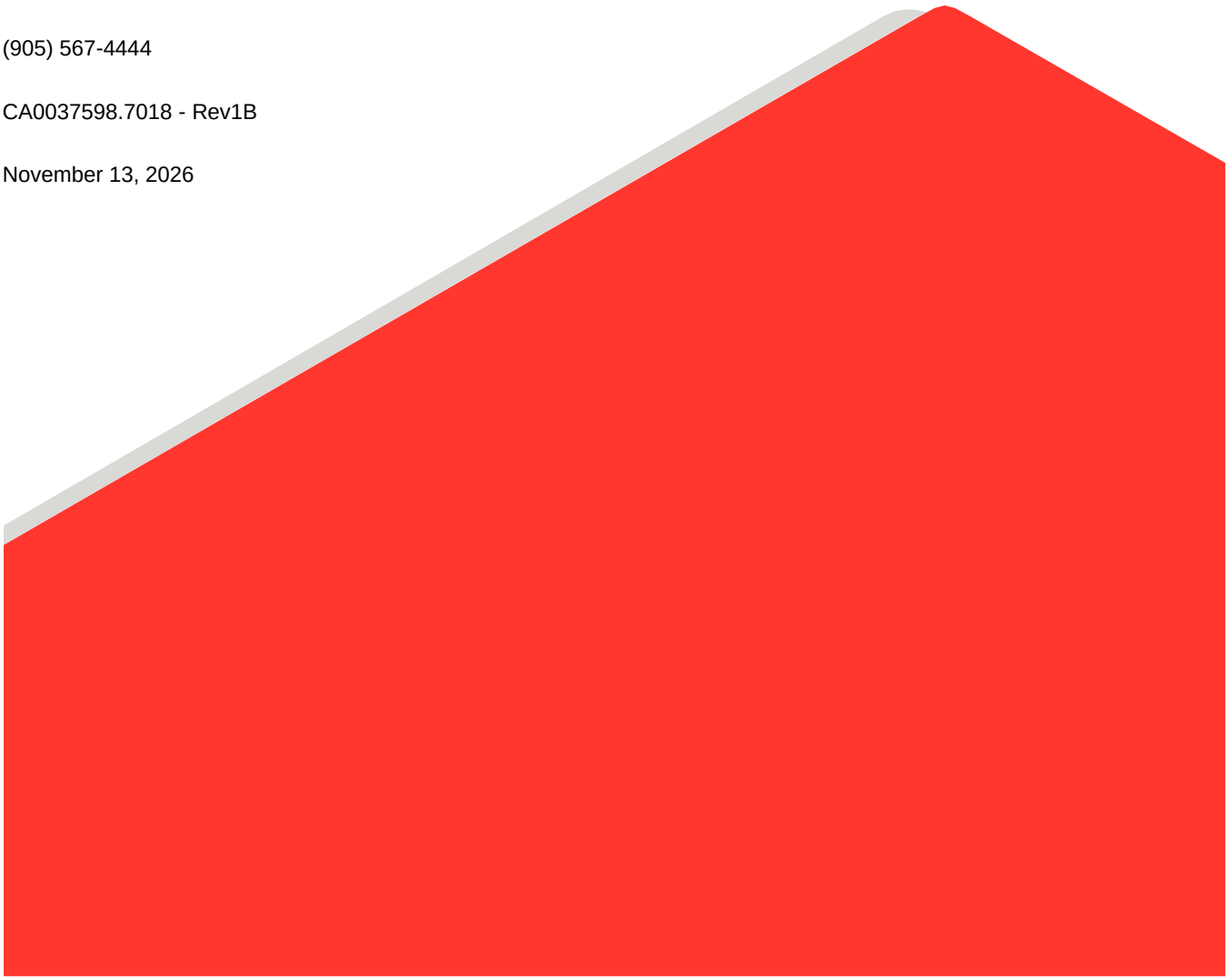
WSP Canada Inc.

6925 Century Ave., Suite 600, Mississauga, ON L5N 7K2

(905) 567-4444

CA0037598.7018 - Rev1B

November 13, 2026



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1.0 INTRODUCTION

An integrated hydrogeological, hydrological and natural environment Monitoring, Triggers, and Mitigation Plan for the proposed CBM Caledon Pit/Quarry has been developed to verify that no unanticipated negative impact will occur as a result of the operations of the Caledon Pit/Quarry. Technical studies have characterized the hydrology, hydrogeology, and natural environment on and surrounding the proposed CBM Caledon Pit/Quarry. These results of studies and proposed programs are as follows: 1) concluded that no negative impacts are anticipated to the natural environment; 2) established a monitoring program to verify the findings of these studies; 3) developed trigger levels to verify that no negative impact takes place; and, 4) identified potential mitigation in the event an unanticipated potential impact is indicated by the trigger levels.

Aspects of the Monitoring, Triggers, and Mitigation Plan have been developed in technical reports including the Water Report (WSP 2023a), the Natural Environment Report (WSP 2023b), the Water Report Addendum (WSP, 2025a), the Mitigation System Design Report (WSP 2025b), and in responses to comments received through the Aggregate Resources Act (ARA) licence application and the planning amendment application process. This Report consolidates the proposed monitoring, triggers, and potential mitigation measures proposed throughout these documents and refines the monitoring program with addition of monitoring location, trigger and mitigation details and the inclusion of supplementary ecological monitoring. This plan has been prepared by WSP, in consultation with Consor and GHD.

2.0 WATER RESOURCES MONITORING

Monitoring locations include monitoring wells and well nests (MW), surface water stations (SW), and surface water / mini-piezometer stations (SW/MP). The groundwater and surface water monitoring locations are shown on Figure 1 (following text) and the On-Site groundwater and surface water monitoring program is summarized in Table 1. The Off-Site groundwater and surface water monitoring program is summarized in Table 2. The program will consist of water level monitoring and temperature monitoring at some locations.

Monitoring points included in the hydrogeological and hydrological monitoring program include three types:

1) Trigger Monitoring Locations: Monitoring locations with assigned trigger levels, responses, and contingency mitigation options to verify that no negative unanticipated impact takes place;

2) Non-trigger Feature Monitoring Locations: Monitoring locations, without assigned trigger levels, which observe hydrological conditions in and around natural environment features to provide context to the interpretation of trigger conditions, subsequent investigations, and to support the effective application of contingency mitigation measures; and,

3) Non-trigger Monitoring Locations: Monitoring locations, without assigned trigger levels, which observe hydrological conditions to provide context to the interpretation of trigger conditions, subsequent investigations, and to support the effective application of contingency mitigation measures.

Groundwater hydrographs are presented in Attachment A which presents the water levels for Trigger Monitoring Locations. Additional monitoring locations within the extraction limits are included in the monitoring program, until their presence conflicts with operations (as noted in Table 1). At that time the monitoring points will be decommissioned and removed from the monitoring program. The monitoring program includes monitoring wells beyond the predicted influence of the quarry (based on the groundwater flow model (WSP, 2025)) to monitoring background aquifer conditions (as noted in Table 2).

Annual water quality sampling shall be performed at selected wells. Groundwater will be sampled in the shallowest piezometer of the well nest annually (spring) and analysed for general chemistry, nutrients, inorganics, metals, and petroleum hydrocarbons (PHC F1 to F4).

In addition to proposed hydrogeological monitoring, the licensee shall complete a follow-up door-to-door survey of private wells for properties within 1,000 metres of the licence area prior to below water extraction, to supplement and verify the MECP Water Well Information System (WWIS) information, to confirm neighbouring water users and confirm baseline conditions prior to below water extraction commencing, as specified on Sheet 4 of the Site Plans, Technical Recommendation 7.b. Landowner participation in this private well survey is voluntary. Wells with potential for impact (as identified in the Water Report (WSP 2023)) will be invited to participate in a voluntary private well monitoring program.

Table 1: On-Site Groundwater and Surface Water Monitoring Program

Name	Type	Easting	Northing	Monitoring Scope
MW20-01A/B	MW, NML	577459	4852268	Water level[1]
MW20-07A/B	MW, TML	578360	4853250	Water level[1]
MW20-08A/B	MW, TML	578010	4853575	Water level, water quality[1,6,7]
MW20-09	MW, TML	578344	4854157	Water level, water quality[1,6,7]
MW20-10A/B	MW, TML	577838	4854407	Water level, water quality[1,6,7]
MW20-11A/B	MW, NML	577672	4853921	Water level[1]
MW20-12A/B	MW, TML	577272	4854321	Water level, water quality[1,6,7]
MW20-14A/B	MW, NML	577576	4853100	Water level[1]
MW20-15A/B	MW, NTFM	576577	4853544	Water level, water quality[1,6]
MW20-15C	MW, NTFM	576577	4853544	Water level[1]
MW20-16A/B	MW, NML	576785	4853807	Water level[1]
MW20-17A/B	MW, NML	576752	4852966	Water level[1]
MW20-18	MW, NML	577058	4852659	Water level[1]
MW21-1-1	MW, NML	576882	4853485	Water level[1,4]
MW21-2-1	MW, NML	577279	4854021	Water level[1,4]
MW21-3-1	MW, NML	577872	4852814	Water level[1,4]
MW21-4-1	MW, NML	577793	4854211	Water level[1,4]
MW22-01	MW, NML	576782	4853808	Water level[1]
MW22-02A/B	MW, NML	576481	4853795	Water level[1]
MW22-02C	MW, NML	576478	4853794	Water level[1]
MW22-03A/B	MW, NML	576201	4854078	Water level[1]
PW22-01	MW, NML	576574	4853535	Water level[1]
MW-IT-01A/B/C	MW, TML	577201	4852516	Water level, water quality[5,6,7]
MW-IT-02A/B/C	MW, TML	577009	4852710	Water level, water quality[5,6,7]
MW-IT-03A/B/C	MW, TML	577352	4852364	Water level, water quality[5,6,7]
MW-IT-04A/B	MW, TML	577521	4852364	Water level, water quality[5,6,7]
MW-IT-05A/B/C	MW, TML	577614	4852195	Water level, water quality[5,6,7]
MW-IT-06 A/B	MW, TML	578068	4852428	Water level, water quality[5,6,7]
MW-IT-07A/B/C	MW, TML	577897	4852208	Water level, water quality[5,6,7]
MW-IT-08A/B/C	MW, TML	577781	4852080	Water level, water quality[5,6,7]
SW14/MP14	SW/MP, NTFM	578165	4855098	Water level and temperature[1,2]
SW22/MP22	SW/MP, NTFM	576800	4853125	Water level and temperature[1,2]
SW23/MP23	SW/MP, NTFM	576840	4853050	Water level and temperature[1,2]

Name	Type	Easting	Northing	Monitoring Scope
SW26	SW, NML	578155	4854320	Water level, temperature, and water quality[2,3]
SW27	SW, NML	578340	4854105	Water level and temperature[2]
SW29	SW, NTFM	577293	4854240	Water level and temperature[2,4]
SW30	SW, NTFM	577411	4854141	Water level and temperature[2,4]

Notes:
1. Groundwater level to be monitored by logger set to record on 15-min intervals, with quarterly logger downloads and quarterly manual measurements.
2. Surface water level and temperature to be monitored by logger set to record on 15-min intervals, with quarterly logger downloads and quarterly manual measurements.
3. Water discharge from the Settling Pond to be monitored as per requirements to be approved by the Ministry of the Environment, Conservation and Parks (MECP) based on the Permit to Take Water and Environmental Compliance Approval to be obtained by the Applicant prior to the initiation of any off-site discharge. The discharge shall be monitored for total suspended solids and temperature to ensure it meets the discharge objectives for those parameters, as specified in the Environmental Compliance Approval. Monitoring to commence following the construction of the Settling Pond.
4. These monitoring points only need to be monitored until they are required to be decommissioned to allow for on-site operations. Monitoring wells shall be decommissioned in accordance with MECP requirements.
5. Groundwater level to be monitored as per requirements to be approved by the MECP based on the Permit to Take Water and Environmental Compliance Approval to be obtained by the Applicant prior to the implementation of groundwater mitigation measures.
6. Groundwater will be sampled in the shallowest piezometer of the well nest annually (spring) and analysed for general chemistry, nutrients, inorganics, metals, and petroleum hydrocarbons (PHC) (F1 to F4).
7. Groundwater level data to be downloaded monthly at Trigger Monitoring Locations.
8. Monitoring Point Type Acronyms: MW is ‘Monitoring Well’, SW is ‘Surface Water’, MP is ‘Mini-Piezometer’, TML is ‘Trigger Monitoring Location’, NFML is ‘Non-trigger Feature Monitoring Locations’, and NML is ‘Non-trigger Monitoring Locations’.

Table 2: Off-Site Groundwater and Surface Water Monitoring Program

Name	Type	Easting	Northing	Monitoring Scope
MW20-02	MW, NML	577900	4852138	Water level[1,3]
MW20-03	MW, NML	578244	4851907	Water level, water quality[1,3,5,6]
MW20-04	MW, TML	578265	4852313	Water level, water quality[1,3,5,6]
MW20-05A/B	MW, TML	578423	4852713	Water level, water quality[1,3,5,6]
MW20-06A/B	MW, TML	578474	4852973	Water level, water quality[1,3,5,6]
MW20-13A/B	MW, TML	576873	4854473	Water level[1,3,6]
MW20-13C	MW, NML	576873	4854473	Water level[1,3]
MW20-19A/B	MW, NML	576907	4852000	Water level[1,3]
MW20-20A/B	MW, NML	576476	4852468	Water level[1,3]
MW20-20C	MW, NML	576476	4852468	Water level[1,3]
MW20-21A/B	MW, NML	576014	4852840	Water level[1,3]
MW20-22A/B	MW, NTFM	575785	4851966	Water level[1,3]
MW20-23A/B	MW, NTFM	576206	4851556	Water level[1,3]
MW20-23C	MW, NML	576206	4851556	Water level[1,3]
MW20-24A/B	MW, NML, Bkg	575338	4854342	Water level[1,3]
MW20-25A/B	MW, NML, Bkg	574854	4853900	Water level[1,3]
MW20-26A/B	MW, NML, Bkg	574374	4853638	Water level[1,3]
MW20-26C	MW, NML, Bkg	574375	4853638	Water level[1,3]
MW20-27A/B	MW, NML	575954	4853770	Water level[1,3]
MW20-28A/B	MW, NML, Bkg	576140	4854988	Water level[1,3]
SW4	SW, NML	574760	4852963	Water level and temperature[2,4]
SW5	SW, NML	575863	4853846	Water level and temperature[2,4]
SW8	SW, NML	576054	4851688	Water level and temperature[2,3]
SW10	SW, NTFM	579128	4850628	Water level and temperature[2,3]
SW11	SW, NML	578238	4851869	Water level and temperature[2,4]
SW12	SW, NML	576842	4854781	Water level and temperature[2,4]

Name	Type	Easting	Northing	Monitoring Scope
SW13B	SW, NML	577930	4854976	Water level and temperature[2,3]
SW15/MP15	SW/MP, NML	576562	4853501	Water level and temperature[1,2,3]
SW16/MP16	SW/MP, NML	576024	4852785	Water level and temperature[1,2,3]
SW17/MP17	SW/MP, NTFM	576488	4853803	Water level and temperature[1,2,3]
SW18/MP18	SW/MP, NTFM	576396	4853993	Water level and temperature[1,2,3]
SW19/MP19	SW/MP, NTFM	576226	4854106	Water level and temperature[1,2,3]
SW20/MP20	SW/MP, NTFM	576819	4853890	Water level and temperature[1,2,3]
SW21/MP21	SW/MP, NTFM	578215	4851865	Water level and temperature[1,2,3]
SW24A	SW, NML	578189	4854438	Water level and temperature[2,3]
SW25A	SW, NML	578079	4854484	Water level and temperature[2,3]
SW28	SW, NML	578237	4854518	Water level and temperature[2,3]
SW31	SW, NFML	578713	4853746	Water level and temperature[2,3]
SW32	SW, NFML	578810	4853589	Water level and temperature[2,3]
SW33/MP33	SW/MP, TML	578921	4853486	Water level and temperature[1,2,4]
SW34/MP34	SW/MP, NTFM	576877	4853888	Water level and temperature[1,2,4]
SW35/MP35	SW/MP, TML	578912	4853509	Water level and temperature[1,2,4]
SW36/MP36	SW/MP, TML	578905	4853536	Water level and temperature[1,2,4]
SW37/MP37	SW/MP, TML	578896	4853568	Water level and temperature[1,2,4]

Notes:
1. Groundwater level to be monitored by logger set to record on 15-min intervals, with quarterly logger downloads and quarterly manual measurements.
2. Surface water level and temperature to be monitored by logger set to record on 15-min intervals, with quarterly logger downloads and quarterly manual measurements.
3. Located on lands / owned controlled by the licensee.
4. Located on road right-of-way or Crown Land. Monitoring to be completed subject to permission by the applicable public authority.
5. Groundwater will be sampled in the shallowest piezometer of the well nest annually (spring) and analysed for general chemistry, nutrients, inorganics, metals, and PHC (F1 to F4).
6. Groundwater level data to be downloaded monthly at Trigger Monitoring Locations.
7. Monitoring Point Type Acronyms: MW is 'Monitoring Well', SW is 'Surface Water', MP is 'Mini-Piezometer', TML is 'Trigger Monitoring Location', NFML is 'Non-trigger Feature Monitoring Locations', NML is 'Non-trigger Monitoring Locations', and Bkg is 'background' monitoring locations.

3.0 NATURAL ENVIRONMENT MONITORING

Caledon Quarry Supplementary Ecological Monitoring

Context and Purpose

Ecological monitoring in this monitoring plan is designed to be supplemental monitoring of potential effects to ecological receptors (ecological trend monitoring) related to water dependent features.

The potential for change to ecological features, without control and mitigation, from pit and quarry operations is primarily associated with ecological features that have a hydric water regime that supports the form and function of the feature, namely watercourses (including seeps and springs) and wetlands

Watercourses

The evaluation of hydrological changes in the Credit River Valley, including the Credit River, its small reaches/inlets, and any seepage areas, can support the assessment of influence on natural environment features. Where a negligible change takes place to the hydrology of a feature, no negative impact is anticipated.

The geological conditions coupled with the location of the proposed Pit/Quarry within the Upper Aquifer, above the Credit River and the understanding of the scale and magnitude of predicted changes, provide confidence in the assessment that upward gradients for indicator species, Brook Trout, will not be negatively affected in the Credit River proper.

The hydrological and hydrogeological assessment of the seeps at various elevations along the slopes of the Credit River Valley concludes that although some localized areas of the Credit River Valley where seeps exist may realize changes to seep discharge volumes, groundwater seepage is predicted to be persistent in every reach of the Credit River slope area in every scenario considered, including Tributary 14.

This Monitoring, Triggers, and Mitigation Plan will be in place to verify that there are no unanticipated hydrological changes, and that there are no related unanticipated negative impacts to water dependent natural environment features in the Credit River Valley.

Wetlands

Water regime changes associated with quarry and pit operations have the most potential to influence the hydric-dependant wetland features. In most of Ontario, wetlands are acclimated to a variety of climate trends, sometimes subject to extended periods of drought for a few years while other periods of heavy rainfall may occur as well as years of a more balanced precipitation interval, these are seasonal, cyclical and long-term climatic variations. Wetlands are acclimated to these trends and in most cases maintain their wetland status, form and function. As such, the wetland form and function are resilient to some natural variability and allow for the opportunity to modify mitigation and operational activities in a practical time frame. Supplementary Wetland Ecological Monitoring is proposed for the wetland complexes and wetland parcels in proximity to the quarry, that is areas within zones of influence where mitigation has been designed and focused on features within the licensed area, on lands owned by CBM, and on lands in which CBM has long term monitoring agreements.

The purpose of ecological monitoring is to supplement and complement the water monitoring program by confirming that ecosystems remain viable and intact. Should water monitoring reveal potential undesirable changes to water regimes, either surface or subsurface, on-going ecological trend monitoring can be used to assess impacts and inform necessary modifications to mitigation and contingency initiatives.

Wetland Monitoring Plan

Wetlands near the Pit/Quarry are considered to be the best locations to monitor as they would realize the earliest effects from potential water regime changes. Further, by maintaining their function related to water, more distant wetlands will be offered the same level of protection.

There are two groupings of wetland based on the characterization of the features and the source of water contributions that maintain water hydric conditions. Wetlands to the north and west are assessed to be hydraulically isolated wetlands not strongly influenced by groundwater conditions while wetlands to the south, Cataract Southwest Wetland Complex, are assessed to have some potential connection to the groundwater conditions. The potential effect of groundwater drawdown zone of influence predicted to extend to features that have a groundwater connection are to the south, and southwest of the site. The proposed mitigation system described in the Mitigation System Design Report (WSP 2025) is implemented in the south and southwestern portion of the quarry to maintain groundwater levels in the vicinity of the Cataract Southwest Wetland Complex. The ecological monitoring is proposed in both wetland areas with potential influence and those hydraulically isolated from changes in groundwater conditions.

Note: ecological features (seeps) along the Credit valley slope and in the Credit River proper are discussed in the *Watercourses* section above.

1 - Southern Wetlands Units at Distance from the Pit / Quarry

- Two units of the Cataract Wetland Complex in the Concession block to the west of the pit / quarry. The wetlands are located in the area of influence and of the proposed Mitigation System, where analysis indicates, with mitigation, groundwater levels will remain within their range naturally occurring conditions. There are no catchments within the proposed extraction footprint that report to these wetland features. The nearest portion of the Cataract wetland extends partially into lands owned by CBM beyond the licence limit.

2 - Northern and Western Wetlands Units Proximal to the Pit / Quarry

- Coulterville Wetland complex PSW – the wetland is hydraulically isolated from the bedrock aquifer by a thick till unit and no significant catchment within the Pit/Quarry extraction limit, partial ownership by CBM.
- The northwest corner of the pit / quarry licence area – hydraulically isolated groundwater condition with a small portion of the wetland receiving limited surface catchment contribution from within the pit / quarry extraction limit, owned by CBM.

The 3 wetland units described above which are located within land owned by CBM or lands in which CBM has access permission and are coincident with water monitoring Stations are proposed for Supplementary Wetland Ecological Trend Monitoring, locations as illustrated on Figure 2.

Wetland Vegetation Monitoring Method

The three wetland units are representative of the area to the south that is associated with features connected to groundwater and wetlands to the north and west that are isolated features not significantly connected to the groundwater bedrock aquifer.

Monitoring of the floristic composition of these features is proposed using the following transect method. This linear method is useful in the earlier assessment of potential reduction in the extent of wetland (wetland form) as the transect are align with one terminus toward the periphery of the wetland edge and the other toward the interior of the feature.

A single 100 m transect shall be established in each of the noted wetlands as illustrated on Figure 2.

A reflective T-bar shall be used to mark the start and end points, and flagging tape used to demarcate the centre line at 10 m intervals along the transect. Vascular plants within 1 m of the center line of the transect shall be identified along the length of the transect, and the abundance for each species estimated using definitions provided in the Ecological Land Classification (ELC) for Southern Ontario manual (Lee *et al.* 1998):

- **Rare:** Only one to a few individuals in the area of interest.
- **Occasional:** Scattered individuals throughout a community or represented by one or more large clumps of many individuals.
- **Abundant**: Referring to a plant that is represented throughout the polygon or community by large numbers of individuals or clumps. Likely to be encountered anywhere in area of interest. Usually forming > 10% ground cover.

- **Dominant**: A plant with the greatest cover or biomass within a plant community and by large numbers of individuals. Visually more abundant than other species in the same layer forming > 10% of the ground cover and >35% of the vegetation cover in any one layer.

In addition, the Floristic Quality Index (FQI) shall be calculated to provide a quantitative evaluation of botanical quality. The FQI is the product of Mean Coefficient of Conservatism (CC) and the square root of the area's plant richness (Swink and Wilhelm 1994).

Fixed Sample Plots

Fixed sample plots shall also be established at varying distances from the end of each transect. Each plot shall be 10 m x 10 m in size with corners demarcated by metal rebar, as illustrated on Figure 3. Within each plot, vascular plant species shall be identified, and the percent cover of each species within each vegetation layer shall be estimated visually. Photographs shall be taken at the center of each fixed sample plot and compared to overall plot conditions from year to year.

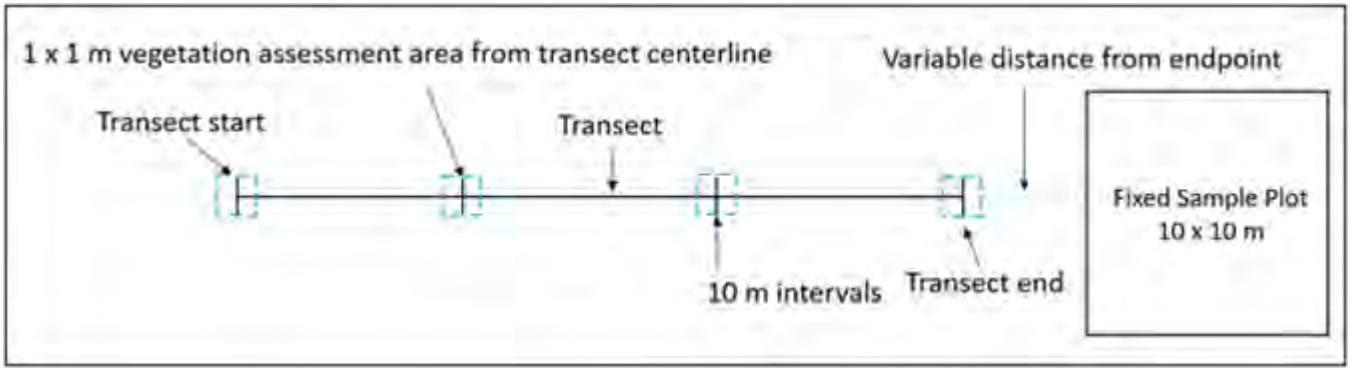


Figure 3: Schematic of Vegetation Monitoring Plot Layout

A weighted mean of Coefficient of Conservatism (CC) and Coefficient of Wetness (CW) shall be calculated for each vegetation layer based on species cover, and for the overall plot. The CC and CW are based on information from the Floristic Quality Assessment System for Southern Ontario (Oldham et al. 1995). CC is a measure of habitat specificity / tolerance, and ranges in value from 0 (tolerant of a wide range of habitats) to 10 (very habitat specific) (see Table 3). CW is an indicator of wetland or upland affinity, ranging in value from +5 (upland) to –5 (obligate wetland) (see Table 4).

Mean CW and CC values shall then be calculated based on sampling data, starting with baseline surveys at the commence of operation prior to significant dewatering being implemented and compared to subsequent monitoring years during operations. These data provide indications of wetland condition changes in association with surface and groundwater levels, and climatic events. Total species richness and the weighted percentage of native species shall also be calculated for the overall plot. In addition to vascular plants, the percentage of standing water, organic detritus, and bare substrate shall also be estimated within each fixed sample plot. This information shall be used to compare to subsequent monitoring years.

Table 3: Coefficient of Conservatism (CC) Values Index

CC	RANK	DESCRIPTION
0 to 3	Tolerant	Found in a wide variety of plant communities, including disturbed sites.
4 to 6	Moderately Conservative	Typically associated with a specific plant community but tolerate moderate disturbance.
7 to 8	Conservative	Typically associated with a plant community in an advanced successional stage that has undergone minor disturbance.
9 to 10	Highly Conservative	Typically displaying a high degree of fidelity to a specific plant community or a narrow range of synecological parameters.

Adapted from Oldham *et al.* 1995.

Table 4: Coefficient of Wetness (CW) Values Index

CW	RANK	DESCRIPTION
- 5	OBL	**OBLIGATE WETLAND**: Occurs almost always in wetlands under natural conditions (99% probability)
- 4	FACW+	**FACULTATIVE WETLAND**: Usually occurs in wetlands, but occasionally found in non-wetlands (67-99%)
- 3	FACW	
- 2	FACW-	
- 1	FAC +	**FACULTATIVE:** Equally likely to occur in wetlands or non-wetlands (34-66%)
0	FAC	
1	FAC -	
2	FACU+	**FACULTATIVE UPLAND**: Occasionally occurs in wetlands, but usually occurs in non-wetlands (1-33%)
3	FACU	
4	FACU-	
5	UPL	**UPLAND**: Occurs almost never in wetlands under natural conditions (<1%)

Adapted from Oldham et al. 1995.

Timing and Schedule of Wetland Monitoring

Long term ecological monitoring is proposed to be completed once per year at the peak of the growing season (i.e., June-July). Baseline – 2 survey years within the first four years of operation starting with baseline surveys at the commencement of operations prior to significant dewatering being implemented.

Operations – every year for the first six years of the operation of the mitigation system.

Every five years thereafter for the life of the quarry.

Amphibian Monitoring

In addition to the floristic wetland monitoring, fauna monitoring is also proposed at key locations that can offer insights into the overall health of wetland critical zones, in particular amphibian breeding ponds.

Wildlife monitoring in wetlands is focused on amphibian surveys, which are excellent indicators of the health of the wetland area and water regime trends that could be affecting wetland function. Although wetland vernal pools with hydroperiods that would support amphibian recruitment in the immediate proximity of the quarry were not observed, wildlife monitoring where anuran activity may occur will be initiated to provide data comparisons. Based on call count variability, the preferred method for the Caledon site is egg mass surveys completed when climatic conditions offer pooling opportunities. The egg mass survey method can be instrumental in identifying anuran from Salamander egg masses based on whether eggs are on an attachment site, the number of eggs in an egg mass as well as, in most cases, the character of the outer gelatinous casing.

Egg mass surveys are proposed in all three of the noted wetlands where vernal water is available in the early season when amphibian breeding commences including salamander breeding activity. In addition, egg mass surveys are proposed in a pond previous identified as wetland #5 described as a rural pond surrounded by a marsh meadow. This pond is permanent yet not connected to a fish source which prevents predator fish from compromising amphibian breeding and this amphibian habitat is proximal to the quarry, an ideal environment for ongoing surveys.

The location of the selected egg mass surveys are illustrated on Figure 2. Table 8b includes the survey method and assessment of the data.

Baseline egg mass survey will involve two survey years within the first four years of operation. starting with baseline surveys at the commencement of operations prior to significant dewatering being implemented.

Operations – every year for the first six years of the operation of the mitigation system.

Every five years thereafter for the life of the quarry.

For each of the above years, 2 spring surveys will be undertaken, one at spring thaw when salamanders are recorded in the province to be actively breeding, and one survey during the peak anuran breeding period (1st week May).

In the event that egg mass surveys confirm that there is no salamander breeding active at the vernal pools after the 6 years of the consecutive monitoring, commenced at the operation of the mitigation system, a proposal to end these surveys will include justification for discontinuing monitoring to be submitted to the MNR for review and approval if deemed appropriate.

Aquatic Habitat Monitoring

The documented condition of Tributary 14 indicates that fish use and fish habitat functions are spatially limited and primarily restricted to the lower reaches. During the assessment period, the tributary offered limited features capable of supporting critical life-history functions or sustaining large numbers of fish. Based on field investigations, Tributary 14 is not considered unique or critical to the broader Credit River fishery, as comparable and more suitable habitat is widely available within the watershed.

Although Tributary 14 currently provides limited fish habitat function, monitoring of water levels and established trigger levels, temperature, and ecological conditions will be completed to verify the impact assessment. Ecological monitoring at EM1 will include observations of fish presence and activity, as well as physical tributary characteristics relevant to fish habitat. Fish habitat mapping has been completed within the area shown on Figure 2.

Fish habitat condition is an important indicator of aquatic ecosystem health and water-regime trends that may affect habitat availability and function. Habitat characteristics, including wetted width, depth, flow conditions, substrate composition, and in-stream cover, will continue to be recorded to assess fish habitat function.

Ecological monitoring of fish habitat conditions will be completed monthly from March to August, and quarterly throughout the remainder of the year, beginning with baseline surveys at the start of operations and before significant dewatering is implemented.

Monitoring will occur annually during the first five years of the groundwater mitigation system operation. Monitoring will then continue every five years for the life of the proposed pit / quarry.

If ecological monitoring confirms that fish habitat conditions have remained stable after five consecutive years of monitoring following mitigation system operation, a proposal to discontinue the surveys may be submitted to the MNR for review and approval, where appropriate. The proposal will include supporting rationale for ending the monitoring program.

Additional details of the triggers and response process is offered in Section 4.2.4 and Table 9.

4.0 TRIGGER LEVELS AND POTENTIAL MITIGATION PLAN

Where there is potential for unanticipated impact to hydrologically sensitive receptors trigger levels, trigger levels have been established to proactively identify the conditions which would precede an impact, and proposed mitigation measures have been identified. Sections 4.1 to 4.3 provide details for each receptor and Section 4.4 summarizes the monitoring, trigger levels, and contingency mitigation measures.

4.1 Cataract Southwest Wetland Complex Water Level Trigger and Mitigation Plan

As described in the Mitigation System Design Report (WSP 2025b), to mitigate the potential effects on natural features and groundwater users to the south of the proposed CBM Caledon Pit / Quarry during the operational phases, the Mitigation System shall be constructed, as detailed on the Site Plans, to maintain groundwater levels within the range of their natural pre-extraction seasonal variations. The effectiveness of the measures shall be verified prior to commencing extraction that requires protection by the Mitigation System by adding water to the infiltration trenches and observing appreciable changes in water levels in the network of monitoring wells. Cataract Southwest Wetland complex is comprised of shallow marsh and swamp thicket features

The results of groundwater flow modeling have indicated that downgradient well users or surface water features will be protected when the design water levels are maintained. Trigger water levels for each trench zone have been determined from baseline water level monitoring data, accounting for seasonal variability and climatic variability.

4.1.1 Mitigation System Trigger Protocol

Trigger water levels have been established using baseline information prior to the influence of the proposed CBM Pit/Quarry on water levels in the vicinity of the Mitigation System.

The Mitigation System trigger levels will be implemented as shown on Figure 4 and detailed as follows:

1) Groundwater levels will be measured on monthly frequency at the selected monitoring wells aligned with each zone of the Mitigation System;
2) Daily average groundwater levels will be considered in the establishment and evaluation of groundwater level triggers;
3) Groundwater levels will be compared to trigger levels, and a level meeting a trigger condition verified with an additional field measurement within five business days of their receipt;

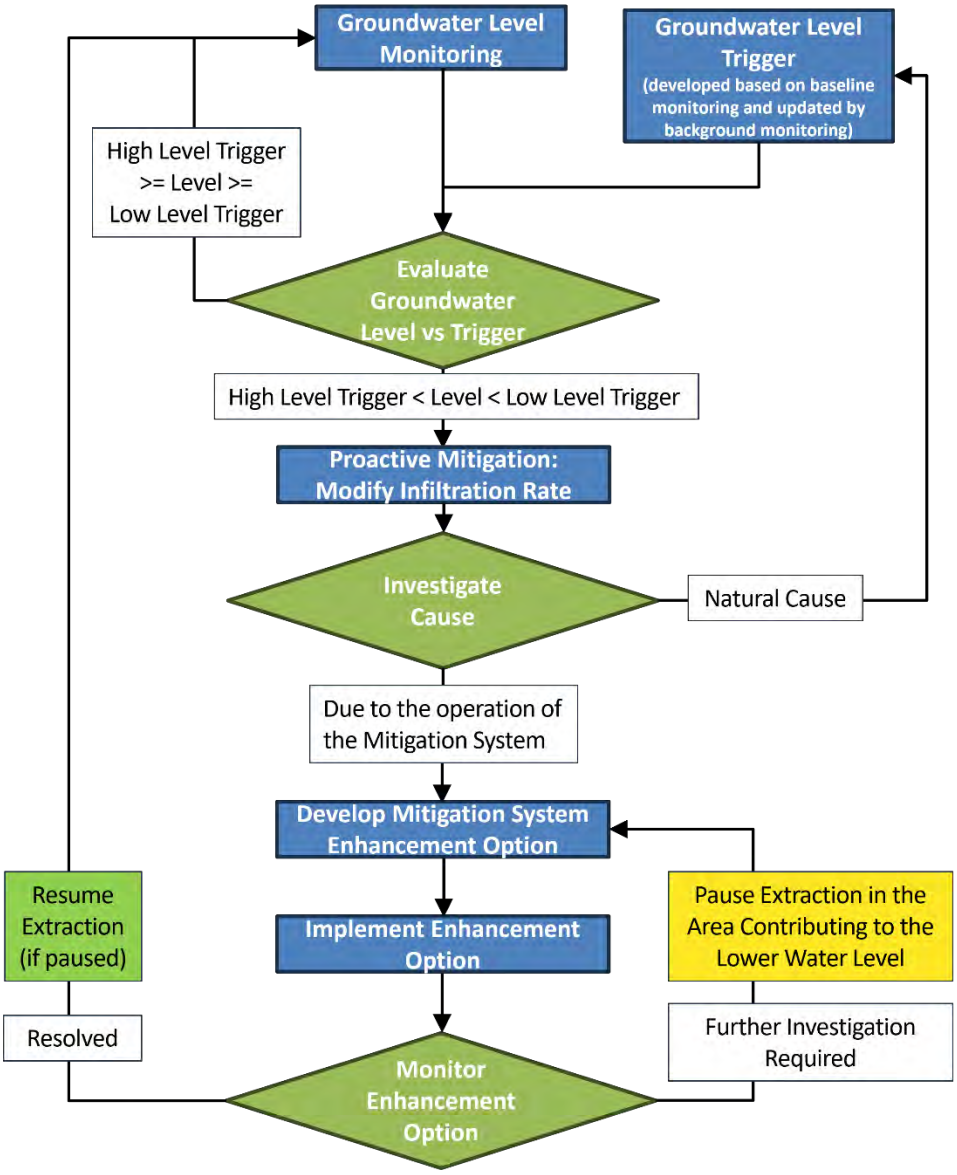


Figure 4: Cataract Southwest Wetland Complex Trigger Level Implementation Flow Chart

4) In the event that an observed daily average groundwater level meets a trigger condition the following steps will be taken:

   a. Proactive contingency mitigation will be implemented by modifying the infiltration rate within one week of the observation of groundwater level below a trigger level;

   b. The MNR will be notified of the trigger condition within one week;

   c. An investigation will be conducted to identify the cause of the observed water level meeting a trigger condition and the results of the investigation shared with the MNR within one month of the notification;

      i. In the event that the observed groundwater level is the result of naturally occurring conditions (such as a prolonged period with low precipitation leading to lower groundwater levels observed

at background monitoring locations, identified on Table 2), the groundwater level triggers may be adjusted to reflect the range of naturally occurring conditions;

ii. In the event that the observed groundwater level observed is the result of the Mitigation System not operating as intended, options to enhance the mitigation system performance will be developed (as discussed in Section 4.1.3) and the MNR consulted. The following will occur:

    1. The preferred option shall be implemented;
    2. Groundwater levels shall be monitored to verify the effectiveness of the Mitigation System enhancement and the restoration of groundwater levels to trigger levels;
    3. In the event that the preferred option is not successful in restoring groundwater levels to the trigger levels, an additional Mitigation System enhancement option will be identified in consultation with the MNR and quarrying in the area contributing to the lowered water level conditions will be temporarily paused until the mitigation is designed and constructed; and
    4. Monitoring of groundwater levels and implementation of enhancement options, in consultation with the MNR, will continue until the trigger condition is resolved. At that time, quarrying will resume (if it had been previously paused).

4.1.2 Mitigation System Trigger Level

To maintain naturally occurring water levels, trigger levels are set equal to the mean minus one standard deviation baseline observed level in each season. Daily average groundwater levels will be considered in the establishment and evaluation of groundwater level triggers from the shallowest monitoring well which observes the water table throughout the monitoring period, including MW-IT-01B, MW-IT-02B, MW-IT-03B, MW-IT-05B, MW-IT-06B, and MW-IT-07B. Groundwater level triggers are consistent throughout the phases of operations with the exception of Phase 5, in which Mitigation System zones 1 and 2 are operated at levels 2 m and 3 m, respectively, above the minimum observed level in each season to mitigate groundwater level changes in the aquifer until the construction of Mitigation System zones 3 to 6.

Lower groundwater level triggers are equal to the mean minus one standard deviation of groundwater levels in each period at each selected monitoring well (averaged daily). To account for wells where the distribution of observed water levels is skewed to the right, mean minus one standard deviation is taken to equal the 16th percentile of groundwater levels (which assumes the normal distribution and is more conservative for right skewed water level distributions). Seasonal periods are established with consideration of effectively matching the pre-development groundwater seasonal patterns during ecologically sensitive periods of the year. To this end, monthly time periods are applied during April to September and quarterly in the fall and winter.

High trigger groundwater levels are applied in trench zones where there is structure with a residential dwelling basement near the infiltration trench. The high trigger is equal to the ground surface elevation minus three meters and is applied to the nearest monitoring well between the infiltration trenches and the basement. The high trigger levels are higher than the maximum observed water levels in monitoring wells, so the natural range of groundwater levels can be maintained below the high trigger levels. In general, the system will be operated within the range of naturally occurring conditions and it is not anticipated that the high trigger levels will be exceeded under normal operations.

Example low trigger groundwater levels for each season in each zone of the Mitigation System are presented in Table 5, based on data collected between installation in the spring of 2024 and December of 2025 (presented in Attachment A). Trigger levels will be updated based on continued baseline monitoring of water levels in the vicinity of the Mitigation System prior to the start of aggregate extraction operations.

Table 5: Example Calculation of Mitigation System Trigger Levels (masl)

Mitigation System Zone	Trigger Monitoring Well		High Trigger	Lower Trigger Level						
			Jan - Mar	Apr	May	Jun	Jul	Aug	Sep	Oct - Dec
1[1]	MW-IT-02B	402.0	393.9	394.9	394.7	394.2	393.9	393.9	393.8	393.8
2[1]	MW-IT-01B	-	390.2	393.3	392.8	392.3	391.6	391.1	390.7	390.1
3	MW-IT-03B	-	390.2	393.2	392.7	392.3	391.6	391.1	390.7	390.1
	MW-IT-04B	394.0	-	-	-	-	-	-	-	-
4	MW-IT-05B	-	390.0	392.6	392.4	392.1	391.5	391.0	390.8	390.1
	MW-IT-04B	394.0	-	-	-	-	-	-	-	-
5	MW-IT-06B	-	390.3	391.9	391.2	391.0	390.6	390.2	389.9	389.9
	MW-IT-08B	398.0	-	-	-	-	-	-	-	-
6	MW-IT-07B	-	389.7	392.2	391.6	391.4	390.9	390.5	390.4	389.8

Notes:
1. During Phase 5 of Operations, Zone 1 and Zone 2 will be operated at a level 2 m and 3 m, respectively, above their seasonal Trigger Levels presented above until zones 3 to 6 are operational (as discussed in Section 6 of the Mitigation System Design Report (WSP 2025b)).

4.1.3 Mitigation System Contingency Measures

In the event that an observed groundwater level is below the trigger level for a zone of the Mitigation System and the subsequent investigation identifies that the observed groundwater level results from the Mitigation System not operating as intended, options will be identified to enhance the Mitigation System and restore groundwater levels to the trigger levels. It is expected that an immediate action would be to increase the infiltration rate until the level is above the trigger level or to perform additional maintenance on the infiltration trenches. Other potential mitigations include enhancing the grout zone by additional infill grouting, use of injection wells, enhancing the slurry wall, and rehabilitating the quarry face by the placement of low permeability backfill, and pausing extraction in the area contributing to the lowered water level conditions. Preferred enhancement options will be identified in consultation with the MNR following the investigation.

4.2 Credit River Valley Water Level Trigger and Mitigation Plan

4.2.1 Credit River Valley Trigger Protocol

The Credit River Valley Trigger Plan will verify that no unanticipated hydrological changes take place, and therefore that there are no related negative impacts to the Credit River Valley. To ensure the prompt identification of any trigger condition being met and to distinguish between a short-term fluctuation and a long-term trend, early detection trigger levels are proposed. When an early detection trigger level is observed, monitoring frequency is proactively increased to identify a potential trigger condition. Selected trigger locations include ten monitoring wells between the Credit River Valley and the proposed pit/quarry to verify that hydrogeological and hydrological changes are as anticipated. Wells selected as trigger locations include: MW20-04, MW20-05A, MW20-06A, MW20-07A, MW20-08A, MW20-09, MW20-10A, MW20-12A, and MW20-13A, and are shown on Figure 1. The groundwater levels will be reviewed and the following protocol used for the evaluation of trigger levels will be implemented:

1) Groundwater levels will be measured on monthly frequency at the selected monitoring wells aligned with each zone of the Mitigation System;

2) Daily average groundwater levels will be considered in the establishment and evaluation of groundwater level triggers;

3) Groundwater levels will be compared to early detection trigger levels and to high and low trigger levels and a level meeting an early detection trigger level or a trigger condition verified with an additional field measurement within two weeks of their collection;

4) In the event, that observed levels exceed the early warning trigger level proactive monitoring frequency shall be implemented: increasing the monitoring frequency from monthly to bimonthly and the trigger evaluation from within two weeks to within one week;

5) In the event that an observed daily average groundwater level meets a trigger condition, the following steps will be taken:

    a) The MNR shall be notified within 1 week of the identification of the trigger condition;

    b) A prompt investigation into the cause of the observed groundwater levels will be conducted and the findings will be submitted to the MNR (within 1 month of the notification). If extraction activities are identified to be the cause of the observed groundwater level changes, then a supplemental impact assessment of the potential of unanticipated negative impact to natural environment features will be prepared and submitted to the MNR;

    c) In the event that the observed groundwater level is the result of naturally occurring conditions (such as a prolonged period with low precipitation leading to low groundwater levels observed at background monitoring locations, identified on Figure 1), the groundwater level triggers may be adjusted to reflect the range of naturally occurring conditions; and,

    d) If potential for negative impact is identified, mitigation measures will be selected in consultation with the MNR. Potential mitigation measures could include the refinement of the design of settling ponds to enhance infiltration, use of managed aquifer recharge (such as injection wells, infiltration trenches, ground surface infiltration systems (“soaker hoses”), or pausing extraction in the area contributing to the lowered water level conditions), and the construction of low permeability barriers (such as low permeability backfill placed on the quarry walls, grouting the bedrock, or the use of slurry walls in the overburden).

    e) In the event that the preferred option is not successful in restoring groundwater levels to the trigger levels, an additional enhancement option will be identified in consultation with the MNR and quarrying in the area contributing to the lowered water level conditions will be temporarily paused in the area contributing to the lower water level until the mitigation is designed and constructed; and

6) The groundwater flow model shall be compared to observed data bi-annually during operations.

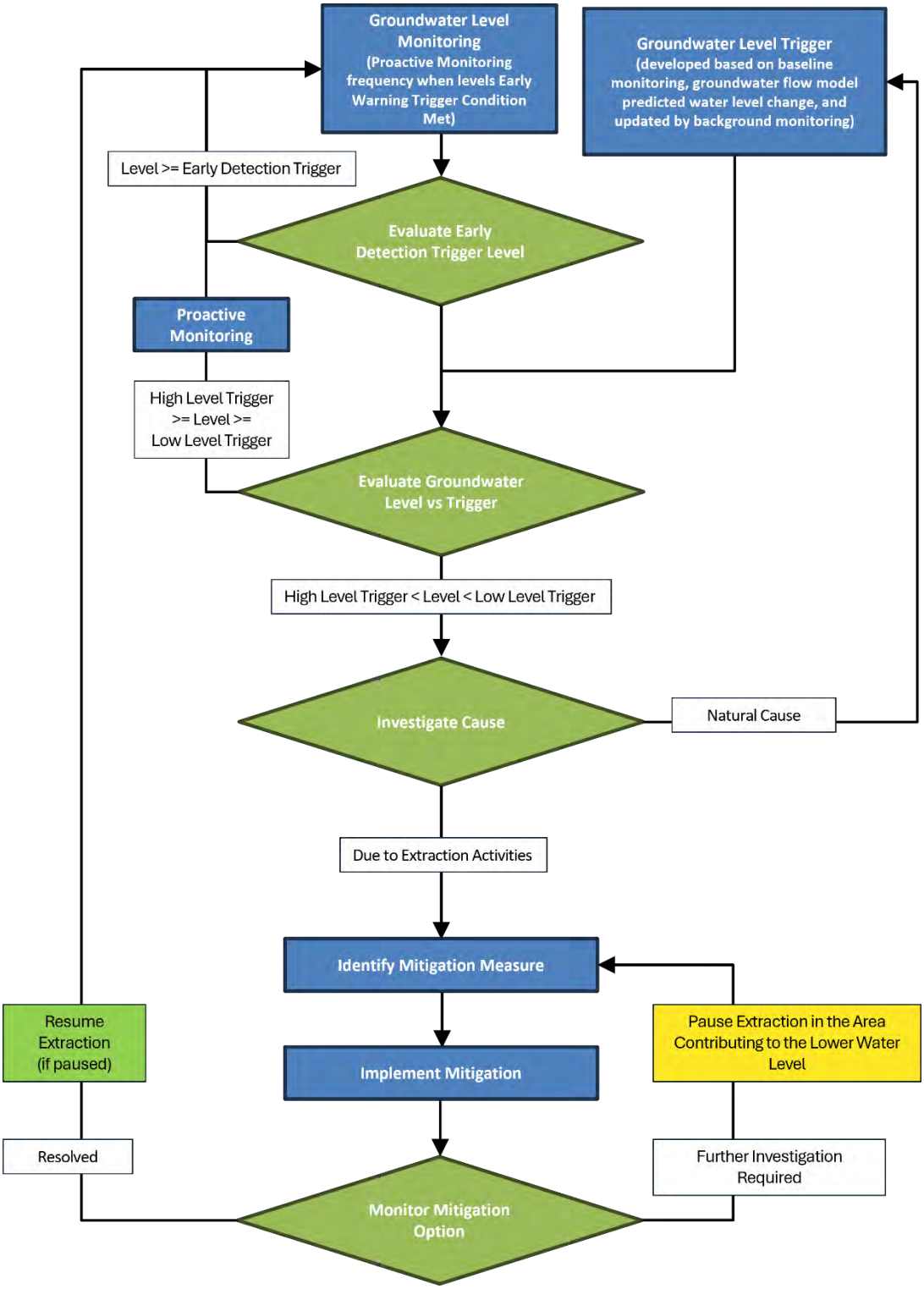


Figure 5: Credit River Valley Groundwater Level Trigger Flow Chart

4.2.2 Credit River Valley Trigger Levels

Groundwater level triggers are established using observed groundwater level data prior to extraction and predicted water level changes to verify that no unanticipated change to hydrological conditions takes place. Groundwater level data up to the time of extraction is used to establish a range of pre-extraction naturally occurring groundwater levels in selected monitoring wells between the proposed CBM Caledon Pit/Quarry and the Credit River Valley;

1) Prior to extraction, the groundwater flow model will be used to predict water level change (throughout the operational period) at each selected monitoring well (Table 6);
2) The range of pre-extraction naturally occurring groundwater levels will be established for each selected monitoring well;
    a) Daily average groundwater levels shall be considered in the establishment and evaluation of groundwater triggers;
3) Selected wells include: MW20-04, MW20-05A, MW20-06A, MW20-07A, MW20-08A, MW20-09, MW20-10A, MW20-12A, and MW20-13A. The locations of these wells are presented on Figure 1;
4) The range of predicted operational levels (defined by an Upper Trigger Level and a Lower Trigger Level) for each selected monitoring well is calculated by subtracting the predicted water level change from range of pre-extraction naturally occurring groundwater levels (i.e., a range of operational levels is established);
5) Early Detection Trigger Levels are equal to the mean minus one standard deviation of water level observations in a monitoring well (conservatively, assuming a normal distribution, this is taken to be the 16th percentile) minus the maximum predicted drawdown (from Table 6).

Predicted drawdown at each groundwater level trigger monitoring well are presented in Table 6 (as predicted by the most recently updated model, detailed in the Mitigation System Design Report (WSP 2025b)). Hydrographs of groundwater levels in the well nests selected as trigger locations are presented in Attachment A, Figures A8 to A17. Based on data collected between 2020 and 2025, example calculations of the minimum and maximum daily average groundwater levels are identified and the groundwater level trigger ranges for each monitoring well are calculated in Table 7. Upper Triggers Levels are equal to maximum observed groundwater level minus minimum predicted groundwater drawdown. Lower Trigger Levels are equal to the minimum observed groundwater level minus maximum predicted groundwater drawdown. Trigger levels will be updated based on continued baseline monitoring of water levels in the vicinity of the Credit River Valley monitoring locations prior to the start of aggregate extraction operations.

Table 6: Predicted Groundwater Drawdown (m)

Well ID	Phase0	Phase1	Phase2	Phase3	Phase4	Phase5	Phase6	Phase7	Rehab	Minimum	Maximum
MW20-04	0.00	0.35	0.48	0.55	0.19	0.31	-0.07	-0.04	0.19	-0.07	0.55
MW20-05A	0.00	0.35	0.37	0.43	0.35	0.39	2.31	1.92	1.34	0.00	2.31
MW20-06A	0.00	0.37	0.38	0.39	0.38	0.40	2.90	1.98	1.35	0.00	2.9
MW20-07A	0.00	0.68	0.7	0.74	0.72	0.75	5.56	3.62	2.29	0.00	5.56
MW20-08A	0.00	0.92	0.89	0.9	0.91	0.92	3.10	2.25	1.15	0.00	3.1
MW20-09	0.00	0.57	0.86	0.86	0.86	0.86	0.86	0.56	0.43	0.00	0.86
MW20-10A	0.00	0.30	0.30	0.29	0.25	0.25	0.29	0.49	0.30	0.00	0.49
MW20-12A	0.00	0.54	1.08	0.76	0.41	0.41	0.44	1.93	0.96	0.00	1.93
MW20-13A	0.00	0.08	2.95	0.31	0.09	0.08	0.09	0.18	0.09	0.00	2.95

Table 7: Example Calculation of Groundwater Level Trigger Ranges (masl)

Well ID	Minimum Observed Level	Maximum Observed Level	Early Detection Trigger Level	Lower Trigger Level	Upper Trigger Level
MW20-04	388.7	391.4	388.4	388.2	391.5
MW20-05A	392.2	396.2	390.2	389.9	395.8
MW20-06A	396.1	399.3	393.4	393.2	398.9
MW20-07A	401.1	403.9	395.9	395.5	403.2
MW20-08A	403.7	406.7	400.8	400.6	405.8
MW20-09	395.8	398.6	395.1	395.0	398.2
MW20-10A	399.6	402.9	399.5	399.2	402.6
MW20-12A	405.4	409.3	403.9	403.4	408.9
MW20-13A	410.5	413.0	407.8	407.5	412.9

4.2.3 Credit River Valley Contingency Mitigation Measures

As a contingency, in the event that an observed groundwater level is outside of the predicted range of groundwater levels resulting in an unanticipated hydrological change as a result of aggregate extraction that may cause a potential negative impact, potential mitigation measures can be introduced as outlined in this Section. The Significant Wildlife Habitat Mitigation Support Tool (MNRF 2014) specifically addresses mitigation strategies under Index # 30 Seeps and Springs for aggregate development:

> **AGGREGATE AND MINE DEVELOPMENT**
>
> **Mitigation Options**
>
> '...For aggregate extraction operations, it may be possible to direct dewatering areas first to a settling pond and then to an infiltration basin that will recharge the seeps or springs. Hydrogeological studies will be required to determine impacts upon seeps or springs. It may not be possible to mitigate the impacts of extraction below the water table on seeps or springs during the operation phase of a pit or quarry. In these cases, the significance of the aggregate resources must be weighed against the significance of the seeps and springs, as both features are considered worthy of protection or use under the Provincial Policy Statement. In some cases, seeps and springs might be maintained by pumping into artificial recharge wells or by establishing an impermeable barrier around the pit or quarry.'

As recommended by the MNRF (2014), potential contingency mitigation measures include:

- The refinement of the design of settling ponds to enhance infiltration and support groundwater levels;
- Pausing extraction in the area contributing to the lowered water level conditions;
- Use of managed aquifer recharge (such as injection wells, infiltration trenches (including construction of planned infiltration trenches prior to the anticipated timing or construction of additional infiltration trench zones), or ground surface infiltration systems ("soaker hoses")); and,
- The construction of low permeability barriers (such as low permeability backfill placed on the quarry walls, grouting the bedrock, or the use of slurry walls in the overburden).

4.2.4 Tributary 14 Trigger Protocol and Trigger Levels

The purpose of the Tributary 14 triggers is to verify that no unanticipated hydrological changes take place, and that therefore there are no related negative impacts to the Credit River fishery. Selected trigger locations include four surface water monitoring stations in the mapped fish habitat within Tributary 14: SW33, SW35,

SW36, and SW37, which are shown on Figure 18. The surface water depth will be reviewed and the following protocol used for the evaluation of trigger levels will be implemented:

1) The range of pre-extraction naturally occurring surface water depth will be established for each selected surface water station;
   a. Daily average surface water depth shall be considered in the establishment and evaluation of groundwater triggers; and
   b. Observed water depths of less than 2 cm are considered to be a near dry condition.

2) Trigger levels for each month during the critical period (March to August) are set equal to the minimum surface water depth of naturally occurring water depth or to the ecologically allowable minimum (2 cm), whichever is less; and,
   a. Where near dry conditions are observed (<2 cm of water depth), triggers are established and evaluated in dry days per month, where the trigger level is equal to the maximum number of near dry days per month.
   b. The trigger levels are calculated by a Qualified Person to reflect naturally occurring conditions, with notification of the MNR upon updates. Any adjustment will be reported in the annual water monitoring report (see Drawing 4 of 5 Note O.7 g) that is submitted to MNR, MECP, Town of Caledon, and CVC.

3) Following the identification of a surface water depth below a trigger level:
   a. The MNR shall be notified within one week;
   b. An investigation of the cause of the surface water level below a trigger level shall be conducted and reported to the MNR within one month of the notification. In the event that extraction is identified as the cause of the surface water depth observed below the trigger level, appropriate Contingency Mitigation measures will be identified, designed, constructed, and monitored to verify their effectiveness;

4) Contingency Mitigation options include: the modification of the settling ponds to enhance infiltration, use of managed aquifer recharge (such as injection wells, infiltration trenches, ground surface infiltration systems (“soaker hoses”), and the construction of low permeability barriers (such as low permeability backfill placed on the quarry walls, grouting the bedrock, or the use of slurry walls in the overburden), and may involve temporarily pausing extraction in the area contributing to the lowered water level conditions until the mitigation is designed and constructed.

The trigger level values are calculated by a Qualified Person to reflect naturally occurring conditions, with notification of the MNR upon updates. Any adjustment will be reported in the annual water monitoring report (see Drawing 4 of 5 Note O.7 g) that is submitted to MNR, MECP, Town of Caledon and CVC.

Table 8 and Table 9 include a summary of the proposed Tributary 14 triggers and contingency mitigation plan.

4.3 Private Well User Trigger and Mitigation Plan

Water supply wells in the area of the quarry will be protected. The potential for impacts to private well users is evaluated in Section 9.3.3. of the Water Report (WSP 2023), additional clarifications are provided in Section 2.3 of the Water Report Addendum (WSP 2025a), and the Site Plans include commitments to perform a second private well survey (Sheet 4, Technical note 7.b.) and the Well Complaint Response Protocol (Sheet 4, Technical note 7.f.). The criteria set out in the revised Water Report for considering a private water well to

have the potential to be impacted, are 1) there is an expected >10% reduction in water level in the well and, 2) that there is <10 m of remaining water column. The 10 m criterion was selected in part to account for both seasonal fluctuations in groundwater levels and for drawdown during typical pump operation. A well complaint response process is proposed in the event that a water supply is impacted and includes steps to mitigate the impact on the private well user.

To verify that no unanticipated impact to private well users occur, monitoring, triggers, and contingency mitigation will be implemented as required.

4.3.1 Monitoring of Private Wells

As specified on Sheet 3 of the Site Plans, Technical Recommendation 7.b., prior to below water extraction, the licensee shall complete a follow-up door-to-door survey of private wells for properties within 1,000 metres of the licence area , to supplement and verify the MECP Water Well Information System (WWIS) information, to confirm neighbouring water users and confirm baseline conditions prior to below water extraction commencing. Wells with potential for impact (as identified by the criteria contained in Section 9.3.3. of the Water Report (WSP 2023)) will be invited to participate in the Voluntary Private Well Monitoring Program, including monitoring of water levels using a datalogger and quarterly downloads. Water levels observed in private wells will be used to assess available drawdown (non-pumped water elevation minus the pump elevation) and operating drawdown (water elevation at the end of a typical pumping cycle minus the pump elevation). Landowner participation in this private well survey and in the private well monitoring program is voluntary.

4.3.2 Trigger Levels and Contingency Mitigation for Private Wells

Two trigger levels and contingency mitigations scenarios are applied to address potential for impacts to private well users:

1) Where water level information (collected by a datalogger in the private well) from a well included in the Voluntary Private Well Monitoring Program, leads to a typical observed operating drawdown of less than one meter (water column above the pump intake at the end of a typical pumping cycle), this condition is a trigger to investigate the cause of the observed water level; and, if required, provide proactive mitigation to avoid any interruption in water supply, as outlined in Technical Recommendation 7.e. (Sheet 4 of the site plans). This proactive mitigation is possible where landowners agree to the voluntary monitoring of their wells.

2) The receipt of a well interference complaint is a trigger of the Well Complaint Response Protocol (Technical Recommendation 7.e., Sheet 3 of the Site Plans) and the investigation and contingency mitigation contained therein.

4.4 Summary of Monitoring, Triggers, and Contingency Mitigation

Table 8 presents a summary of the monitoring, trigger level setting algorithms, and contingency mitigation measures to identify and mitigate potential impacts to features sensitive to hydrological change in the vicinity of the Proposed CBM Caledon Pit/Quarry. A summary of ecological monitoring is presented in Table 9.

Table 8: Summary of Monitoring, Triggers, and Contingency Mitigation

Feature	Monitoring Points	Trigger Level	Monitoring Period	Monitoring Frequency	Contingency Mitigation
Cataract Southwest Wetland Complex, Provincially Significant Wetland (PSW). Marsh Communities. The Mitigation System, as described in the Mitigation System Design Report (WSP 2025), is designed to maintain groundwater levels in the vicinity of the Cataract Southwest Wetland Complex.	MW-IT-01B, MW-IT-02B, MW-IT-03B, MW-IT-04B, MW-IT-05B, MW-IT-06B, MW-IT-07B, and MW-IT-08B	Daily average groundwater levels, aligned with each zone of the mitigation system, between the Pit/Quarry and the receptor are the trigger to identify potential impacts to the Cataract Southwest Wetland Complex. Any daily average groundwater level observed below the trigger level, are considered to meet the trigger condition. Low level triggers are applied at wells MW-IT-01B, MW-IT-02B, MW-IT-03B, MW-IT-05B, MW-IT-06B, and MW-IT-07B, for the winter (January to March), monthly from April to September, and for the fall (October to December). Low trigger groundwater levels are equal to the 16th percentile of groundwater levels within the periods above, with the exception of Phase 5 of Operations, during which time Zone 1 and Zone 2 will be operated at a level 2 m and 3 m, respectively, above their seasonal low level triggers until zones 3 to 6 are operational. The high level triggers are applied at MW-IT-02B, MW-IT-04B, and MW-IT-08B. The high level triggers are equal to the ground surface elevation minus three meters at the nearest basement location and are applied to the nearest monitoring well between the infiltration trenches and the basement. The trigger level values are calculated by a Qualified Person to reflect naturally occurring conditions, with notification of the MNR upon updates. Any adjustment will be reported in the annual water monitoring report (see Drawing 4 of 5 Note O.7 g) that is submitted to MNR, MECP, Town of Caledon and CVC.	Year-round	Data collected every 15 minutes, downloaded monthly, evaluated (and confirmed) within five day of receipt.	Following the identification of a groundwater level below a trigger level, Proactive Contingency Mitigation will commence and the MNR will be notified within one week. An investigation of the cause of the groundwater level below a trigger level shall be conducted and reported to the MNR within one month of the notification. In the event that extraction is identified as the cause of the groundwater level observed below the trigger level, Contingency Mitigation measures will be identified and monitored to verify their effectiveness. Proactive Contingency Mitigation: increase infiltration rate. Proactive mitigation remains in place until Contingency Mitigation is successfully implemented. Contingency Mitigation: In the event that an observed groundwater level is below the trigger level for a zone of the Mitigation System and the subsequent investigation identifies that the observed groundwater level results from the Mitigation System not operating as intended, options will be identified to enhance the Mitigation System and restore groundwater levels to the trigger levels. It is expected that an immediate action would be to increase the infiltration rate until the level is above the trigger level or to perform additional maintenance on the infiltration trenches. Other potential mitigations include: enhancing the grout zone by additional infill grouting, enhancing the slurry wall, rehabilitating the quarry face by the placement of low permeability backfill, and pausing extraction in the area contributing to the lowered water level conditions. Preferred enhancement options will be identified in consultation with the MNR following the investigation.
Credit River Valley, including the Credit River, its small reaches and inlets, and seepage areas.	MW20-04, MW20-05A, MW20-06A, MW20-07A, MW20-08A, MW20-09, MW20-10A, MW20-12A, and MW20-13A The groundwater flow model shall be compared to observed data bi-annually during operations.	Daily average groundwater levels between the Pit/Quarry and the Credit River Valley are the trigger to identify potential for impact. Any daily average groundwater level observed outside of the trigger level range, are considered to meet the trigger condition. Upper trigger level, lower trigger level, and early detection trigger level values are applied at all the Credit River Valley monitoring points. Upper triggers levels are equal to maximum observed groundwater level minus minimum predicted groundwater drawdown for each well. Lower trigger levels are equal to the minimum observed groundwater level minus maximum predicted groundwater drawdown for each well. Early detection trigger levels are equal to the 16th percentile minus the maximum predicted drawdown. The trigger level values are calculated by a Qualified Person to reflect naturally occurring conditions, with notification of the MNR upon updates. Any adjustment will be reported in the annual water monitoring report (see Drawing 4 of 5 Note O.7 g) that is submitted to MNR, MECP, Town of Caledon and CVC.	Year-round	Data collected every 15 minutes, downloaded monthly, evaluated (and confirmed) within two weeks of the data being downloaded. When proactive monitoring frequency is required: water levels will be downloaded bimonthly and evaluated (and confirmed) within one week of the data being downloaded.	In the event that an early detection trigger level is identified, the monitoring frequency is increased to the proactive monitoring frequency. Following the identification of a groundwater level below a trigger level, the MNR shall be notified within one week. An investigation of the cause of the groundwater level below a trigger level shall be conducted and reported to the MNR within one month of the notification. In the event that extraction is identified as the cause of the groundwater level observed below the trigger level, appropriate Contingency Mitigation measures will be identified, designed, constructed, and monitored to verify their effectiveness. Contingency Mitigation options include: the modification of the settling ponds to enhance infiltration, use of managed aquifer recharge (such as injection wells, infiltration trenches (including construction of planned infiltration trenches prior to the anticipated timing or construction of additional infiltration trench zones), ground surface infiltration systems (“soaker hoses”), and the construction of low permeability barriers (such as low permeability backfill placed on the quarry walls, grouting the bedrock, or the use of slurry walls in the overburden), and may involve temporarily pausing extraction in the area contributing to the lowered water level conditions until the mitigation is designed and constructed.

Feature	Monitoring Points	Trigger Level	Monitoring Period	Monitoring Frequency	Contingency Mitigation
Fish habitat in Tributary 14	SW33, SW35, SW36, and SW37	Daily average surface water depth in identified fish habitat in Tributary 14 are the trigger to identify potential for impact in the months of March to August. Trigger levels for each month are set equal to the minimum surface water depth of naturally occurring water depth or to the ecologically allowable minimum (2 cm), whichever is less. Where near dry conditions (<2 cm of surface water depth) the trigger level is set to the maximum naturally occurring number of days within a month in which near dry conditions are observed. The trigger level values are calculated by a Qualified Person to reflect naturally occurring conditions, with notification of the MNR upon updates. Any adjustment will be reported in the annual water monitoring report (see Drawing 4 of 5 Note O.7 g) that is submitted to MNR, MECP, Town of Caledon and CVC.	Year-round	Monthly from March to August, Quarterly throughout the remainder of the year	An investigation of the cause of the surface water depth below a trigger level (or a near dry condition persisting longer than a trigger value) shall be conducted and exceedances reported to the MNR within one week and investigations completed within one month. In the event that extraction is identified as the cause of the groundwater level observed below the trigger level, appropriate Contingency Mitigation measures will be identified, designed, constructed, and monitored to verify their effectiveness.
Private Water Well Users, taking from overburden and bedrock aquifers proximal to the quarry.	1) Prior to below water extraction, the licensee shall complete a follow-up door-to-door survey of private wells for properties within 1,000 metres of the licence area. 2) Wells with potential for impact will be invited to participate in a voluntary private well monitoring program.	A) Where monitoring of a private well indicates potential for well interference (e.g., <1m of available drawdown under typical operating conditions), the well complaint process will be triggered to proactively mitigate the potential for well interference. B) A complaint of well interference triggers the well complaint response process.	Year-round	Quarterly downloads	Contingency mitigation measures are outlined in the Well Complaint Response Protocol, detailed on Site Plans, Sheet 3 of 4, Technical Recommendation 7.e.

Table 9: Summary of Ecological Monitoring

Feature – Monitoring Type	Monitoring Plots and Station [Related Water Monitoring]	Survey Method	Monitoring Period	Monitoring Frequency	Water Management Response
Floristic Monitoring Groundwater Connected Feature: Cataract Southwest Wetland Complex Groundwater Isolated Features: Coulterville Wetland complex Northwest Wetland Unit complex	 ST1 [SW10, SW21/MP21] ST2 [SW20/MP20, SW34/MP34] ST3 [SW14/MP14]	**Wetland Floristic Transect** Transect line 100 m in length (T-bars indicator ends) demarcate centre line at 10 m intervals along the transect. Vascular plants within 1 m of the center line of the transect shall be identified along the length of the transect, and the species abundance. At ends of transect fixed sample plots (2) to be established at the terminus of each transect. Plots shall be 10 m x 10 m in size. Within each plot vascular plant species shall be identified, percent cover of each species within each vegetation layer shall be visually estimated. Photographs shall be taken at the center of each fixed sample plot for yearly Comparison A weighted mean of Coefficient of Conservatism (CC) and Coefficient of Wetness (CW) shall be calculated for each vegetation layer based on species cover, and for the overall plot and compared to baseline conditions in subsequent monitoring years.	During Quarry Operations Baseline prior to below water extraction	**Wetland Floristic Monitoring** Baseline – 2 survey years within the first four years of operation. starting with baseline surveys at the commencement of operations prior to significant dewatering has been implemented Operations – every year for the first six years of the operation of the mitigation system. Every five years thereafter for the life of the quarry. For each of the above, 1 seasonal survey during growing season (July)	**Floristic Surveys and Assessment** Groundwater dependent - Cataract Southwest Wetland Complex, - if floristic survey indicates a trending change in CC and CW values, implement Contingency Mitigation as defined in table 8 for the Cataract wetland Other Wetlands not groundwater connected: Compare monitoring event results to previous years events. If a composition change is noted, assess water data from water monitoring staff gauges and piezometers for evidence of trending water regime changes. Assess climatic relationship with respect to seasonal, cyclical and long climatic trend variations. Assess predicted groundwater conditions and assess corrective action if needed via water management strategies.
Amphibian Egg Mass Survey Groundwater Connected Feature: Cataract Southwest Wetland Complex Features Hydraulically Isolated Groundwater: Coulterville Wetland complex Northwest Wetland Unit complex Wetland pond #5	 EMS1 [SW10, SW21/MP21] EMS2 [SW20/MP20, SW34/MP34] EMS3 [SW14/MP14] EMS4 [SW22/MP22, SW23/MP23]	**Egg Mass Surveys** Amphibian egg mass surveys are completed in the locations shown Figure 2. Surveys are focused on egg mass deposition of anurans and Ambystoma spp. Egg mass surveys provide a quantitative measurement of the potential production of the wetlands, and generally can be compared to egg mass surveys from previous years to document trends Survey consists of systematically searching the vernal pools. Tallies are kept of the number and where possible, the species of egg masses observed.	During Quarry Operations Baseline prior to below water extraction	**Egg Mass Surveys** Baseline – 2 survey years within the four years of operation. starting with baseline surveys at the commencement of operations prior to significant dewatering has been implemented Operations – every year for the first six years of the operation of the mitigation system. [If no active egg mass salamander breeding is observed after these consecutive 6 years, a proposal to terminate surveys will be advanced through the submission of justification for discontinuing monitoring to be reviewed and approved by MNR if deem appropriate. Every five years thereafter for the life of the quarry. For each of the above, 2 spring surveys, one at spring thaw when salamanders are record in the province to be actively breeding and one survey during the peak anuran breeding period (1st week May)	**Egg Mass Survey Assessment** Amphibian breeding is a key indicator of the health of wetlands and water regime trends that could be affecting wetland function. Results of egg mass surveys will be used to assess the continued and long-term health and function of wetlands in nearest proximity to the quarry in concert with more quantitative water and florist indices that are aligned with contingency water management measures.

Feature – Monitoring Type	Monitoring Plots and Station [Related Water Monitoring]	Survey Method	Monitoring Period	Monitoring Frequency	Water Management Response
Fish Habitat Monitoring Tributary 14	EM1 [SW33/MP33, SW35/MP35, SW36/MP36, SW37/MP37]	**Fish Habitat Mapping** Fish habitat mapping complimentary to current detailed mapping will be completed within the area shown on Figure 16 -Reaches 1 -42 using field-based surveys, including visual assessments and GPS-referenced delineation of habitat units. Habitat characteristics such as wetted width, depth, flow conditions, substrate composition, in-stream cover, and fish activity will be recorded to support functionality of fish habitat.	During Quarry Operations Baseline prior to below water extraction	**Fish Habitat Condition** Baseline – 2 survey years within the first four years of operation. Starting with baseline surveys at the commencement of operations prior to significant dewatering has been implemented Operations – every year for the first five years of the operation of the mitigation system. Every five years thereafter for the life of the quarry. For each of the above, 1 seasonal survey between April and August	**Fish Habitat Assessment** Fish habitat condition is a indicator of the health of aquatic ecosystems and water regime trends that may influence habitat availability and function. Compare monitoring event results to previous years events. If a notable change is identified, assess water data from water monitoring staff gauges and piezometers for evidence of habitat availability and functional changes.

5.0 REPORTING

An Annual Water Resource and Ecological Monitoring Report shall be prepared summarizing 1) monitoring, 2) trigger evaluations, 3) any observed levels outside of the trigger levels, and 4) a summary of any contingency mitigations implemented. The monitoring report shall be submitted to the MNR, MECP, Town of Caledon, and Credit Valley Conservation Authority. The monitoring report shall include an evaluation of the effectiveness of the mitigation system to maintain trigger levels to protect water dependent ecological features and private wells, and may include recommendations to update the trigger levels in the event that naturally occurring conditions require updates to the trigger levels.

6.0 RECOMMENDATIONS

It is recommended that:

- A monitoring well nest similar, to those completed for each of the infiltration trench zones, should be installed near the southern most corner of the infiltration trenches (near to Zone 4 and Zone 5), identified as MW26-01 on Figure 1, in order to observe groundwater levels near the corner between Infiltration Trench 4 (oriented northwest to southeast) and Infiltration Trench 5 (and oriented northeast to southwest) and to verify that groundwater levels remain below the basement of the nearby house;
- Surface water monitoring stations SW28, SW29, and SW30 be added to the monitoring program;

It is recommended that the Site Plans be revised as follows (where recommendations involve changes to existing notes, italics are used to highlight changed text):

General

- Add note I.31. (sheet 1 of the site plans): Integrated Water Resources and Natural Environment Monitoring, Triggers, and Mitigation Plan, WSP Canada Inc., November 2026;
- Include Table 8 and 9 of this report on the site plans;

Water Technical Recommendations

- Add MW-IT-08A/B/C, SW29, and SW30 to Table 1, sheet 1 of the site plans on and in the Monitoring Well & Surface Water Station inset figure, as present on Table 1 of this report;
- Add MW20-24, MW20-25, MW20-26, MW20-28, SW28, SW31, SW32, SW33/MP33, SW34/MP34, SW35/MP35, SW36/MP36, and SW37/MP37 to Table 2 on sheet 1 of the site plans and in the Monitoring Well & Surface Water Station inset figure, as present on Table 2 of this report;
- Revise the “Monitoring Point Type” column in Table 1 and Table 2 on sheet 1 of the site plans to match the monitoring point types in Table 1 and Table 2 of this report;
- Revise the notes for Table 1 (sheet 1) by:
  - Replace notes 4 with the following text: “4. These monitoring points only need to be monitored until they are required to be decommissioned to allow for on-site operations. Monitoring wells shall be decommissioned in accordance with MECP requirements.”;
  - Add notes 7 and 8 from Table 1 of this report to Table 1 (sheet 1);

  - Revise the notes for Table 2 (sheet 1) by adding notes 6 and 7 from Table 2 of this report;

- Revise Technical Recommendation O.7.b. (sheet 4 of the site plans) as follows:
  Prior to below water extraction, the licensee shall complete a follow-up door-to-door survey of private wells for properties within 1,000 metres of the licence area, to supplement and verify the MECP Water Well Information System (WWIS) information, to confirm neighbouring water users and confirm baseline conditions prior to below water extraction commencing. Landowner participation in this private well survey is voluntary. *Landowners identified as having potential for impact (Section 9.3.3. of the Water Report), shall be invited to participate in the Voluntary Private Well Monitoring Program, including monitoring of water levels using a datalogger and quarterly downloads.*

- Revise Technical Recommendation O.7.g. (sheet 4 of the site plans) to read:
  The licensee shall submit an annual water resources and *ecological monitoring report* to MNR and *distribute it to* MECP, Town of Caledon and Credit Valley Conservation (CVC). The annual report shall also include a summary of any water related complaint and the actions taken by the licensee to address the issue.

- Insert new Technical Recommendation O.7.k. (sheet 4 of the site plans) and renumber subsequent points:
  The effectiveness the measures shall be verified prior to commencing extraction that requires protection by the Mitigation System by adding water to the infiltration trenches and observing appreciable changes in water levels in the network of monitoring wells.

Natural Environment Technical Recommendations

- The Annual Water Resource and Ecological Monitoring Report be prepared submitted to the MNR and distributed to the MECP, Town of Caledon, and Credit Valley Conservation Authority (CVC);

  - Insert new Technical Recommendation O.7.h. (Sheet 4 of the site plans) to read as follows and renumber subsequent points:
    The licensee is required to operate in accordance with the Monitoring, Triggers, and Mitigation Plan Report, prepared by WSP Canada Inc. and Consor Engineering LLC dated May 2026, as may be amended from time to time with approval from MNR, in consultation with MECP, Town of Caledon, and CVC.

- Add Technical Recommendation O.9.p. (Sheet 4 of the site plans):
  The licensee shall submit an annual water resources and *ecological monitoring report* to MNR and *distribute it to the* MECP, Town of Caledon and Credit Valley Conservation (CVC). The annual report shall also include a summary of any water related complaints and the actions taken by the licensee to address the issue.

- Site Plan notes will be revised. Note 9m under Natural Environment Sheet 4 of 5 will be replaced with the following:

Long term Supplementary Ecological monitoring shall be implement as described in table 9.

Closure

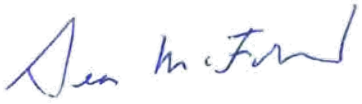
We trust this report meets your current requirements. Should you have any questions please do not hesitate to contact the undersigned.

Signature Page

WSP Canada Inc.



Paul Menkveld, M.Sc., P.Eng.
Hydrogeological Engineer



Sean McFarland, Ph.D., P.Geo.
Senior Technical Director, Hydrogeology, Fellow



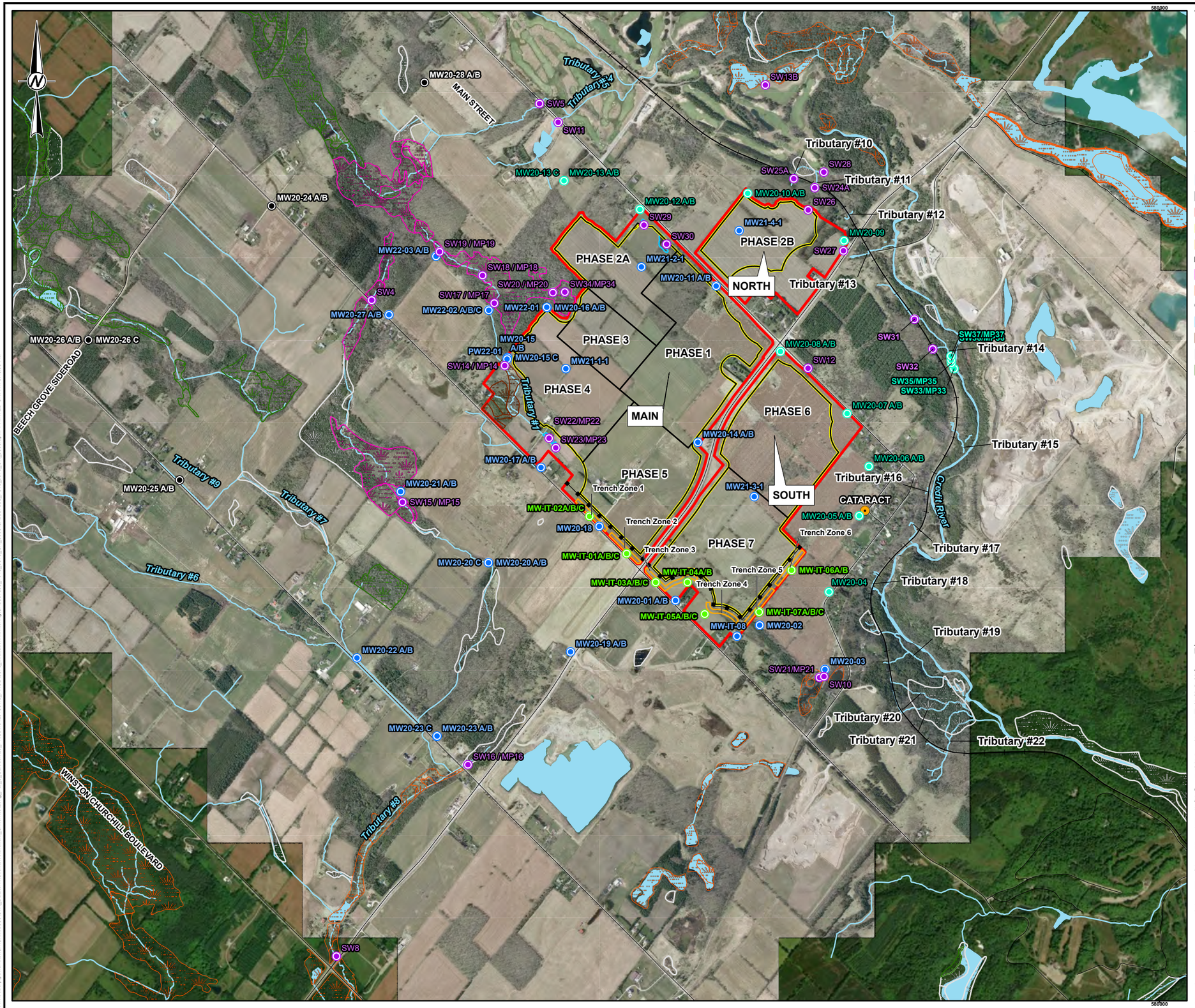
Daniel Eusebi, BES, RPP, MCIP
Senior Principal Ecologist

Contributor

Heather Melcher, M.Sc., *VP, Permitting and Planning (Consor)*

PM/SM/DE/al/ld

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LEGEND

- TOWN
- MONITORING WELL
- SURFACE WATER STATION
- CREDIT RIVER VALLEY AND TRIBUTARY 14 TRIGGER LOCATION
- MITIGATION SYSTEM TRIGGER LOCATION
- BACKGROUND WELLS
- ROAD
- RAILWAY
- SLURRY WALL
- WATERBODY
- EXTRACTION PHASE
- LICENCE BOUNDARY
- LIMIT OF EXTRACTION
- INFILTRATION TRENCH ZONES

PROVINCIALLY SIGNIFICANT WETLAND

- PROVINCIALLY SIGNIFICANT WETLAND (WSP EVALUATED) - UPDATED 2025
- PROVINCIALLY SIGNIFICANT WETLAND

OTHER WETLAND

- ORIGINAL LIO WETLAND (WSP EVALUATED)
- WETLAND (WSP EVALUATED) - UPDATED 2025
- UNEVALUATED WETLAND
- EVALUATED WETLAND (NO SIGNIFICANCE)

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NOTE(S)

1. CONSTRUCT A SLURRY WALL / GROUT ZONE IN THE SOUTHWEST SETBACK OF THE MAIN AREA PRIOR TO EXTRACTION IN PHASE 3 (SITE PLANS SHEET 2, NOTE 5.2).
2. CONSTRUCT INFILTRATION TRENCHES IN THE SOUTHWEST SETBACK OF THE MAIN AREA (ZONES 1 AND 2) PRIOR TO EXTRACTION IN PHASE 4 (SITE PLANS SHEET 2, NOTE 6.2).
3. CONSTRUCT SLURRY WALL / GROUT ZONE AND INFILTRATION TRENCHES IN THE SOUTHWEST AND SOUTHEAST SETBACK OF THE SOUTH AREA PRIOR TO EXTRACTION IN PHASE 6 (SITE PLANS SHEET 2, NOTE 8.2).

REFERENCE(S)

1. BASE DATA MNRF LIO OBTAINED 2020
2. WATERCOURSES OBTAINED FROM CREDIT VALLEY CONSERVATION AUTHORITY OPEN DATA PORTAL, NOVEMBER 2022 IN COMBINATION WITH SITE WATERCOURSE SURVEY PROVIDED BY FIRST BASE SOLUTIONS NOVEMBER 2021.
3. IMAGERY FIRSTBASE SOLUTIONS SPRING 2019 (15CM RESOLUTION) AND BROOK TROUT SEEP POI - TRIBUTARY LABELS:
   BROOK TROUT SEEP POI:
   FISH HABITAT LINE (QG):
   WORLD IMAGERY: VANTOR
4. LICENSE AND EXTRACTION LIMIT PROVIDED BY MHBC IN JUNE 2023.

PREPARED FOR: CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA).

PROJECT

CALEDON PIT / QUARRY

TITLE

PROPOSED WATER RESOURCES MONITORING PROGRAM

CONSULTANT

wsp

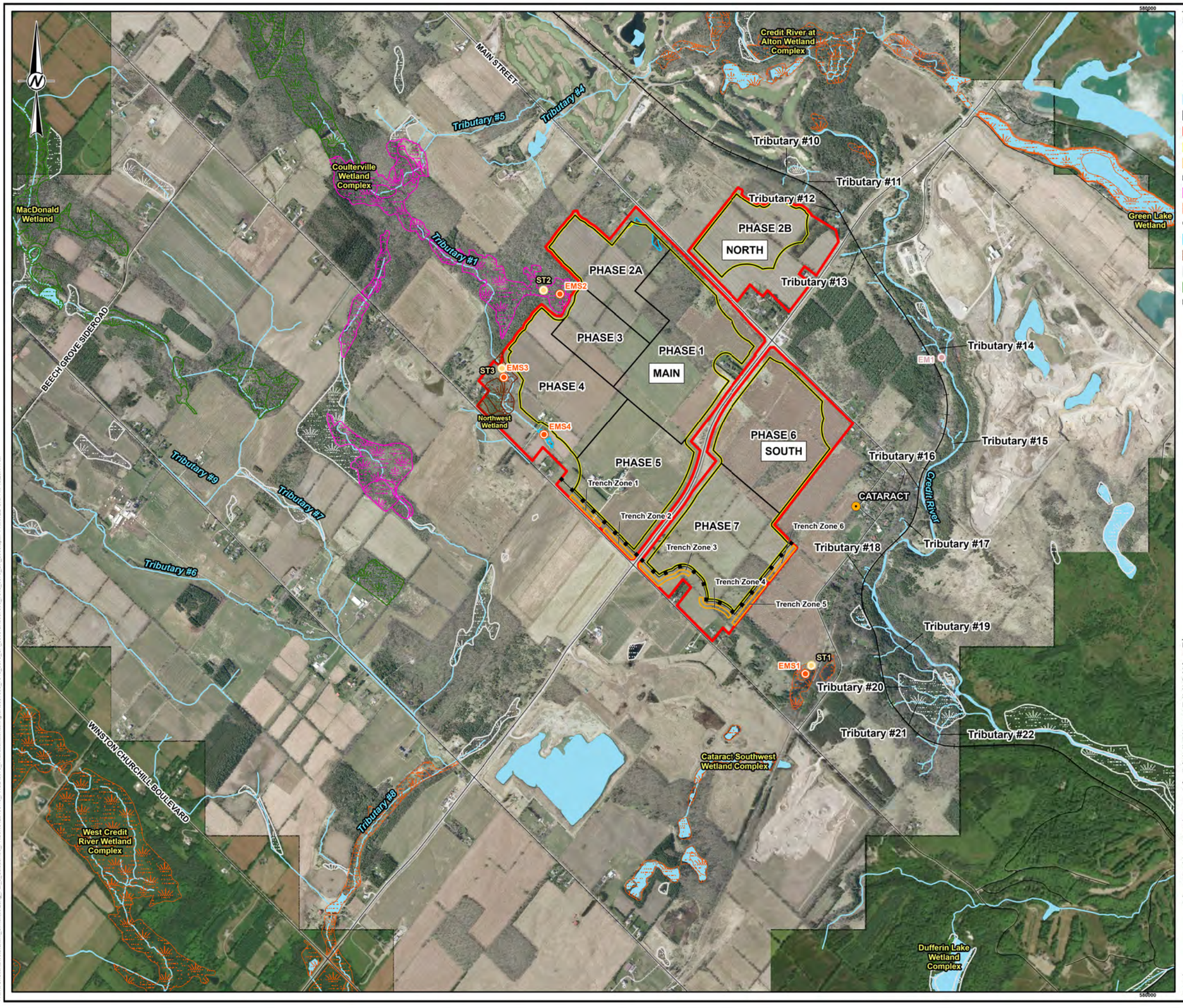
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REVIEWED	GS
APPROVED	CD

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LEGEND

- TOWN
- ROAD
- RAILWAY
- SLURRY WALL
- WATERBODY
- EXTRACTION PHASE
- LICENCE BOUNDARY
- LIMIT OF EXTRACTION
- INFILTRATION TRENCH ZONES

PROVINCIALLY SIGNIFICANT WETLAND

- PROVINCIALLY SIGNIFICANT WETLAND (WSP EVALUATED) - UPDATED 2025
- PROVINCIALLY SIGNIFICANT WETLAND

OTHER WETLAND

- ORIGINAL LIO WETLAND (WSP EVALUATED)
- WETLAND (WSP EVALUATED) - UPDATED 2025
- UNEVALUATED WETLAND
- EVALUATED WETLAND (NO SIGNIFICANCE)

ECOLOGICAL MONITORING

- WETLAND VEGETATION MONITORING TRANSECTS
- EGG MASS SURVEYS
- ECOLOGICAL MONITORING

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NOTE(S)

1. CONSTRUCT A SLURRY WALL / GROUT ZONE IN THE SOUTHWEST SETBACK OF THE MAIN AREA PRIOR TO EXTRACTION IN PHASE 3 (SITE PLANS SHEET 2, NOTE 5.2).
2. CONSTRUCT INFILTRATION TRENCHES IN THE SOUTHWEST SETBACK OF THE MAIN AREA (ZONES 1 AND 2) PRIOR TO EXTRACTION IN PHASE 4 (SITE PLANS SHEET 2, NOTE 6.2).
3. CONSTRUCT SLURRY WALL / GROUT ZONE AND INFILTRATION TRENCHES IN THE SOUTHWEST AND SOUTHEAST SETBACK OF THE SOUTH AREA PRIOR TO EXTRACTION IN PHASE 6 (SITE PLANS SHEET 2, NOTE 8.2).

REFERENCE(S)

1. BASE DATA MNRF LIO OBTAINED 2020
2. WATERCOURSES OBTAINED FROM CREDIT VALLEY CONSERVATION AUTHORITY OPEN DATA PORTAL, NOVEMBER 2022 IN COMBINATION WITH SITE WATERCOURSE SURVEY PROVIDED BY FIRST BASE SOLUTIONS NOVEMBER 2021.
3. IMAGERY FIRSTBASE SOLUTIONS SPRING 2019 (15CM RESOLUTION) AND WORLD IMAGERY: VANTOR
4. LICENSE AND EXTRACTION LIMIT PROVIDED BY MHBC IN JUNE 2023.
5. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT

CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA).

PROJECT

CALEDON PIT / QUARRY

TITLE

PROPOSED ECOLOGICAL MONITORING PROGRAM

CONSULTANT

wsp

YYYY-MM-DD	2026-10-29
DESIGNED	CGE
PREPARED	SO/MC
REVIEWED	GS
APPROVED	CD

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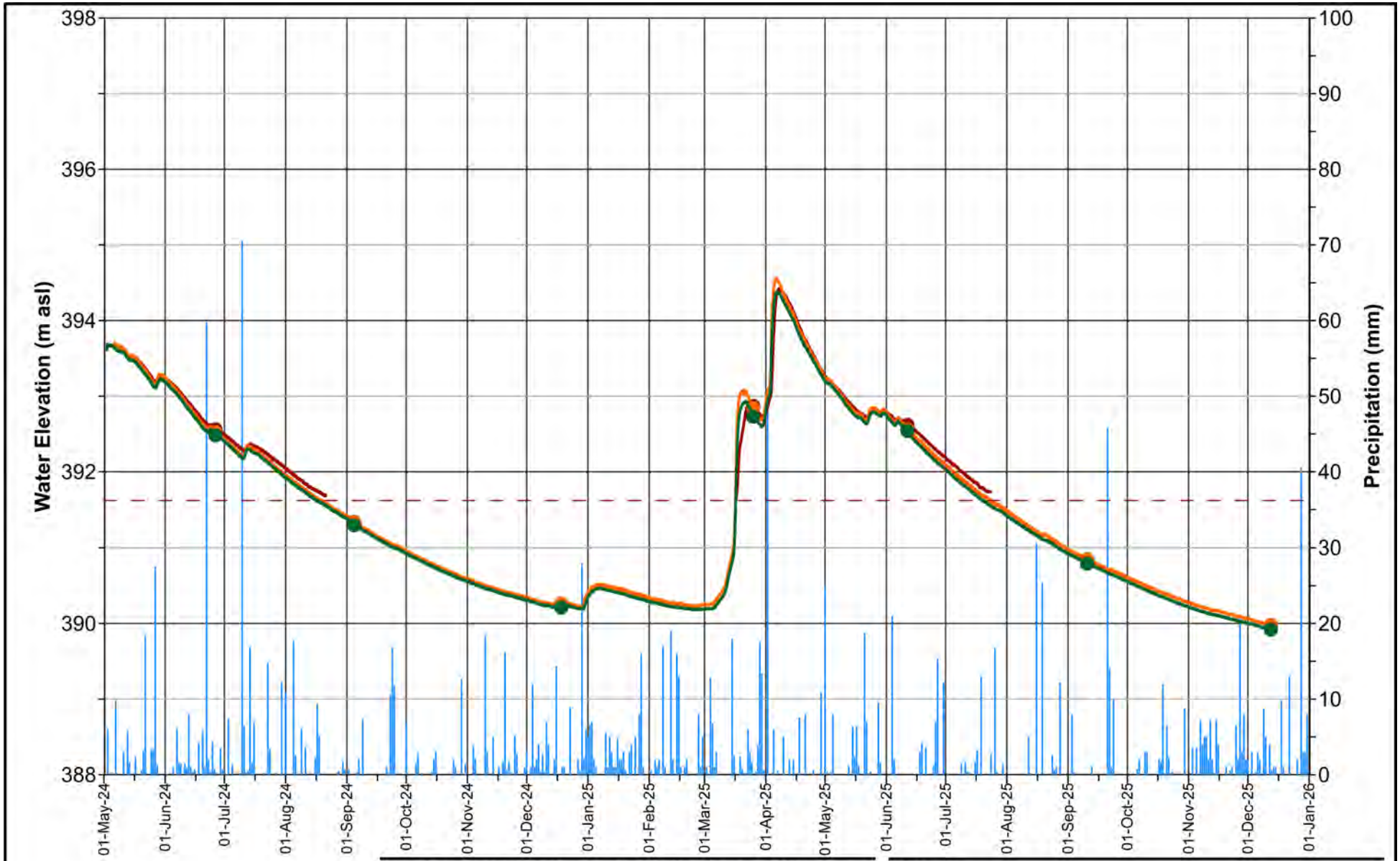
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ATTACHMENT A

Groundwater Hydrographs



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) MW-IT-01C dry when not plotted.

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- MW-IT-01C
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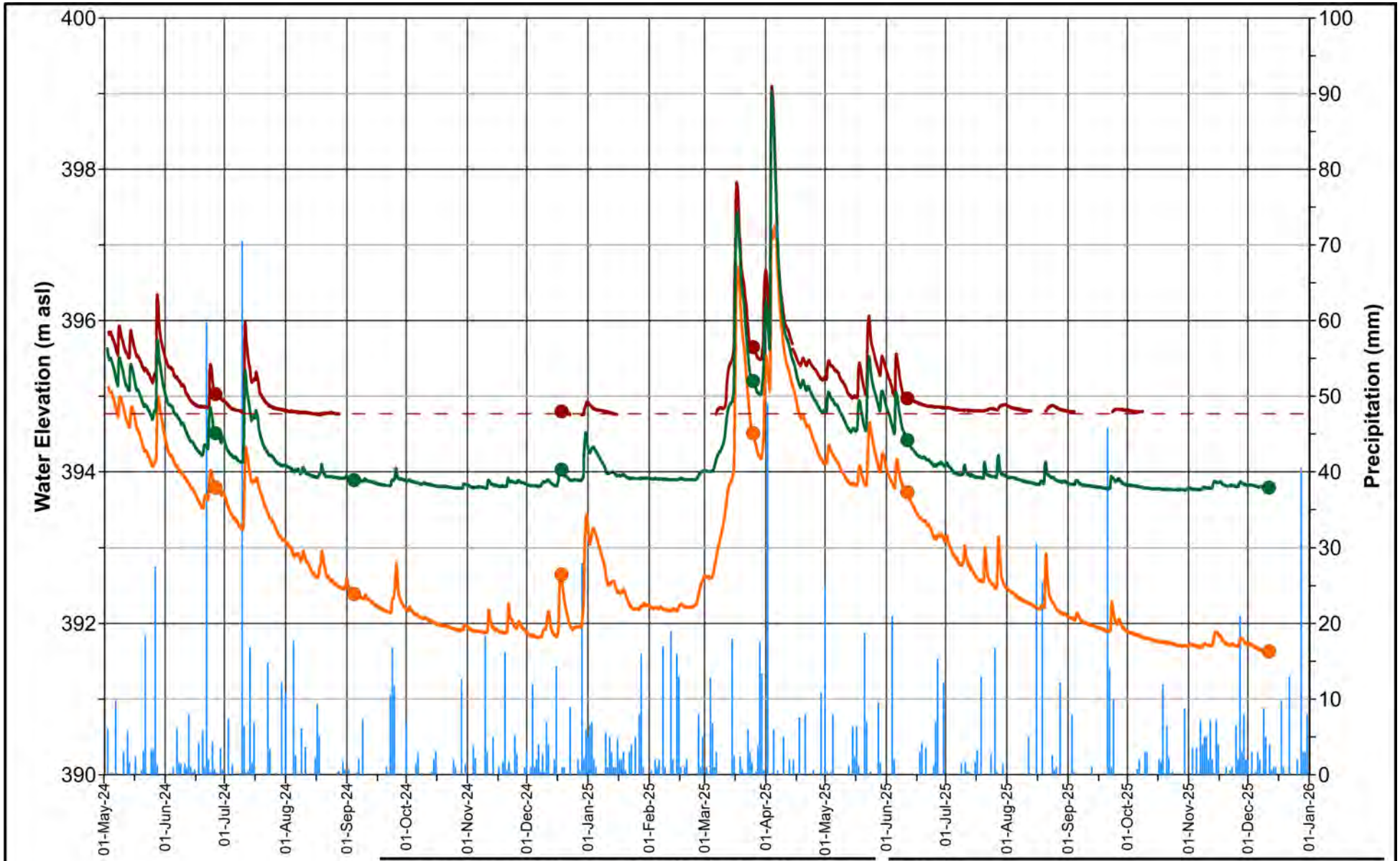
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-01**

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REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
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Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) MW-IT-02C dry when not plotted.

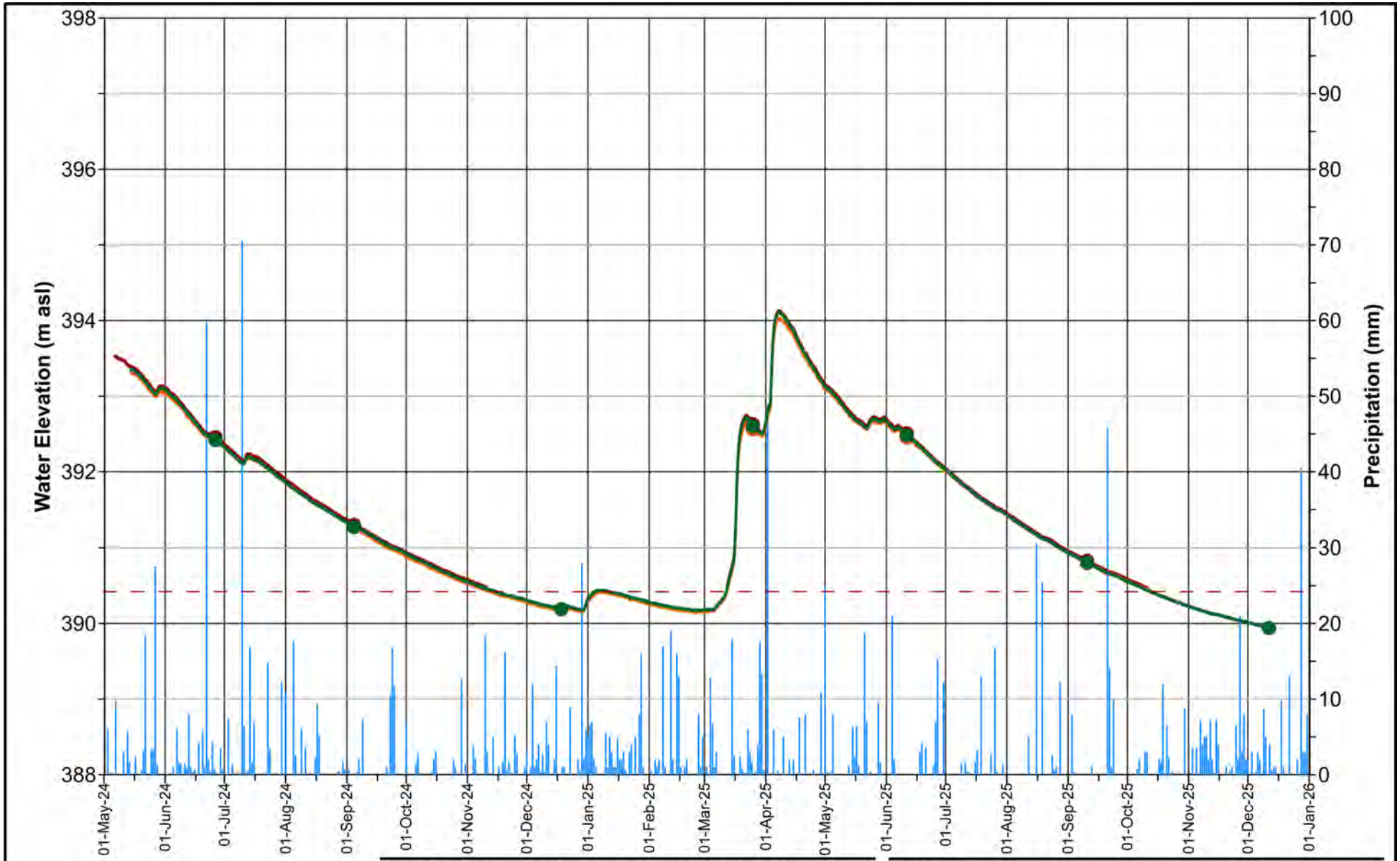
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PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

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REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
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Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
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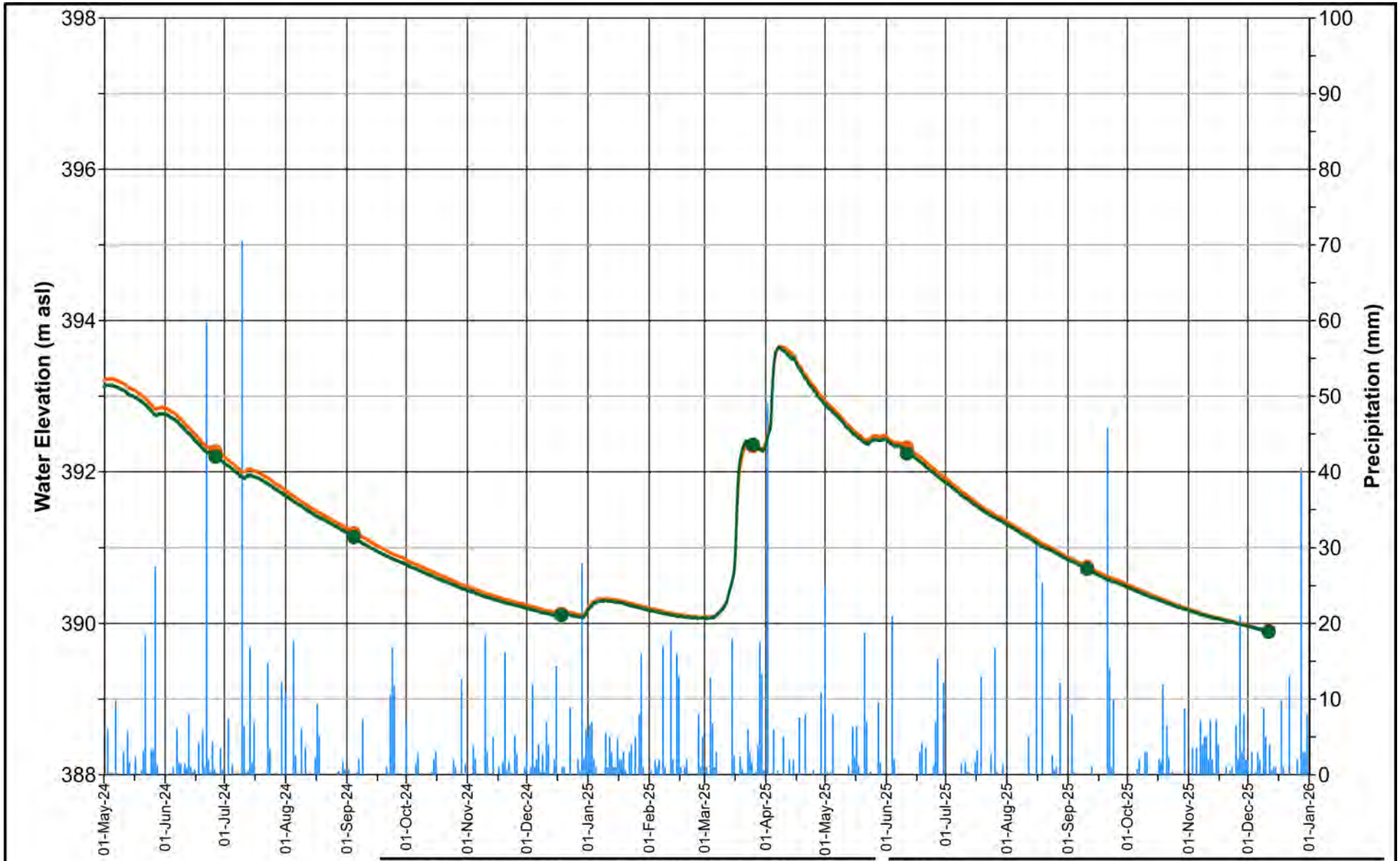
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-03**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A3



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations

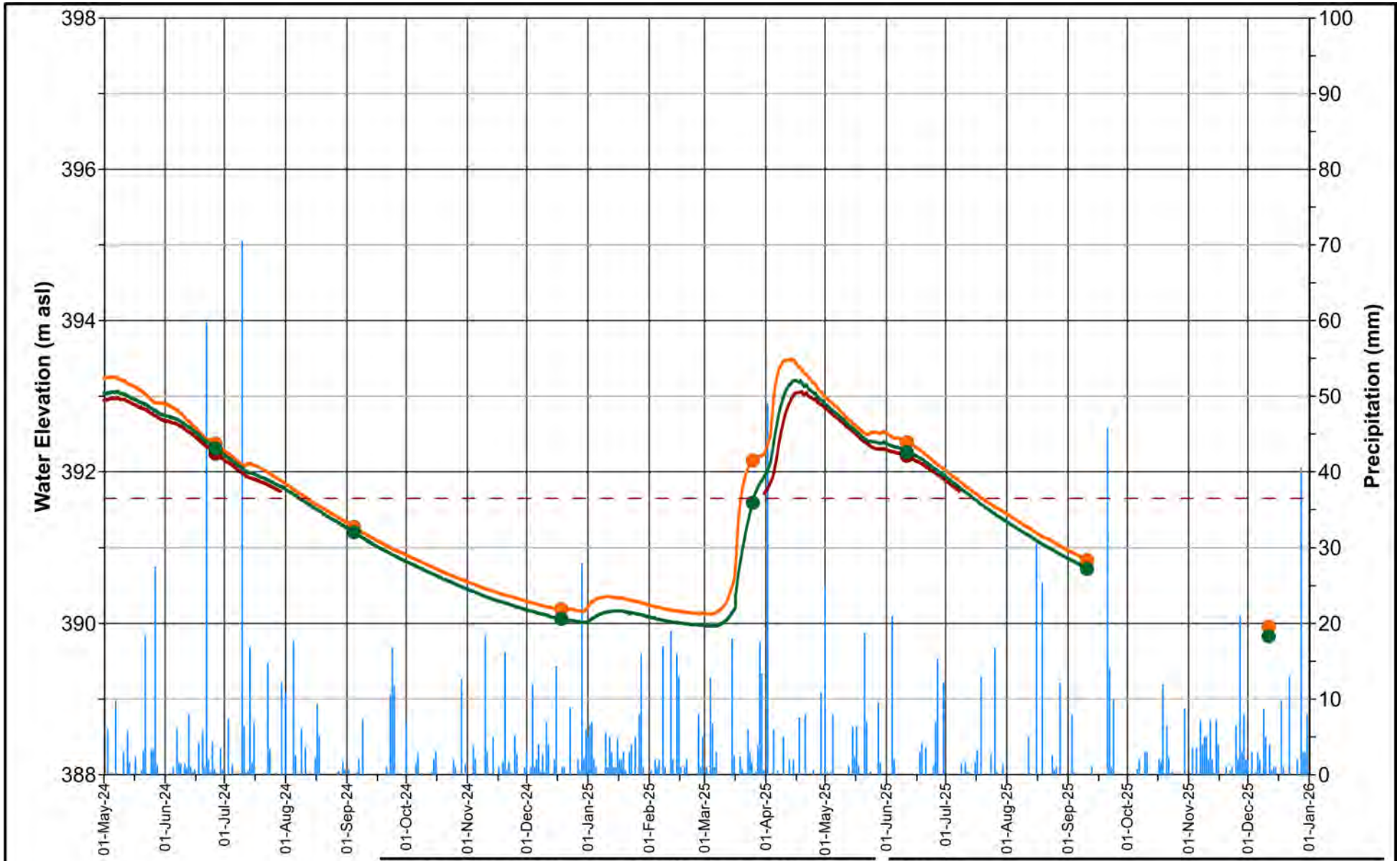
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-04**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A4



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) MW-IT-05C dry when not plotted.
3) Logger data unavailable from September to December 2025.

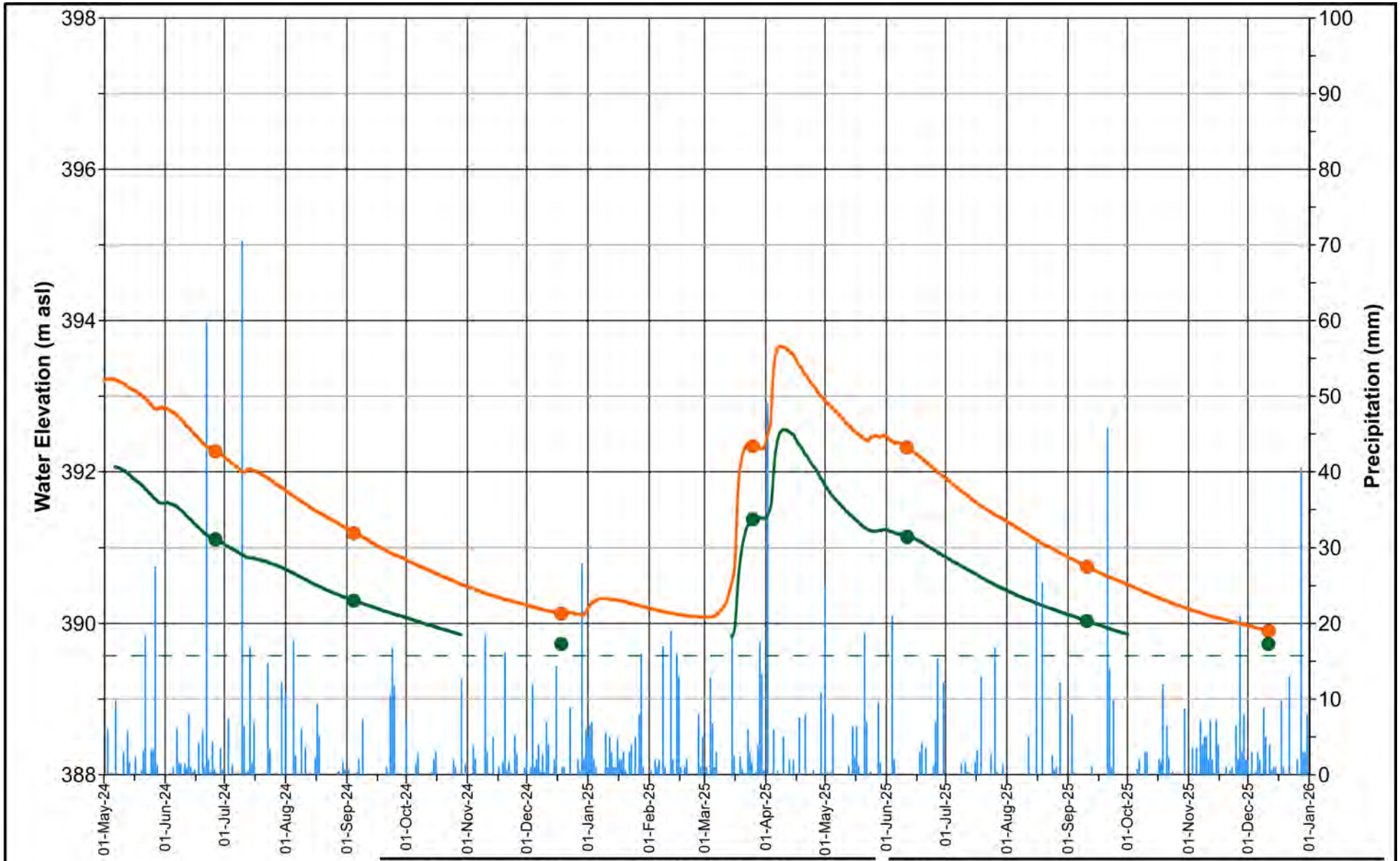
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-05**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A5



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) MW-IT-06B water level below logger when not plotted.

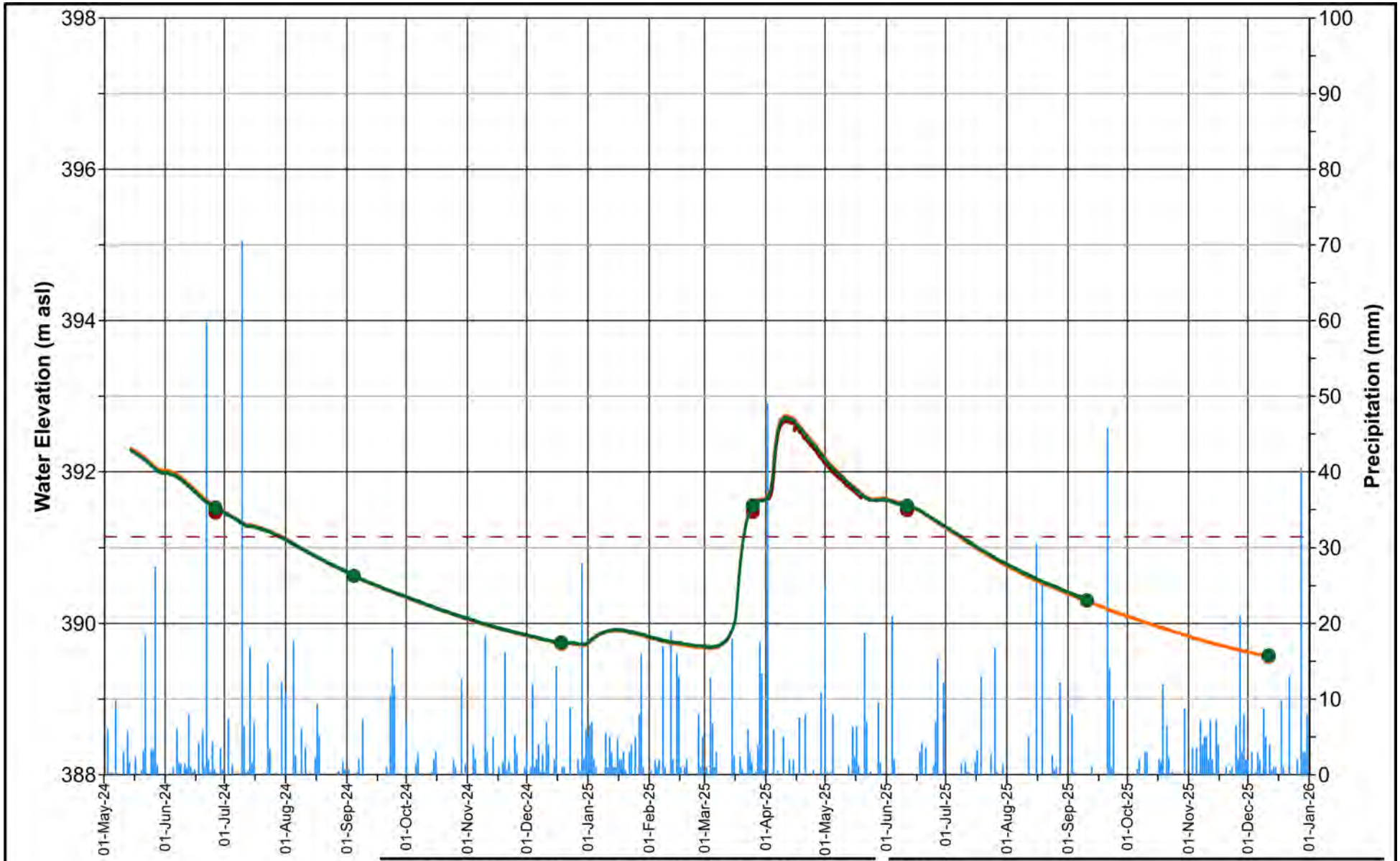
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-06**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A6



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) MW-IT-07C water level below logger when not plotted.
3) Logger data at MW-IT-07B unavailable from September to December 2025.

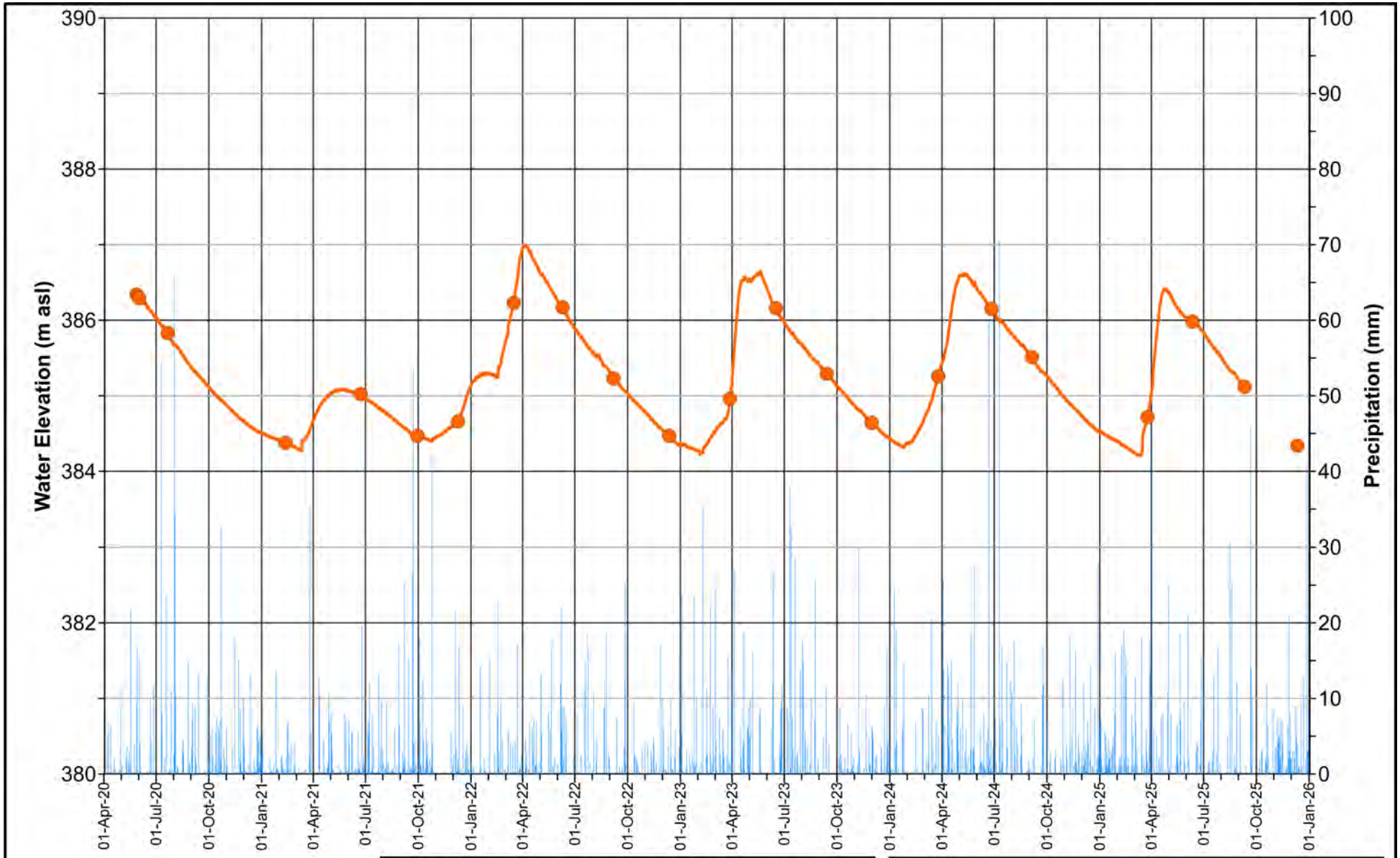
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW-IT-07**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A7



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) Logger data unavailable from September to December 2025.

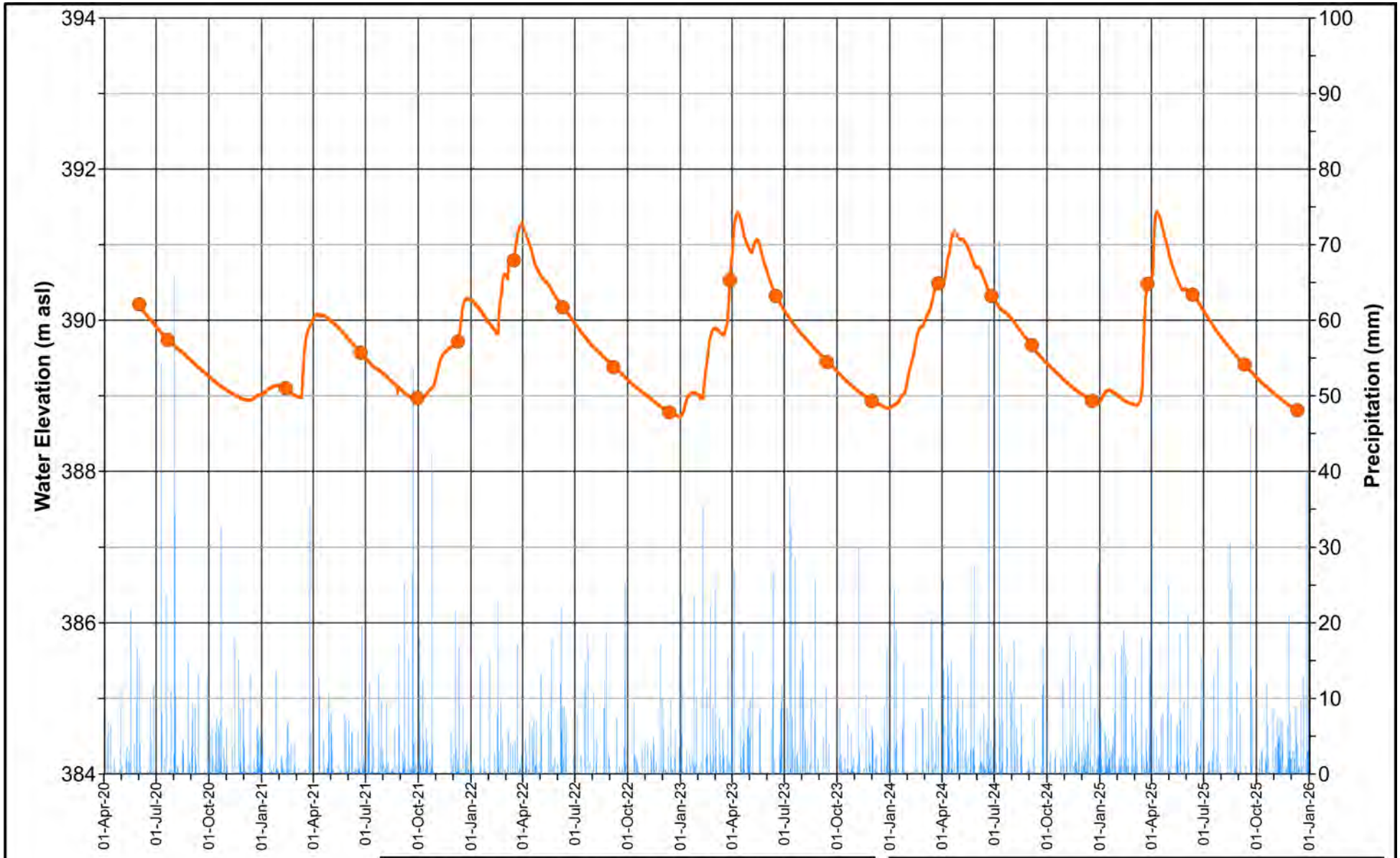
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-03**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A8



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations

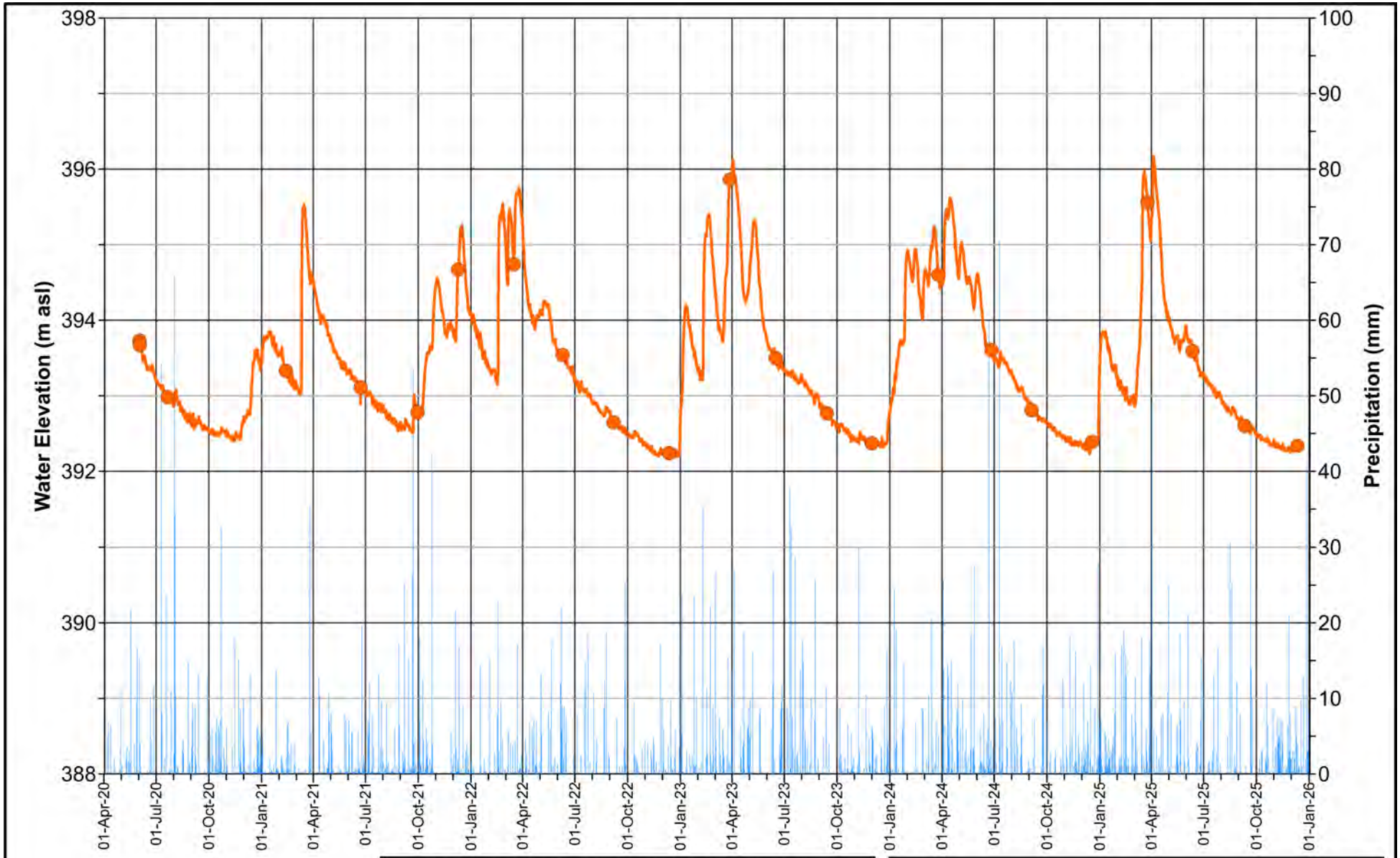
DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-04**

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A9



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations

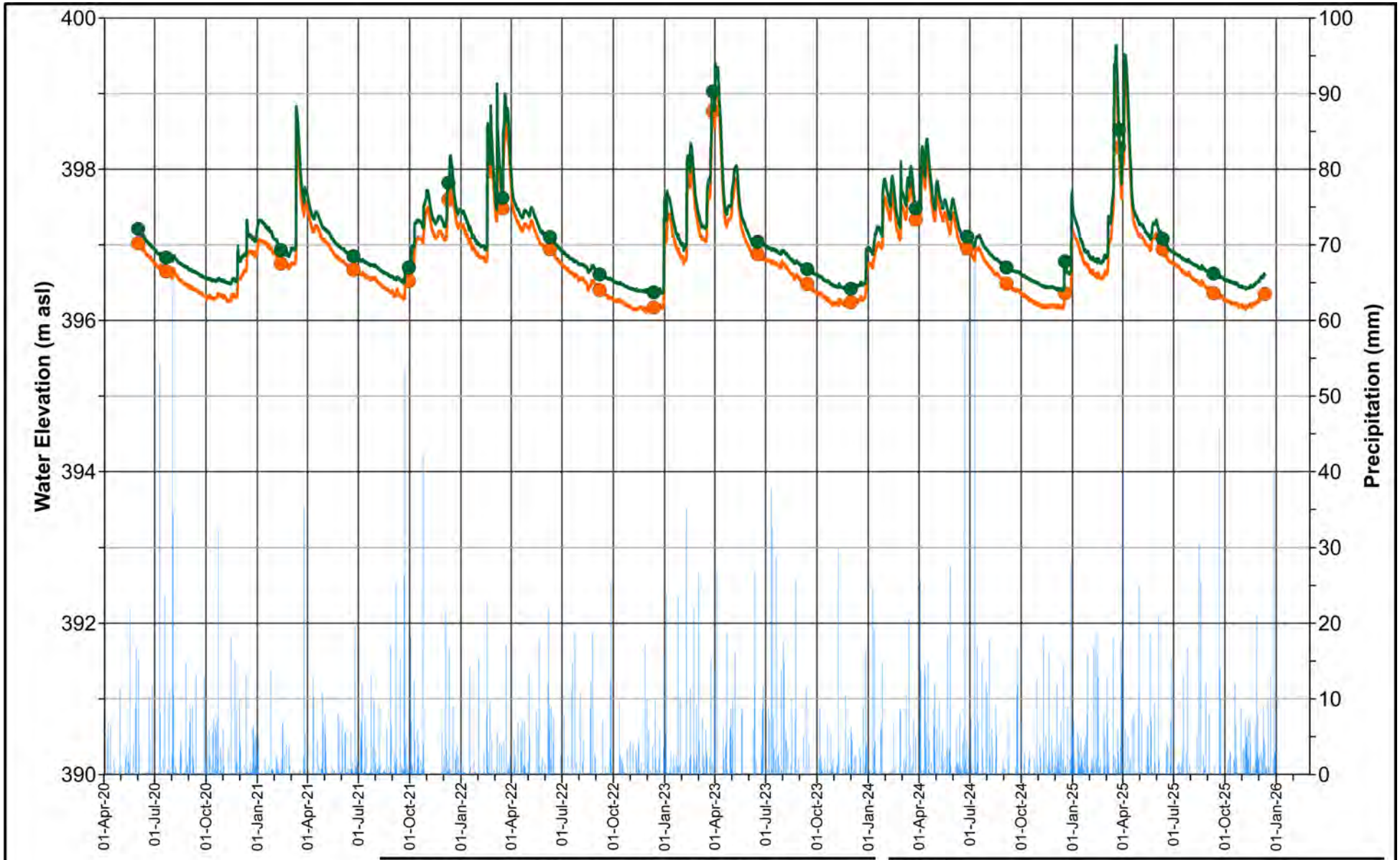
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-05**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A10



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations

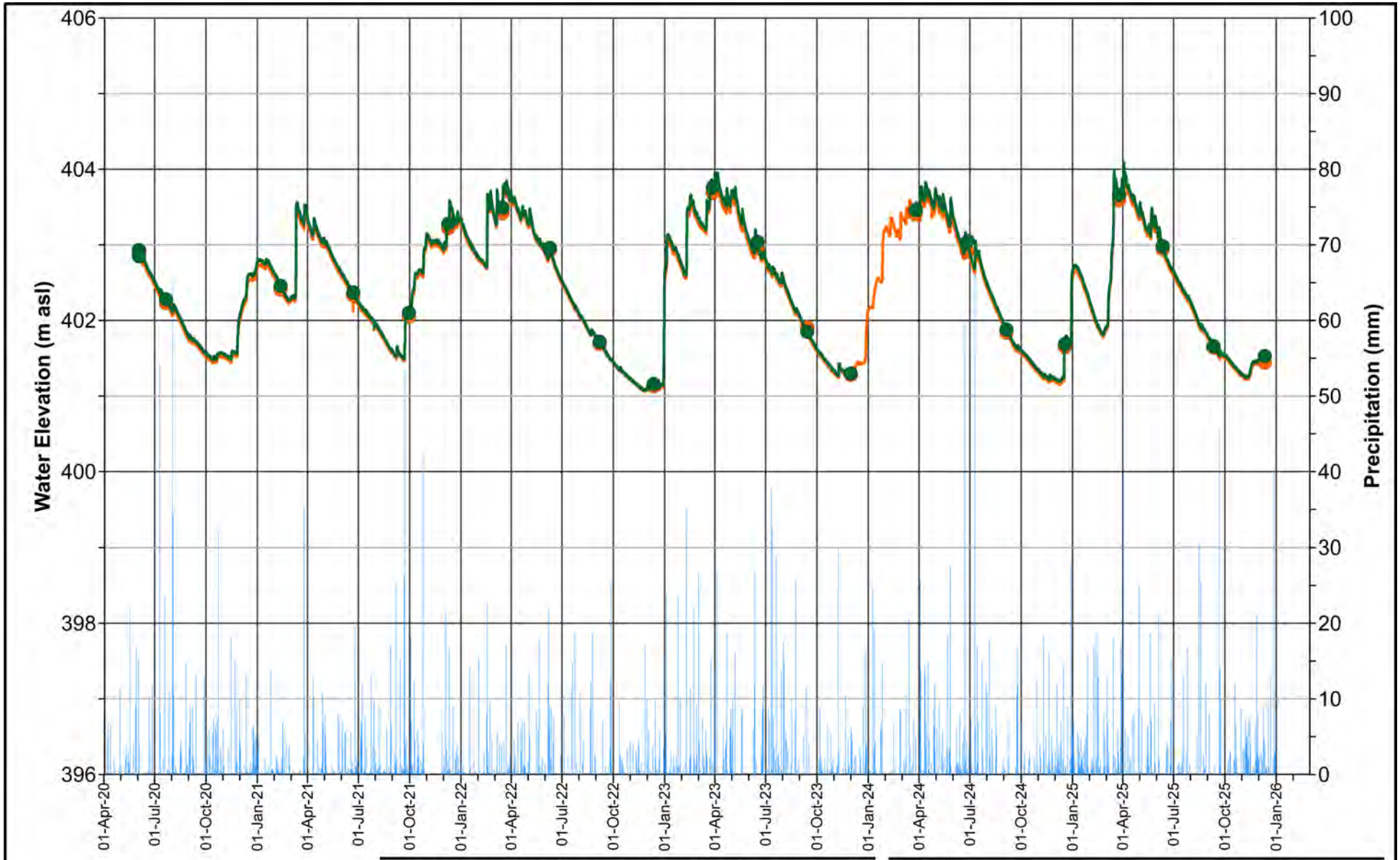
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-06**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A11



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations
2) Logger data unavailable for MW20-07B between December 2023 to March 2024.

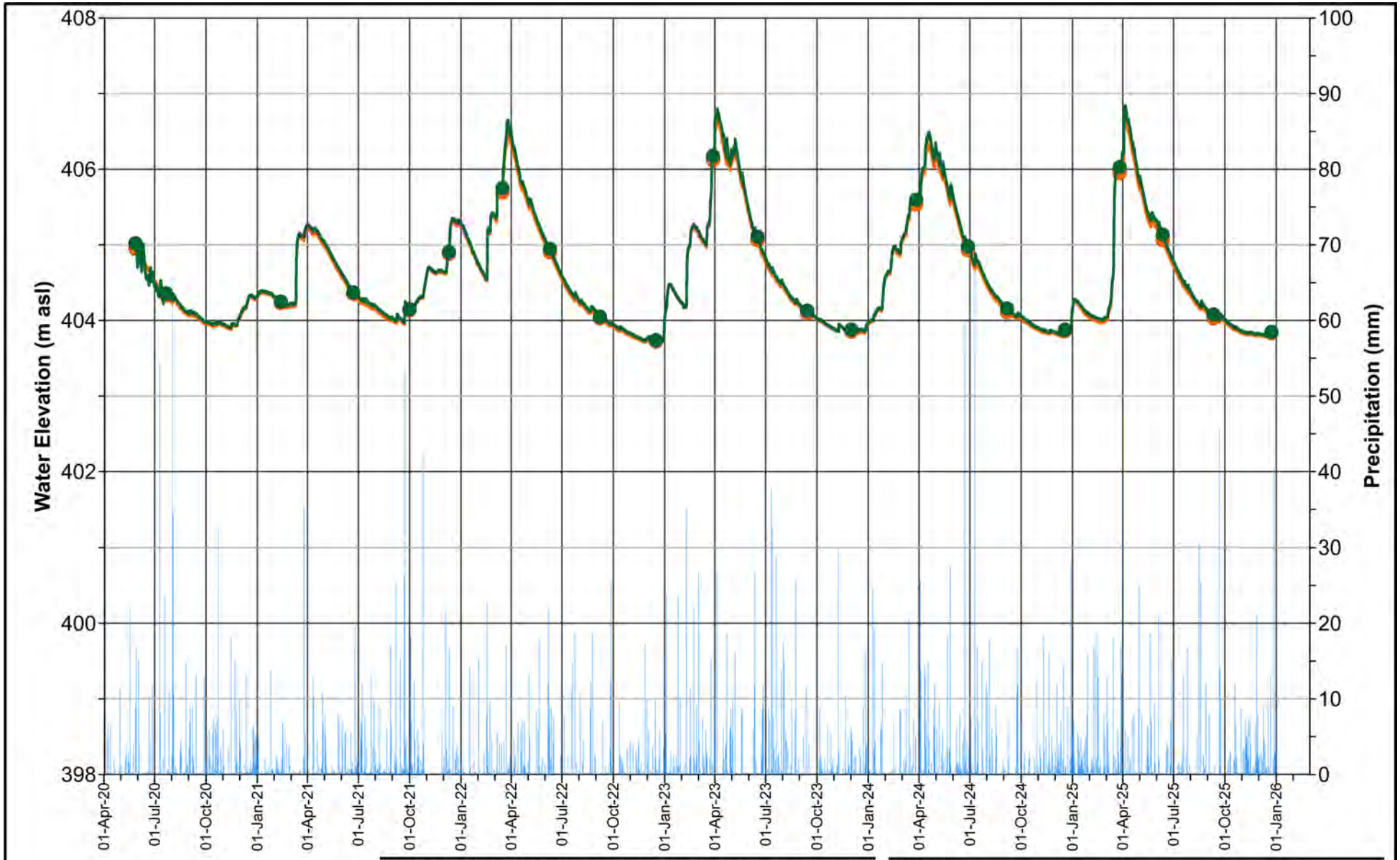
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-07**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A12



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations.

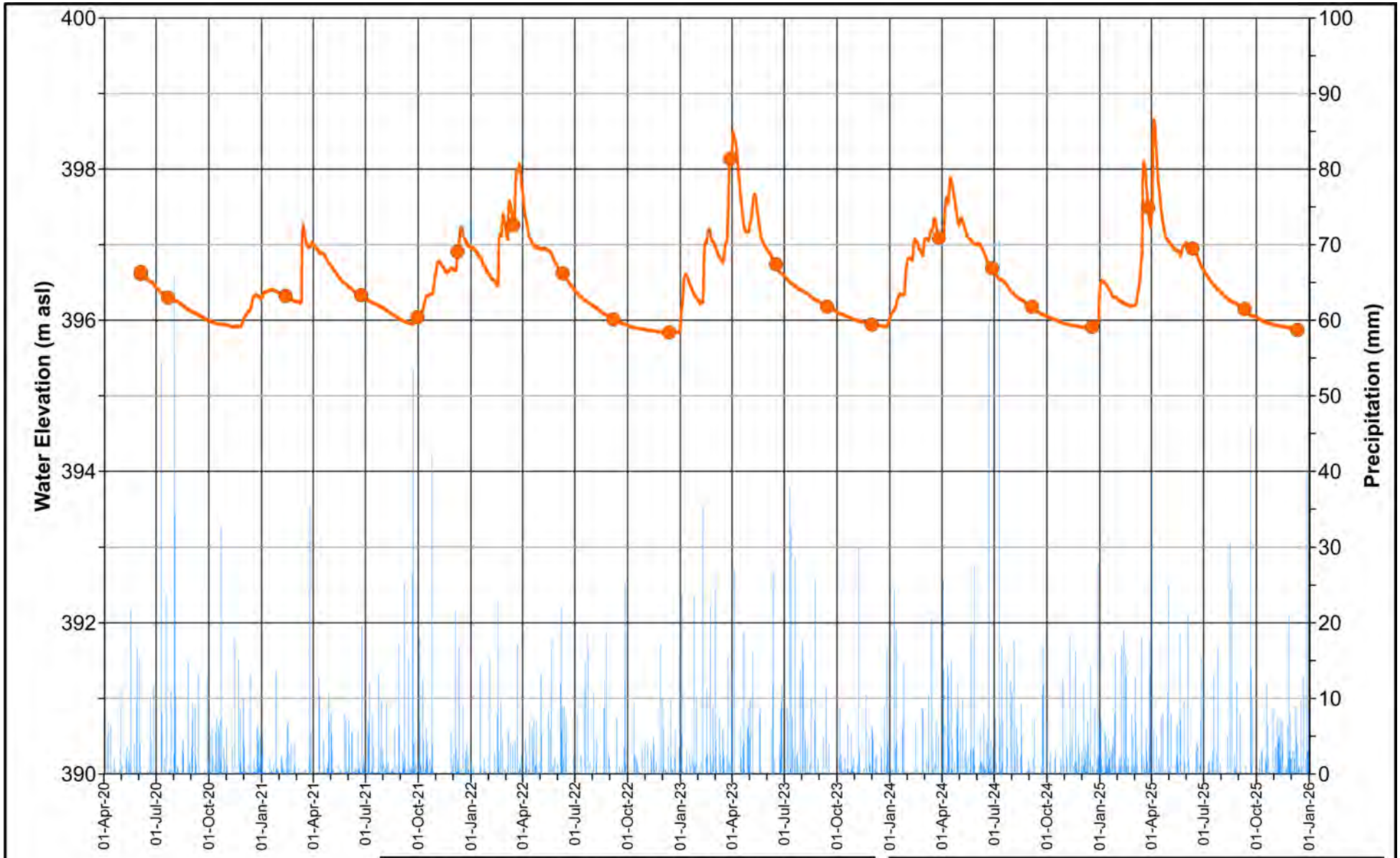
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-08**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A13



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations

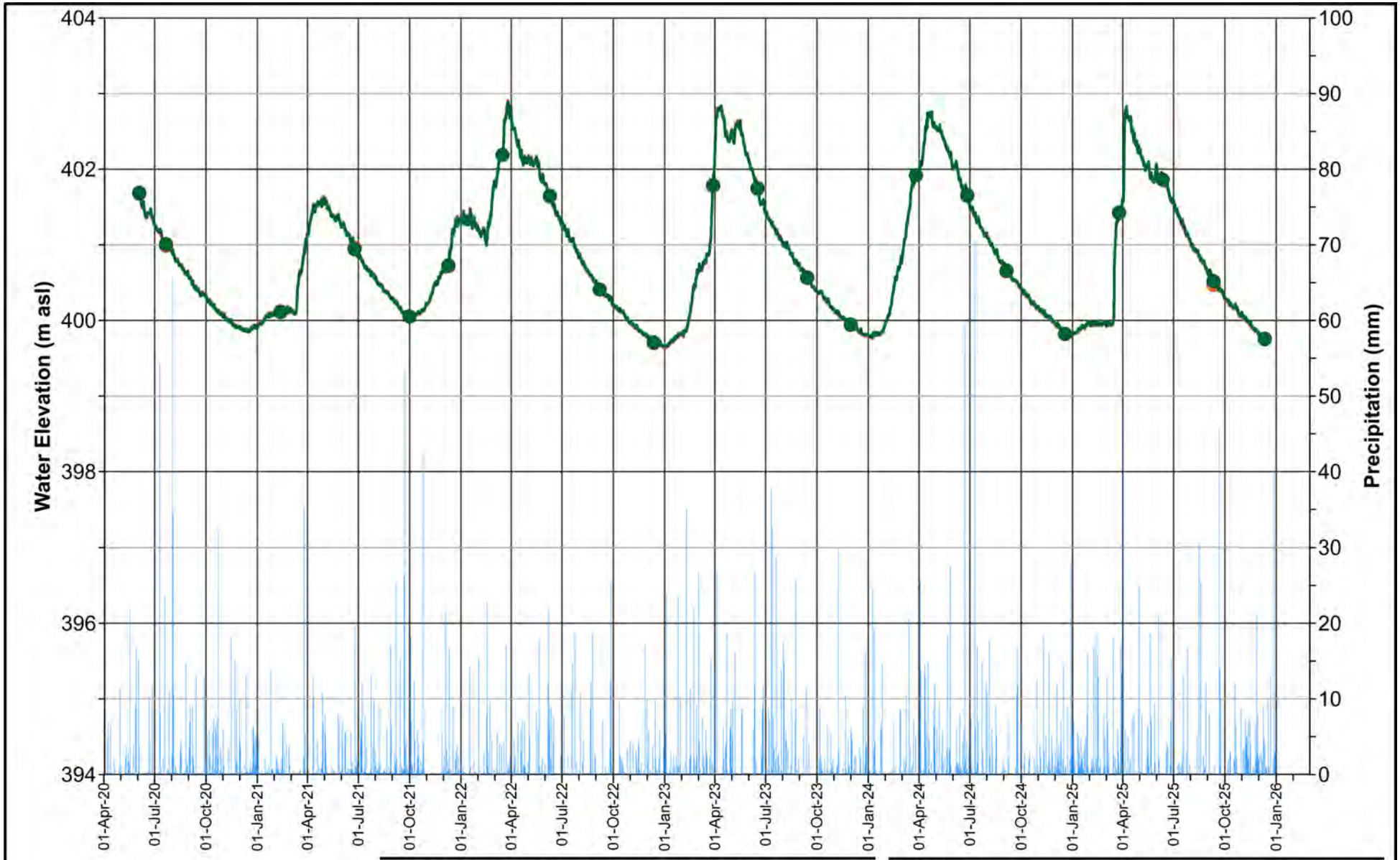
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-09**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A14



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations.

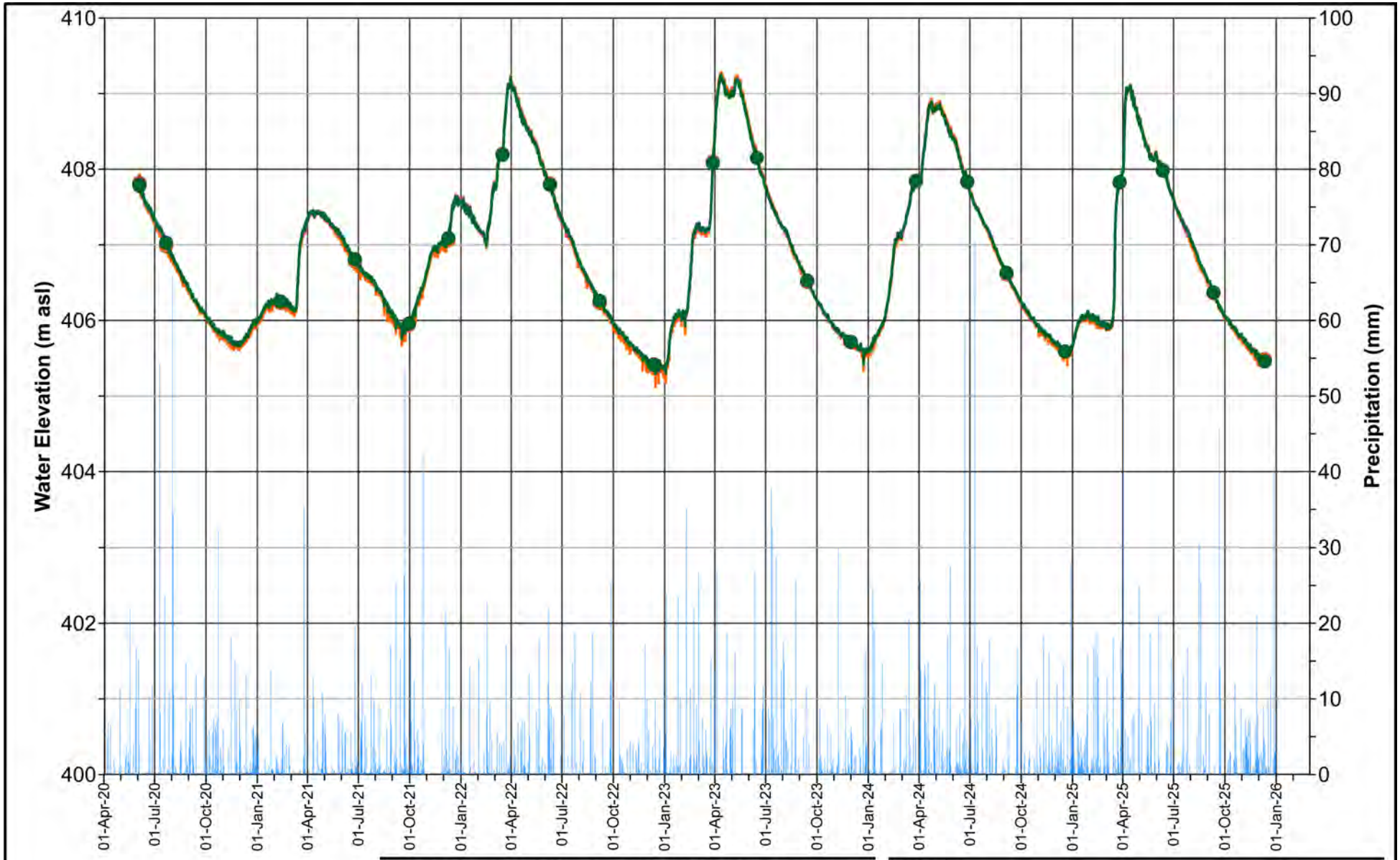
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-10**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A15



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations.

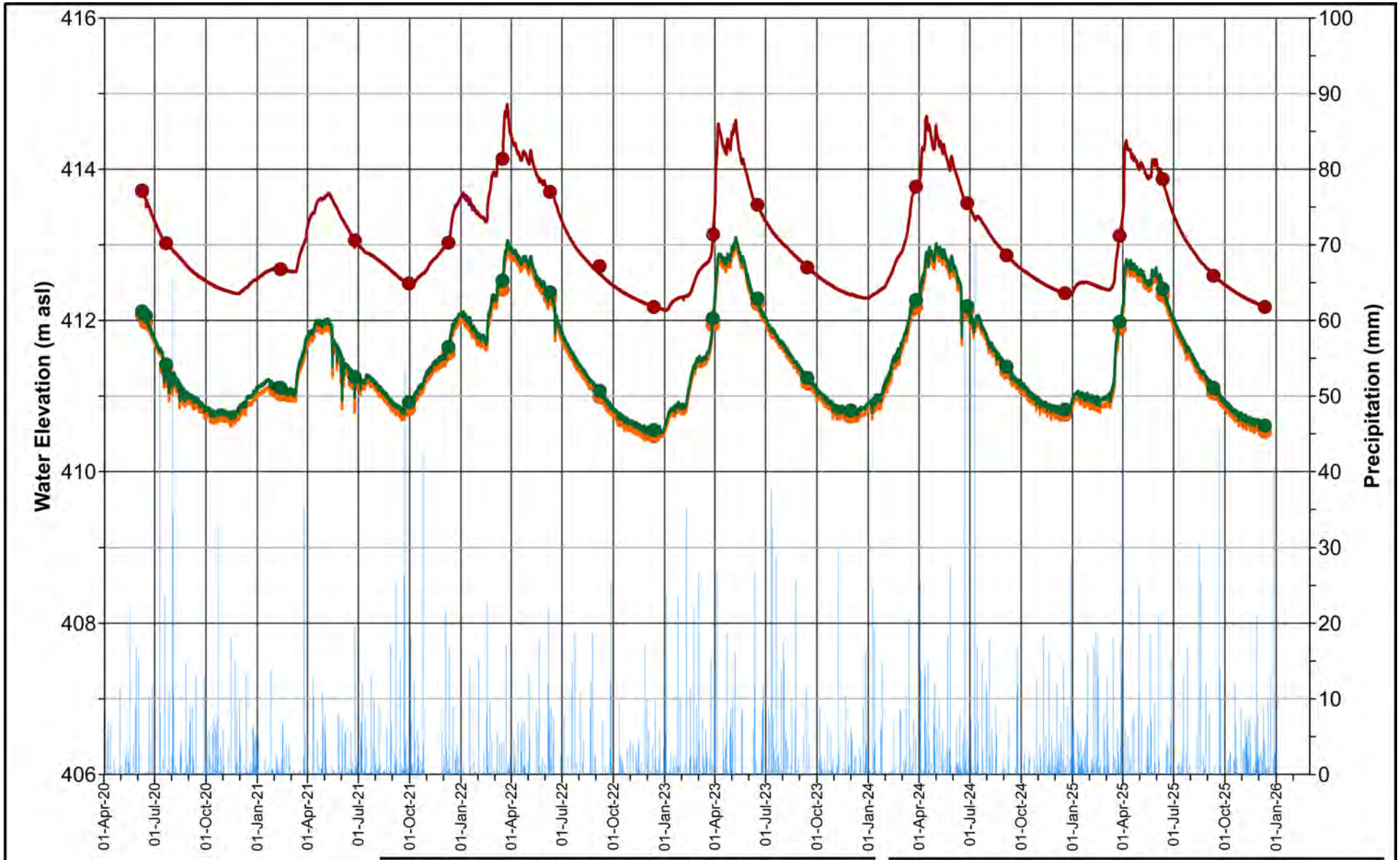
PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-12**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A16



Note: 1) Precipitation observed at Mono Centre (ID:6157000), Caledon Waste Management Facility (ID:8180003) and Fergus Shand Dam (ID:6142400) meteorological stations.

PROJECT

PROPOSED CBM CALEDON PIT / QUARRY HYDROLOGICAL MONITORING

TITLE **GROUNDWATER MONITORING HYDROGRAPH MW20-13**

DATE	February 2026
DESIGN	VRP
REVIEW	PGM
APPROVED	GRP

PROJECT NO.	REV	FIGURE
CA0037598.7018	A	A17



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