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March 21, 2025

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Dufferin Aggregates Paris Pit – 2024 Combined Annual Monitoring Report

Please find enclosed the Combined Annual Monitoring Report for the Dufferin Aggregates Paris Pit for the 2024 calendar year, required by the ARA Licence No. 5601, Amended PTTW No. 7481-C4BQTA and ECA (ISW) No. 0302-ALCK5W. Dufferin Aggregates is a CRH Company.

Hard copies of the report can be provided upon request.

Please do not hesitate to contact me if you have any questions or comments.

Yours sincerely,

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Dufferin Aggregates, a CRH Company

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2024 Combined Annual Monitoring Report

Dufferin Aggregates Paris Pit

Dufferin Aggregates, a CRH Company

21 March 2025

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1. Introduction

GHD was retained by Dufferin Aggregates, a CRH Company (Dufferin), to complete the 2024 Combined Annual Monitoring Report (AMR) for the Dufferin Paris Pit for the period between January 1 and December 31, 2024. This monitoring report was completed pursuant to and combines the associated monitoring results of:

– Ministry of Natural Resources (MNR) Aggregate Resource Act (ARA) Licence No. 5601
– Amended Permit to Take Water (PTTW) No. 7481-C4BQTA issued by the Ontario Ministry of the Environment, Conservation and Parks (MECP) on August 13, 2021
– Amended Environmental Compliance Approval (ECA) No. 3994-CCDR8L issued by the MECP on March 14, 2022

The Dufferin Paris Pit (Site) is located at 716 Watts Pond Road on Part Lot 27 in Concession 2, Part Lot 26 in Concession 3, and Part of Subdivision Lots 1, 2, and 3 in Concession 2 West of the Grand River and Part of the Canadian National Railway (CNR), in the County of Brant, Ontario. The Site location is presented on Figure 1.1. An area of 249 hectares (ha) is licensed under the ARA (Licence No. 5601), 207 ha of which are approved for extraction. A map of the Site and surrounding lands is presented on Figure 1.2.

The purpose of this 2024 Combined Annual Monitoring Report is to document the results of the 2024 monitoring program specified in the ARA Licence**,** PTTW, and ECA. Copies of the PTTW and ECA are provided in Appendix A and Appendix B, respectively.

The 2024 monitoring program and related activities included the following:

– Hydraulic monitoring (groundwater levels and surface water levels)
– Additional hydraulic monitoring (weekly events) in April to June 2024
– Water quality monitoring (groundwater, surface water, and recirculation cell)
– Measurement of water taking amounts

The Site-wide monitoring locations are presented on Figure 1.3, the monitoring well completion details are provided in Table 1.1, and the 2024 monitoring program is summarized in Table 1.2.

2. Background

2.1 Geologic/Hydrogeologic Setting

The geologic framework within the Site was characterized through evaluation of stratigraphic data from historical test pits, boreholes, and monitoring wells.

The historical test pit, borehole, and monitoring well stratigraphic data were used to prepare geologic/hydrogeologic cross sections (at cross-section locations illustrated on Figure 2.1), as presented in the Ontario Water Resources Act (OWRA) S34 Permit to Take Water Application and Supporting Hydrologic and Hydrogeologic Study (CRA, 2013), and updated herein on Figures 2.2 and 2.3 to show the historical maximum observed water table and the current extraction extents.

As shown on Figures 2.2 and 2.3, sand and gravel deposits of outwash origin are underlain by fine-grained (silt and clay) glacial till. The glacial till deposits are part of the regionally-extensive Port Stanley Till. Bedrock underlying the glacial till deposits was penetrated by a limited number of boreholes or monitoring wells within the Site. Regionally, bedrock is comprised of shale and bedded dolostone of the Salina Formation.

The outwash sand and gravel deposits form the upper unconfined aquifer. Within the Site area these deposits range in saturated thickness from approximately 7.5 metres (m) in the western portion of the Site to 0 m immediately northwest of the existing ponds (BH4-12) and in the central-eastern part of the Site. In this area, the upper part of the Port Stanley Till has a prominent northeast to southwest trending ridge defined by the 248.14 m above mean sea level (AMSL) top of till elevation at BH4-12 (GHD, 2021c). This ridge is located northwest of the existing natural ponds and restricts groundwater flow to and from the existing natural ponds under seasonal low groundwater table and surface water conditions. Outside of the Site, the saturated thicknesses of the outwash sand and gravel deposits are approximately 10 to 20 m at the Gilbert Wellfield and up to 34 m at the Telfer Wellfield.

Based on additional characterization in 2023, the till ridge identified at BH4-12 is believed to extend in a northeast to southwest orientation that roughly corresponds with the local topographic relief on-Site. As well, a second till ridge has been identified north of Watts Pond Road corresponding with the local topographic relief in that area. The approximate locations and extents of these features are presented on Figure 2.1.

2.2 ARA Licence

The Paris Pit was approved by the Province of Ontario for extraction of aggregates (sand and gravel) in 1974 under the provincial Pits and Quarries Control Act, 1971. In 1990, the ARA replaced the Pits and Quarries Control Act and the Site Plans were revised to reflect the necessary changes needed to meet the ARA Provincial Standards at that time. Subsequently, the Site Plans have been further updated and approved by the MNR from time to time. The most recent Site Plan Amendment was approved by MNR on January 13, 2023.

ARA Licence Requirements

The 2024 monitoring requirements for the ARA Licence No. 5601 are described below as specified in the Below Water Table Hydrogeological Impact Assessment and Level 2 Water Report (GHD, 2022b), which presented the technical requirements for the amendment which was issued on January 13, 2023:

– *Hydraulic (water level) monitoring three times per year at groundwater and surface water locations set for the purpose of the licence. Recording of water levels by transducers and data loggers at a regular frequency.*
  - Hydraulic monitoring was completed in May, August, and December 2024. All groundwater and surface water monitoring locations are equipped with dataloggers.

– *Water quality sampling three times per year from groundwater monitoring locations and surface water locations set for the purpose of the licence. The groundwater samples are analyzed for general chemistry and dissolved metals and the surface water samples are analyzed for general chemistry and total metals.*
  - Groundwater and surface water quality monitoring was completed in May, August, and December 2024. The groundwater samples were analyzed for general chemistry and dissolved metals and the surface water samples were analyzed for general chemistry and total metals.

– *Submission of an annual monitoring report to the MNR and the MECP.*
  - The 2024 Combined Annual Monitoring Report will be submitted to the MNR and MECP before March 31, 2025.

2.3 Permit to Take Water (PTTW)

In 2024 the Site operated under Amended PTTW No. 7481-C4BQTA dated August 13, 2021. A copy of the PTTW is provided in Appendix A.

The PTTW specifies terms and conditions regarding water taking limits, monitoring, reporting, and the response to well interference complaints, should they occur. These collected data are to be presented and interpreted in an annual report to be submitted to the MECP by March 31 for the 12-month period ending December 31 of each year.

Water Taking Limits

Table A of the PTTW allows water taking from the Source Pond (see Figure 1.2) for the purpose of aggregate washing, dust suppression, and vegetation watering at a flow rate not to exceed 10,000 L/min, for a maximum of 12 hours per day, to a maximum of 7,200,000 litres per day (L/day) for a total of 30 days per annum for the purpose of refilling the Settling and Recirculation cells (see Figure 1.2) after removal of accumulated sediment from these ponds or repairing the liner in the Recirculation Pond. For the remaining 200 days, the water taking shall be at a rate of no more than 1,400 L/min for 12 hours per day.

– *Condition 3.6: Water takings only occur between February 15 and December 31 of each year.*
  - Water takings occurred between March 2 and November 11 in 2024 (see Section 5.0).
– *Condition 3.7: If water is pumped from the Source Pond at lower than the maximum permitted rates, the saved water can be pumped in other days exceeding the total number of 230 days, provided the takings are between February 15 and December 31, the rate of taking shall not exceed 1,400 L/min (1,008,000 L/day), and the cumulative volume pumped in all days between February 15 and December 31 shall not exceed 417,600,000 litres annually.*
  - Water takings occurred between March 18 and November 11 in 2024 for a total of 155 days and a cumulative total of 245,218,212 litres. There were no exceedances of the PTTW maximum permitted rates in 2024 (see Section 5.0).
  - Pumping equipment is equipped with timed shutoff valve to prevent water taking greater than 12-hours per day.

Monitoring and Reporting Requirements

– *Condition 4.1: Record the daily water takings and rates.*
  - Water takings and rates were recorded daily for 2024 (see Section 5.0).
– *Condition 4.2 (a,b,c,d): Monitor groundwater levels in MW1-12, MW3-16, BH88-5-I and BH88-5-II with hourly dataloggers.*
  - The groundwater levels in MW1-12, MW3-16, BH88-5-I, and BH88-5-II were equipped with hourly programmed dataloggers that were generally monitored monthly, and on a weekly frequency in April through June 2024. Water level data are presented in Appendix C.
– *Condition 4.3: Monitor surface water levels in SW1A, SW1B and multi-level piezometers (MP1-S and MP2-S) with hourly dataloggers and calculation of vertical hydraulic gradients at the multi-level piezometers.*
  - The surface water levels in SW1A, SW1B and multi-level piezometers (MP1S/MP2S) were equipped with hourly programmed dataloggers and monitored in 2024. In addition, a new staff gauge (SG2B) was installed on June 4, 2021 to monitor the open water portion of the SW1B pond. Water level data are presented in Appendix C.
  - Vertical hydraulic gradients at the multi-level piezometers are presented in Section 4.4 and water elevations in each of MP1-S and MP2-S are provided graphically in Appendix C (Figure C.18).
– *Condition 4.4: Submit a Combined Annual Monitoring Report to MECP, Section 34.1 Director and the County of Brant.*
  - The groundwater levels, surface water levels, and other data collected from the Site are included in the 2024 Combined Annual Monitoring Report. The groundwater and surface water levels collected through the year are compared with the simulated water level changes in Section 4.3. The 2024 Combined Annual Monitoring Report will be provided to the MECP, Section 34.1 Director and the County of Brant by March 31, 2025.
– *Condition 4.5: Make the annual report available to the Community Advisory Panel and publicly by posting it on CRH's website.*
  - Dufferin will make the 2024 Combined Annual Monitoring Report available to the Community Advisory Panel and publicly by posting it on CRH's website by March 31, 2025.

– *Condition 4.6: All permit renewals and amendments (other than administrative amendments) will be accompanied by a hydrogeological assessment report that presents and discusses the data collected in Conditions 4.1, 4.2 and 4.3 and will be signed by a qualified person.*
    - No PTTW Amendments were submitted in 2024.
– *Condition 4.7: Continue to implement the Trigger Mechanism and Contingency Plan for both groundwater and surface water. This Plan will be reviewed and updated with approval by the MECP as necessary and at minimum every two years. This review can be completed as part of the Combined Annual Monitoring report.*
    - The Trigger Mechanism and Contingency Plan was implemented at the Site for both groundwater and surface water in 2024. Details of the monitoring are described in Section 4.

All of the PTTW monitoring and reporting requirements have been met.

2.4 Environmental Compliance Approval (ECA)

The Site operates under Amended ECA No. 3994-CCDR8L dated March 14, 2022. The ECA is provided in Appendix B. Amended ECA No. 3994-CCDR8L specifies the terms and conditions regarding monitoring and reporting at the Site. These collected data are to be presented and interpreted in an annual report to be submitted to the MECP by March 31 for the 12-month period ending December 31 of each year.

Monitoring & Reporting Requirements

The following provides a summary of ECA No. 3994-CCDR8L monitoring and reporting requirements and how they are addressed:

– *Condition 3.1 and 3.2: Develop and implement an operations manual prior to the construction, use and operation of the Works.*
    - The Operations Manual was developed and implemented prior to the construction, use, and operation of the Works. It was first issued December 28, 2015 and is updated periodically to reflect operational changes.
– *Condition 3.3: Develop a seal at the bottom of the settling pond (cells and recirculation cell).*
    - The seal at the bottom of the settling ponds (cells and recirculation cell) was initiated in September 2017 and is now completed. The recirculation pond was lined in November 2019. Additional information is provided in Section 3.2 and 3.3.
– *Condition 4.1: Groundwater monitoring from seven upper sand and gravel aquifer monitoring wells (BH88-2-I, BH88-6-I, MW1-12, MW3-16, MW4-16, MW5-16, and MW6-16).*
    - Groundwater monitoring was performed at the seven upper sand and gravel aquifer monitoring wells: BH88-2-I, BH88-6-I, MW1-12, MW3-16, MW4-16, MW5-16, and MW6-16; the results are discussed in Section 4.
– *Condition 4.2 and 4.3: Groundwater will be sampled from seven upper sand and gravel aquifer monitoring wells (BH88-2-I, BH88-6-I, MW1-12, MW3-16, MW4-16, MW5-16, and MW6-16) in May, August, and December each year and analyzed for general chemistry, dissolved metals, and pesticides (including organochlorine pesticides and herbicides).*
    - Groundwater was sampled from BH88-2-I, BH88-6-I, MW1-12, MW3-16, MW4-16, MW5-16, and MW6-16 in May, August, and December 2024 and analyzed for general chemistry, dissolved metals, and pesticides; the results are discussed in Section 6.
– *Condition 4.4: Surface water samples will be collected from SW1B in May, August, and December each year and analyzed for field parameters, general chemistry, total metals, oil & grease, and pesticides (including organochlorine pesticides and herbicides).*
    - Surface water was sampled from the SW1B Pond in May, August, and December 2024 and analyzed for field parameters, general chemistry, total metals, oil & grease, and pesticides; the results are discussed in Section 6.

– *Condition 4.6: Water samples collected from the recirculation pond and analyzed for general chemistry, nutrients, metals, and pesticides (including glyphosate, atrazine, atrazine desethyl and aminomethylphosphonic acid [AMPA]).*
    - Water samples from the recirculation cell were collected in May and November 2024 and analyzed for general chemistry, nutrients, metals, and pesticides. Additional information is provided in Section 3.3 and the results are discussed in Section 6.
– *Condition 5.1 to 5.3: Develop a Contingency and Pollution Prevention Plan prior to the commencement of the Works.*
    - A Contingency and Pollution Prevention Plan was developed prior to the commencement of the Works and submitted to the MECP on May 29, 2017 (email from Maria Topalovic [CRH] to Fariha Pannu [MECP] on May 29, 2017).
– *Condition 5.4: The plan required by Condition 5.1 shall be provided to the County of Brant and posted on the CRH website for a thirty (30) day comment period.*
    - The Contingency and Pollution Prevention Plan was provided to the County of Brant and posted on the CRH website on April 13, 2017 with the 30-day comment period completed on May 13, 2017.
– *Condition 6.1: Submit a spill report to the MECP District Manager within fifteen (15) working days of a reportable spill into the environment.*
    - No reportable spills occurred at the Site in 2024.
– *Condition 6.2: Submit an annual Report to the MECP District Manager within ninety (90) days following the end of the period being reported upon.*
    - The 2024 Combined Annual Monitoring Report will be submitted before the March 31, 2025 due date.
– *Condition 7: Make the annual report available to the Community Advisory Panel and publicly by posting it on the CRH website.*
    - The 2024 Combined Annual Monitoring Report will be made available to the Community Advisory Panel and the public on the CRH website by March 31, 2025.

All of the ECA monitoring and reporting requirements have been met.

A summary of the 2024 water level monitoring and sampling program as required by the ARA, PTTW, and ECA is provided in Table 1.2.

3. Pit Operations and Activities

3.1 2024 Monitoring Program

The 2024 Monitoring Program consisted of hydraulic monitoring at 22 groundwater monitoring well locations, two piezometer locations, two surface water features, and one supplemental off-Site monitoring well. Water quality sampling events were conducted on May 28/29, August 27/28, and December 4/5/6, 2024 at 18 groundwater monitoring wells installed on the property as well as one surface water monitoring location.

In 2024, water levels from a monitoring well located on an adjacent property owned by CRH (MW12-23) were included in this report.

The groundwater and surface water monitoring locations are provided on Figure 1.3, the monitoring well completion details are provided in Table 1.1, and the 2024 Monitoring Program is detailed in Table 1.2.

3.2 Settling Pond Operations

There were no significant issues encountered during operation of the Settling Pond in 2024. In May/June 2024, a macro-algae bloom within the recirculation cell interrupted pump operations by clogging the intake screen. The ECA Operation Manual (see Section 3.4) was updated to include maintenance procedures for addressing aquatic vegetation and algae within the recirculation cell.

3.3 Recirculation Pond Sampling

Water samples were collected at the beginning of the washing season, in May 2024, and before the end of the washing season, in November 2024. The water samples were collected from the recirculation pond adjacent to the pump intake using a telescoping swing arm sample rod.

The recirculation pond samples were analyzed for general chemistry, metals, and pesticides (including glyphosate, atrazine, atrazine desethyl and AMPA), as specified in Condition 4.7 of the ECA.

3.4 Operation, Inspection and Maintenance

The Operations Manual required in Condition 3 of the ECA has been completed, reviewed, updated as necessary, and implemented by the Site. It includes information pertaining to operating procedures for routine operations, inspection programs, repair and maintenance programs, contingency plans and procedures, and procedures for receiving and responding to public complaints.

The Contingency and Pollution Prevention Plan required in Condition 5 of the ECA has been completed, reviewed, and updated as necessary by the Site.

3.5 Adequacy of the Works

No operating problems were encountered at the Site in 2024 that required corrective actions or maintenance on major structures, apparatus, or mechanisms forming part of the Works.

4. Hydraulic Monitoring

Hydraulic monitoring (manual water level measurement) was performed three times as part of the regular monitoring program in 2024 for all groundwater and surface water monitoring locations around the Site in accordance with the Site Plans. More frequent monthly/weekly monitoring was completed at a select number of monitoring locations, as per Condition 4.7 of the PTTW - Trigger Mechanism and Contingency Plan (TMCP; GHD, 2017).

Groundwater depths were measured manually at 22 monitoring wells, two piezometers and one supplemental off-Site well using an electronic water level meter. Surface water elevations were measured manually at three locations (SW1A, SW1B, and SG2B) from surveyed instruments. Staff gauge location SG2B was installed proactively on June 4, 2021 to ensure monitoring of the main pond could continue should the SW1B monitoring location go dry and to establish a relationship between water levels within the wetland margins (SW1B) and the open pond area (SG2B).

Dataloggers were operating at all groundwater and surface water locations and were downloaded during each monitoring event. Two datalogger malfunctions were experienced in 2024:

– MW1-12 failure was identified on April 4, 2024 and replace on April 5, 2025; approximately 11 days of water levels were determined to be erroneous based on comparing water level trends at nearby well MW3-16.

– MW2-12 experienced as loss of calibration on July 10, 2024. The issue was temporarily resolved following monitoring on August 27, 2024 but again lost calibration on September 3, 2024. Failure was identified following sampling on December 6, 2024 and the datalogger was replaced on December 19, 2024.

The 2024 groundwater and surface water monitoring manual elevations are provided in Table 4.1, hydrographs of historical groundwater and surface water data are presented in Appendix C, including datalogger data.

Note that the last monitoring event for the groundwater and surface water locations at the Site was completed between December 4 and 5, 2024. The hydrographs in Appendix C show datalogger data up to the final monitoring event of 2024 at each location rather than the end of the year (December 31, 2024). Outstanding datalogger data will be presented in the 2025 AMR.

4.1 Precipitation

The 2024 daily and monthly precipitation data obtained from Environment Canada for Hamilton A (Airport) Station (I.D. #6153193) are presented on Figure 4.1 compared to the monthly Environment Canada Climate Normals (1981-2010) prepared for the Station #6153193.

As shown on Figure 4.1, precipitation totals varied month-to-month compared to historical average. However, on average the first half of the year was consistent with historical averages (January to June); approximately 97% of the historical average (425.6 mm vs 433.6 mm). The later half of the year (August to December) was approximately 73% of the historical average (286.4 mm vs 395.8 mm). July 2024 was notably above the historical average with 157.0 mm observed compared to the historical average of 100.7 mm. Precipitation in July was largely concentrated within three significant precipitation events: July 10/11 (54.5 mm), July 16 (49.8 mm), and July 24 (34.5 mm).

Overall, the 2024 total precipitation was 869 mm, compared to the 1981-2010 climate normal precipitation total of 930 mm (93% of the average annual precipitation).

Based on the hydrographs in Appendix C, the groundwater and surface water elevations measured in 2024 were within their typical historical ranges for each of the monitoring locations with water levels approaching historical peaks following heavy precipitation in July 2024.

4.2 Site-Wide Groundwater Elevations

Dufferin groundwater monitoring wells at or near the Site are screened in the unconfined overburden aquifer (BH88-1-I, BH88-2-I, BH88-4-I, BH88-4A-II, BH88-5-I, BH88-5-II, BH88-6-I, MW1-12, MW2-12, MW3-16, MW4-16, MW5-16, MW6-16, MW8-22, MW9-22, MW10-22, MW11-22, OW1-96B, OW1-96C, and MW12-23), and confined bedrock aquifer (BH88-4A-I, BH88-5A-I, and OW1-96A). The locations of the groundwater monitoring wells are shown on Figure 1.3. Groundwater elevations measured in 2024 are provided in Table 4.1.

Hydrographs showing 2024 and historical data for the groundwater monitoring wells completed in the overburden are provided on the lower and upper panels of Figure 4.2, respectively, and hydrographs of the groundwater monitoring wells completed in the bedrock are provided on Figure 4.3. Individual (or nested were applicable) hydrographs for all groundwater monitoring wells are provided in Appendix C.

Figure 4.2 and Figure 4.3 show the overall, generally stable water level patterns across the Site while the hydrographs in Appendix C detail the individual variations.

Seasonal groundwater contours were prepared for the Outwash Sand and Gravel Deposits (overburden) using groundwater elevation data collected between May 28 and 29, 2024, as presented on Figure 4.4. The May groundwater elevation contours show the typically seasonal high water table conditions (see, for example, Figure 4.2); however, in 2024 the seasonal high-water level was observed in July resulting from precipitation as discussed in Section 4.1.

Generally, the regional groundwater flow patterns remain unchanged (i.e., perpendicular to and toward the Grand River). Groundwater flow is generally in a southeasterly direction towards the Grand River with an average horizontal

hydraulic gradient of approximately 0.01 metre of head loss per metre along the groundwater flow path (m/m) and are consistent with historical flow patterns and average horizontal hydraulic gradients.

However, based on the additional characterization completed in 2023, the local groundwater flow patterns on Site have been refined. On-Site, within the unconfined overburden, subterranean low permeability till ridges appear to interrupt the generally southeastward groundwater flow direction and redirect the groundwater flow south-southwest within the higher permeability sand and gravel between the bounding till ridges. Observed groundwater flow patterns are presented on Figure 4.4. A higher permeability region is inferred to be located between the Source Pond and the SW1B and has been observed to correspond with seeps leading to the Southwest corner of SW1B during high water table conditions.

Contours for the historically observed maximum water table have also been developed for 2024 and are presented on Figure 4.5. Monitoring results for all unconfined overburden monitoring wells (both manual and datalogger measurements) were reviewed to identify the maximum observed groundwater elevation at each location. The elevations were then contoured to represent the approximate maximum observed water table across the Site. Recent ground surface contours (December 14, 2023) are also presented on Figure 4.5 for reference.

The bedrock groundwater levels show frequent cyclical drawdown to water levels (provided on Figure 4.3). This drawdown is attributed to pumping at nearby municipal bedrock wells for the Gilbert Wellfield (P28 and P29) and the Telfer Wellfield (P32).

In addition to the hydraulic monitoring described above, monitoring wells BH88-5-I, MW1-12, and MW3-16 were also monitored (typically monthly) as part of the Trigger Mechanism and Contingency Plan (Condition 4.7 of the PTTW), as described in Section 4.3, below.

Note that groundwater in the Upper Unconfined Aquifer at the Site is recharged vertically through infiltration of precipitation and from inflow from upgradient locations.

4.3 PTTW Groundwater and Surface Water Monitoring

The PTTW to allow water taking from the Source Pond was issued on April 27, 2017 and amended on August 13, 2021. The water taking is for the purpose of aggregate washing, dust control, and vegetation watering.

As required by Condition 4.7 of the PTTW, a TMCP was submitted and approved by the MECP on July 19, 2017. The purpose of the TMCP is to have an assessment and evaluation procedure in place to review water levels during the time when Dufferin is taking water from the Source Pond and establish an action plan to respond if key groundwater or surface water levels drop below predicted levels evaluated as part of the PTTW assessment.

PTTW Condition 4.2 and 4.3 requires continuous monitoring at BH88-5-I, BH88-5-II, MW1-12, MW3-16, SW1A, SW1B, MP1S, and MP2S (i.e., with a datalogger), the TMCP identified additional monitoring requirements for the following locations:

– BH88-5-I
– MW1-12
– MW3-16
– SW1B

In accordance with the PTTW Condition 4.4, groundwater and surface water elevations were compared to the simulated water level changes (drawdown) outlined in Section 6.1.2 of the PTTW Application and Supporting Hydrologic and Hydrogeologic Study (CRA, 2013).

For each of the four TMCP locations, historical lows based on analysis of monitoring data collected between 1988 and August 2016, early-warning threshold levels (EWTL), and trigger levels were established to facilitate monitoring during Source Pond operation as part of the TMCP.

Summaries of the trigger mechanism water elevations for 2024 are presented on Figures 4.6a through 4.6d for BH88-5-I, MW1-12, and MW3-16 and SW1B, respectively. Also shown on these hydrographs are the 2015 to 2024 water elevation data, historical water elevation ranges, EWTLs, and trigger levels following establishment in 2017.

In 2024, each of the trigger monitoring groundwater wells (BH88-5-I, MW1-12, and MW3-16) showed groundwater levels that were generally within the typical range. Pumping from the source pond at the higher approved rates in late March and early April 2024 resulted in a drop in the water table below the EWTL; however, a reduction in pumping rates to less than the lower approved rates, as described below, combined with precipitation and groundwater inflow, allowed for water levels to recover to within historical ranges (and above the EWTL).

Following monitoring on March 28, 2024 and identification of the water levels below the EWTL and historical range in the preceding month at MW3-16, weekly monitoring was initiated and pumping rates were reduced (as required by the TMCP). MW1-12 and MW3-16 were also observed below the EWTL and historical range in mid-May. Weekly monitoring ceased on June 14, 2024 following a month of water levels above the respective EWTLs.

Throughout 2024, datalogger checks were completed at trigger well locations on a minimum monthly frequency to ensure continued operation and continuous recording [per Condition 4.2(d) of the PTTW]. Monitoring may occur more frequently or less frequently based on Site condition observations and routine reviews of the monitoring data.

4.4 Surface Water and Piezometer Level Elevations

Further to the TMCP discussion in Section 4.3, Surface water elevations are measured at locations SW1A (small pond), SW1B (main pond at edge), and SG2B (open water portion of main pond) as well as two piezometers; MP1S and MP2S. MP1D was decommissioned in 2017, as noted in the 2017 annual monitoring report. Currently, the multilevel piezometers are being monitored as "shallow" (MP2S) and "deep" (MP1S) to monitor the hydraulic connection and vertical flow directions.

Surface water monitoring locations are shown on Figure 1.3 and surface water elevations measured in 2024 are provided in Table 4.1.

Surface water elevation hydrographs are presented in Appendix C for locations MP1S/MP2S (Figure C.18), SW1A (Figure C.19), and SW1B/SG2B (Figure C.20). The surface water elevations in the SW1B pond are generally about 1 m higher than the elevation in the small downgradient (SW1A) pond to the southeast.

The surface water elevations in 2024 were at the low end of the historical ranges in the first half of 2024 and increased to above the historical range following precipitation events in July 2024. Surface water levels remained high for the remainder of 2024.

The SW1B Pond is monitored as part of the TMCP (Condition 4.7 of the PTTW). As shown on Figure 4.6d, the water elevations were on the lower end of historical observations in early April, although the historical range in the Spring is narrow. After July 2024, water levels remained above the historical range.

As presented on Figure 1.3, feature SW1B is installed within the wetland fringe. This is to allow for routine monitoring access; this location was used to develop the TMCP targets. In 2021, as surface water elevations decreased into the summer, SG2B was proactively installed within an open water portion of the wetland to ensure continuous data collection should SW1B dry out.

In 2021 and again in 2022, surface water elevations at SW1B dropped below the ground surface at that feature. Instrument SW1B, however, is advanced as a shallow piezometer within the wetland soils which allows for continuous data collection following a dry-out of the wetland fringe. It should be noted that, during these times, surface water elevations at SG2B are often recorded at a slightly lower elevation than SW1B following precipitation events. This is attributed to a slower rate of infiltration within the fringe soils/vegetation resulting in higher recorded elevations at SW1B following small to mid-size precipitation events which stabilize with the open pond water elevations within a few days to weeks. SW1B elevations continue to be used for comparison to the TMCP as that feature, in that location, was used to develop the historical ranges.

Vertical Hydraulic Gradient

In accordance with Condition 4.3 of the PTTW, calculation of the vertical hydraulic gradients at the multi-level piezometers is required.

Figure C.18 (in Appendix C) shows the hydrograph of the "shallow" piezometer location, MP2S, and the "deep" piezometer location, MP1S. The piezometer screen lengths are approximately 0.75 m.

The water level data and hydrographs for 2024 show an upward vertical hydraulic gradient occurs between the shallow (MP2S) and deep (MP1S) piezometers.

The following is an example vertical hydraulic gradient calculation from the May 29, 2024 monitoring data:

$$\text{Vertical Hydraulic Gradient} = \frac{\text{Difference in water level elevation}}{\text{Vertical distance between midpoints of piezometer screen elevations}}$$

$$\text{Vertical Hydraulic Gradient} = \frac{(244.26 - 244.20)}{(242.25 - 243.10)}$$

$$\text{Vertical Hydraulic Gradient} = \frac{(0.06)}{(-0.85)}$$

$$\text{Vertical Hydraulic Gradient} = -0.07 \text{ (i.e., upward)}$$

The upward vertical hydraulic gradient in the piezometer locations confirms groundwater discharges to the SW1B (main pond) feature. Following periods of heavy precipitation, the upward vertical hydraulic gradient may be reduced to near zero and, for short durations, and short duration flow reversals can be noted in the transducer data as a result of the infiltration of precipitation (see, for example, water levels on March 31/April 1st, 2023 on Figure C.18). As shown on Figure C.18, the long-term upward gradient has been evident since 2017 monitoring was established and was maintained in 2024.

5. Water Taking

In 2024, the Site operated under PTTW No. 7481-C4BQTA dated August 13, 2021. The PTTW is provided in Appendix A.

The maximum pumping rate allowed for the Source Pond under the PTTW is 10,000 L/min for a maximum of 12 hours per day to a maximum of 7,200,000 L/day. As specified in Condition 3.4, the “Taking Specific Purpose” includes aggregate washing, dust suppression, and watering vegetation. As specified in Condition 3.5, the allowed rate of taking from the Source Pond may only be at the rate in Table A (i.e., 10,000 L/min) for a total of 30 days per annum for the purpose of refilling the settling and recirculation ponds after removal of accumulated sediment from these ponds or repairing the liner in the recirculation pond with the remaining 200 days at a rate of no more than 1,400 L/min for 12 hours per day. As specified in Condition 3.5(i) and Condition 3.5(ii), water taken during a 12-hour period between a Sunday and the following Monday (or in the case of a long weekend, a holiday Monday and Tuesday) will be measured and shall be recorded as being taken on the Sunday (or holiday Monday). As specified in Condition 3.6, water takings will only occur between February 15 and December 31 of each year. As specified in Condition 3.7, if water takings from the Source Pond are at a lower than maximum permitted rate, the saved water can be pumped in other days exceeding the total number of 230 days, provided water takings occur between February 15 and December 31, inclusive. The rate of taking shall not exceed 1,400 L/min, 1,008,000 L/day, and the cumulative volume pumped in all days from February 15 to December 31 shall not exceed 417,600,000 litres annually.

Water takings are calculated using measurements obtained from a flow meter. The cumulative pump operating hours are recorded with an hour meter. Pumping equipment is equipped with a timed shutoff valve to prevent water taking greater than 12 hours per day.

These data were recorded daily by Dufferin personnel during the operating season. No water taking occurred outside of the operating season.

The rate of taking is determined by dividing the total flow in a period by the total number of pumping hours in that same period.

5.1 Water Taking Data

The water takings and rates were recorded daily for 2024 and are provided in Table 5.1.

The aggregate washing operation balances the amount of water taking with the need for top up water in the system and the water levels in the two main trigger level monitoring wells (MW3-16 and MW1-12). Dufferin manages and monitors water takings and only take water on an as-needed basis.

The maximum water taking rate and total occurred on March 25, 2024 at a rate of 9,384 L/min (6,700,158 L total). Of the available 30 days of pumping to a maximum 10,000 L/min, 24 were used in 2024 with a combined average rate of taking of 7,927 L/min (significantly less than the permitted rate of 10,000 L/min). There were no exceedances of the higher water taking rate of 10,000 L/min in 2024. There were no exceedances of the lower water taking rate of 1,400 L/min during the applicable period in 2024.

Water takings occurred between March 18 and November 11 in 2024 for a total of 155 days and a cumulative total of 245,218,212 litres. There were no exceedances of the PTTW maximum permitted rates or limits in 2024.

6. Analytical Results

Groundwater and surface water quality monitoring is required as part of the ARA Licence and ECA. The 2024 monitoring program is summarized in Table 1.2.

Site-wide water quality sampling was performed on three occasions in 2024 to determine the groundwater and surface water quality at the Site. Prior to collecting any groundwater samples, the groundwater monitoring wells were purged and field parameters (typically pH, conductivity, turbidity, oxidation-reduction potential, dissolved oxygen, and temperature readings) were measured and recorded to ensure that representative groundwater samples were collected. Field parameters were also recorded at the surface water sample location during the sampling activities. Groundwater samples were field-filtered for dissolved metals. The groundwater and surface water samples were collected in laboratory-supplied analyte-specific sample containers, preserved according to laboratory requirements, and delivered in coolers, on ice, under chain-of-custody procedures. Samples were received and analyzed by ALS Laboratories, located in Waterloo, Ontario. Laboratory results were reviewed and validated by a GHD chemist to confirm acceptability of the laboratory results; all 2024 results were considered acceptable for use with the noted qualifiers.

The 2024 validated analytical results are provided in Tables 6.1 to 6.6.

6.1 Groundwater Quality

Groundwater analytical results for 2024 are summarized in Tables 6.1 to 6.3.

Routine groundwater samples were collected from 18 monitoring well locations around the Site during the May, August, and December sampling events, as summarized in Table 1.2.

The groundwater samples were analyzed for general chemistry and dissolved metals. Seven of the monitoring wells were also analyzed for pesticides (including organochlorine pesticides and herbicides), as specified in Condition 4.3 and 4.4 of the ECA.

The groundwater analytical results were compared to the 2020 Ontario Drinking Water Quality Standards, Objectives and Guidelines (ODWQS) including the Aesthetic Objective and Operation Guidelines (revised June 2006). The monitoring well groundwater quality is compared to the ODWQS for illustrative purposes only since the ODWQS pertain to municipal water supply and are not directly applicable to groundwater quality.

Consistent with the ECA requirements, some analyses were run to relatively low laboratory detection limits, well below those typically used for drinking water supply systems. No pesticides, atrazine, or metabolites were detected in any of the groundwater samples collected from monitoring wells during any of the monitoring events in 2024.

Parameter concentrations for the 2024 sampling events were generally comparable to historical results and met the ODWQS, with the following exceptions:

– Hardness concentrations were above the ODWQS of 100 mg/L in all groundwater samples from monitoring wells during all 2024 monitoring events. Hardness concentrations have historically always been above the ODWQS in the groundwater samples in all monitoring well locations. In 2024 concentrations ranged from 238 to 554 mg/L and are within the historical detected range of concentrations between 164 and 730 mg/L. Hardness is a natural occurrence in this region and is characteristic of the local groundwater being influenced by carbonate-bearing overburden and the underlying carbonate bedrock. The ODWQS for hardness is an operational guideline for municipal water supply and is not considered a health concern.
– Nitrate concentrations were slightly above the ODWQS of 10 mg/L in BH88-1-I, BH88-2-I, BH88-4-I, MW5-16 and MW8-22 with concentrations ranging from 10.3 (duplicate results at MW5-16 in August 2024) to 14.2 mg/L (MW8-22 in May 2024). Nitrate concentrations have historically been above the ODWQS in the groundwater samples at each of these monitoring locations. The nitrate concentrations are comparable to historical results in the area (both on-Site and off-Site) and generally are the result of upgradient agricultural land use. Nitrate has also been a long-term issue for the County of Brant Gilbert/Telfer water supply wells and is unrelated to the Paris Pit aggregate operations.
– Total dissolved solids (TDS) concentrations were above the ODWQS of 500 mg/L in BH88-5A-I for the May, August, and December events with concentrations of 701, 727, and 764 mg/L, respectively. The elevated concentrations of TDS reflect the increased calcium and sulphate concentrations within the bedrock aquifer at BH88-5A-I and are a natural occurrence. TDS was also above the ODWQS at MW2-12 in August and December 2024 at concentrations of 561 and 678 mg/L. TDS concentrations at MW2-12 are likely associated with the installation and operation of the septic system at the site office located approximately 100m southwest of MW2-12 which was commissioned in Spring 2023. Operation of the new office commenced in 2023 and utilizes water obtained from a bedrock supply well. The ODWQS standard reflects an aesthetic objective related to taste and is not considered a health concern.
– Dissolved aluminum was above the ODWQS of 0.1 mg/L in BH88-4A-II (December 2024) at a concentration of 0.23 mg/L. This monitoring well location has had periodic historical detections above the ODWQS. Dissolved aluminum is naturally occurring and is considered an aesthetic objective and is not a health concern.
– Dissolved iron was above the ODWQS of 0.3 mg/L in BH88-5A-I (May and December) and in BH88-6-I (December) with concentrations ranging from 0.35 mg/L (BH88-5-AI in December) to 0.565 mg/L (BH88-6-I in December). Each of these monitoring well locations have had historical detections above the ODWQS. Dissolved iron is naturally occurring and is considered an aesthetic objective and is not a health concern.
– Dissolved Manganese was above the ODWQS of 0.05 mg/L at BH88-6-I (December) at a concentration of 0.0558 mg/L. This monitoring well has had historical detections above the ODWQS. Dissolved manganese is naturally occurring and is considered an aesthetic objective and is not a health concern.

Historical groundwater quality analytical data was presented in the 2021 annual monitoring report (GHD, 2022a) and on an annual basis thereafter.

6.2 Surface Water Quality

Surface water analytical results for 2024 are summarized in Tables 6.4 to 6.6.

Surface water samples were collected from SW1B (main pond) during the May, August, and December monitoring events.

The SW1B (main pond) surface water analytical results were compared to the Provincial Water Quality Objectives (PWQO; MECP July 1994, revised February 1999), which are generally applicable to surface water results. The comparison is for illustrative purposes as many factors influence the water quality of the pond.

SW1B

The SW1B samples were analyzed for field parameters, general chemistry, total metals, oil & grease, and pesticides (including organochlorine pesticides and herbicides), as specified in Condition 4.5 of the ECA.

No pesticides, atrazine, or atrazine metabolites, or glyphosate were detected in any of the SW1B water samples.

Parameter concentrations in SW1B for the 2024 sampling events were generally comparable to historical results and met the PWQOs, with the following exceptions:

– Aluminum was above the PWQO of 0.075 mg/L in December at a concentration of 0.0882 mg/L. Aluminum concentrations have historically been above the PWQO on occasion ranging between 0.105 to 3.2 mg/L. Since the objective for aluminum is a clay-free sample and the submitted sample was not filtered, this could account for the elevated aluminum level. The dissolved (filtered) aluminum result was not detected at 0.005 mg/L; below the PWQO.
– Phosphorus was above the PWQO of 0.01 mg/L in December at a concentration of 0.152 mg/L. Phosphorus concentrations have historically been above the PWQO on occasion ranging between 0.035 to 0.85 mg/L. Phosphorus was not detected in the other two samples taken in 2024.

Historical surface water quality analytical data was presented in the 2021 annual monitoring report (GHD, 2022a) and on an annual basis thereafter.

It should be noted that nitrate concentrations at SW1B in 2024 (and historically) were significantly lower than local groundwater concentrations; ranging from non-detect to 1.28 mg/L in 2024. These results continue to demonstrate the beneficial nitrate consuming effects of wetland and open water features.

6.3 Recirculation Pond Water Quality

Samples of wash water were collected in May and November 2024 from the recirculation cell, as required by ECA Condition 4.6 and 4.7. A duplicate sample was collected during each of the sampling events as part of the QA/QC measures. The water samples were collected from the recirculation cell adjacent to the pump using a telescoping swing arm sample rod.

Sample results are reported in Tables 6.4, 6.5, and 6.6 and compared to the PWQO; however, the recirculation cell water is not directly comparable to the PWQO's as the recirculation cell is part of the approved sewage works while the PWQOs apply to "natural water".

The recirculation pond samples were analyzed for general chemistry, total metals and pesticides (including glyphosate, atrazine, atrazine desethyl and AMPA), as specified in Condition 4.7 of the ECA.

No pesticides, atrazine, or atrazine metabolites, or glyphosate were detected in any of the recirculation pond water samples.

Nitrate concentrations in the Recirculation Pond ranged from 2.72 to 3.52 mg/L in 2024. The concentrations in the Recirculation Pond were stable in 2024 and below concentrations observed in the regional groundwater used to supply water to the washing operation. These results demonstrate that operation of the recirculating aggregate washing system does not accumulate nitrate in the recirculated wash water nor does the washing operations contribute to elevated nitrate concentrations in regional groundwater.

7. Response to Public Inquiries

No complaints were received by Dufferin in relation to the PTTW, ECA, or other water-related matters. Dufferin and GHD are not aware of any public inquiries reported to the MECP during the 2024 calendar year. There are currently no outstanding public inquiries or complaints.

8. Conclusions

The monitoring program at the Paris Pit was completed to satisfy the monitoring requirements of the Site ARA Licence, PTTW and ECA. Based on the results of the 2024 monitoring program the following conclusions are drawn:

- The water taking and aggregate washing operations have not caused any water (surface water or groundwater) quantity interference issues.
- No appreciable impacts to the surface or groundwater quality or quantity at the Paris Pit or nearby areas is indicated to have occurred as a result of aggregate washing operations.
- No pesticides, glyphosate, atrazine, or atrazine metabolites were detected in surface water or groundwater.
- No complaints were received by Dufferin in relation to the PTTW, ECA, or other water-related matters. Dufferin and GHD are not aware of any public inquiries reported to the MECP during the 2024 calendar year. There are currently no outstanding public inquiries or complaints.

9. References

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All of Which is Respectfully Submitted,

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Tables

Table 1.1

Monitoring Well Completion Details
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Monitoring Location	Easting	Northing	Completion Date	Ground Surface Elevation (m AMSL)	Top of Riser Reference Elevation (m AMSL)	Borehole Completion Depth (m bgs)	Borehole Completion Elevation (m AMSL)	Screened Interval (m bgs) Top - Bottom	Screened Interval (m AMSL) Top - Bottom	Screened Lithology
BH88-1-I	550356.0	4787344.2	12/6/1988	271.28	272.16	24.10	247.18	18.30 - 19.82	252.98 - 251.46	Fine Sandy Silt
BH88-2-I	551201.9	4786061.5	12/5/1988	261.38	262.78	21.90	239.48	9.70 - 11.22	251.68 - 250.16	Sand & Gravel
BH88-3-I[(1)]	550506.4	4785718.6	11/28/1988	254.45	254.76	15.90	238.55	10.80 - 11.60	243.65 - 242.85	Sand & Gravel
BH88-4-I	552093.9	4785866.3	12/1/1988	250.39	251.76	21.30	229.09	16.78 - 18.30	233.61 - 232.09	Sand
BH88-4A-I	552093.9	4785866.3	10/31/1990	250.39	251.47	35.60	214.79	33.80 - 35.20	216.59 - 215.19	Gravel & Bedrock
BH88-4A-II	552093.9	4785866.3	10/31/1990	250.39	251.50	28.00	222.39	25.10 - 26.60	225.29 - 223.79	Sand & Gravel
BH88-5-I	550602.2	4784729.1	11/23/1988	253.78	255.15	22.90	230.88	16.50 - 17.00	237.28 - 236.78	Sand & Gravel
BH88-5-II	550602.6	4784727.6	11/23/1988	253.78	254.77	14.81	238.97	10.10 - 10.90	243.68 - 242.88	Sand & Gravel
BH88-5A-I	550601.3	4784732.5	10/30/1990	253.78	255.08	33.20	220.58	30.50 - 32.00	223.28 - 221.78	Till & Bedrock
BH88-6-I	551466.6	4784711.6	11/30/1988	239.84	240.91	16.20	223.64	6.90 - 7.90	232.94 - 231.94	Sand & Gravel
MW1-12	550862.3	4784816.3	7/20/2012	253.34	254.25	16.46	236.88	12.80 - 15.85	240.54 - 237.49	Sand
MW2-12	551134.7	4785232.0	7/23/2012	244.36	245.31	5.33	239.03	2.74 - 4.27	241.62 - 240.09	Sand & Gravel
MW3-16	550873.7	4784649.2	1/14/2016	248.38	249.43	17.68	230.70	6.10 - 9.14	242.28 - 239.24	Sand & Gravel
MW4-16	552215.7	4785691.7	1/18/2016	243.37	244.39	17.68	225.69	11.58 - 14.63	231.79 - 228.74	Sand
MW5-16	550307.8	4785694.2	1/19/2016	252.70	253.69	12.19	240.51	9.14 - 12.19	243.56 - 240.51	Sand
MW6-16	551758.8	4786057.5	1/15/2016	250.47	251.42	11.43	239.04	8.23 - 11.28	242.24 - 239.19	Sand
MW7-18[(2)]	550994.8	4785280.9	4/24/2018	256.56	255.85	13.72	242.84	8.99 - 13.56	247.57 - 243.00	Sand & Gravel
MW8-22	550962.5	4785984.6	1/6/2022	259.55	260.385	15.24	244.30	9.14 - 12.19	250.40 - 247.35	Sand & Gravel
MW9-22	550797.6	4786331.0	1/7/2022	258.42	259.122	18.29	240.13	13.11 - 16.15	245.32 - 242.27	Sand & Gravel
MW10-22	550430.3	4785595.1	1/10/2022	249.26	250.041	13.72	235.55	9.14 - 12.19	240.12 - 237.07	Sand & Gravel
MW11-22	550643.8	4785097.6	1/11/2022	246.98	247.840	12.19	234.78	7.62 - 10.67	239.35 - 236.31	Sand & Gravel
MW12-23	551607.0	4786577.8	3/30/2023	259.32	260.26	18.29	241.04	5.91 - 8.97	253.41 - 250.35	Sand & Gravel
MP1S	550967.9	4784896.1	5/26/2016	244.32	245.93	2.45	241.87	1.69 - 2.45	242.63 - 241.87	Sand & Gravel
MP1D	550967.4	4784896.2	5/26/2016	244.40	245.41	4.21	240.19	3.45 - 4.21	240.95 - 240.19	Sand & Gravel
MP2S	550967.4	4784896.2	11/9/2017	244.25	245.20	1.53	242.72	0.78 - 1.53	243.47 - 242.72	Sand & Gravel
OW1-96A	551977.9	4785564.5	1996	249.22	249.73	36.80	212.42	33.6 - 36.6	215.62 - 212.62	Bedrock
OW1-96B	551977.9	4785564.5	1996	249.23	249.72	25.26	223.97	23.6 - 25.1	225.63 - 224.13	Overburden (Int)
OW1-96C	551977.9	4785564.5	1996	249.24	249.70	16.43	232.81	14.6 - 16.1	234.64 - 233.14	Overburden (Upp)

Notes:

(1) Monitoring well has been destroyed
(2) Location decommissioned in November 2022 prior to extraction
NA Location not surveyed
m AMSL Metres above mean sea level
m bgs Metres below ground surface

Table 1.2

2024 Monitoring Program
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Monitoring Locations	PTTW[1]	ECA[2]	ARA[3]	Pressure Transducer	TMCP Water Level Monitoring [1]	Manual Water Level Monitoring[4]	Sampling Freqency	Field Parameters	General Chemistry	Dissolved Metals	Total Metals	Pesticides & Herbicides
BH88-1-I			X	X[3]		X	3/year[4]		X[3]	X[3]		
BH88-2-I		X	X	X[3]		X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
BH88-4-I			X	X[3]		X	3/year[4]		X[3]	X[3]		
BH88-4A-I			X	X[3]		X	3/year[4]		X[3]	X[3]		
BH88-4A-II			X	X[3]		X	3/year[4]		X[3]	X[3]		
BH88-5-I	X		X	X[1,3]	X	X	3/year[4]		X[3]	X[3]		
BH88-5-II			X	X[1,3]	X	X	3/year[4]		X[3]	X[3]		
BH88-5A-I			X	X[3]		X	3/year[4]		X[3]	X[3]		
BH88-6-I		X	X	X[3]		X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW1-12	X	X	X	X[1,3]	X	X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW2-12			X	X[3]		X	3/year[4]		X[3]	X[3]		
MW3-16	X	X	X	X[1,3]	X	X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW4-16		X	X	X[3]		X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW5-16		X	X	X[3]		X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW6-16		X	X	X[3]		X	3/year[2,4]		X[2,3]	X[2,3]		X[2]
MW8-22			X	X[3]		X	3/year[4]		X[3]	X[3]		
MW9-22			X	X[3]		X	3/year[4]		X[3]	X[3]		
MW10-22			X	X[3]		X						
MW11-22			X	X[3]		X	3/year[4]		X[3]	X[3]		
MW12-23				X[6]		X[6]						
OW1-96A[5]				X		X						
OW1-96B[5]				X		X						
OW1-96C[5]				X		X						
MP1S	X			X[1]	X	X						
MP2S	X			X[1]	X	X						
SW1A	X		X	X[1,3]		X						
SW1B	X	X	X	X[1,3]	X	X	3/year[2,4]	X[2,3]	X[2,3]		X[2,3]	X[2]
SG2B [6]				X		X						
BWT Area 1 [7]			X	X[3]		X						
BWT Area 2 [7]			X	X[3]		X						
Recirculation Cell		X					2/year[2]		X[2]		X[2]	X[2]

Notes:

General Chemistry:	Conductivity, pH, Hardness (as CaCO3), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Alkalinity - Bicarbonate (as CaCO3), Alkalinity - Carbonate (as CaCO3), Alkalinity - Hydroxide (as CaCO3), Total - Alkalinity (as CaCO3), Chloride, Nitrate-N, Nitrite-N, Nitrate & Nitrite (as N), Phosphate-P (ortho), Sulphate, Anion Sum, Cation Sum, Cation - Anion Balance, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC), Turbidity. Includes oil and grease for surface water samples only.
Field Parameters:	pH, Temperature
Metals:	Aluminium, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon (total and dissolved), Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium.

(1) Requirement of Permit to Take Water No. 7481-C4BQTA (PTTW).
(2) Requirement of Environmental Compliance Approval No. 3994-CCDR8L (ECA).
(3) Aggregate Resource Act (ARA) license Groundwater Monitoring Program (i.e., locations not monitored as part of PTTW or ECA requirements)
(4) Groundwater and surface water monitoring/sampling will be completed in May, August and December every year.
(5) Included as part of the Monitoring Program at the request of the MECP and County of Brant.
(6) Supplemental monitoring proactively completed on-Site.
(7) Below water table (BWT) area hydraulic monitoring to be completed during extraction below the water table.

Table 4.1

2024 Water Elevation Data
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Location:	BH88-1-I	BH88-2-I	BH88-4A-I	BH88-4A-II	BH88-4-I	BH88-5A-I	BH88-5-I	BH88-5-II	BH88-6-I	MW1-12	MW2-12	MW3-16	MW4-16	MW5-16	MW6-16	MW8-22	MW9-22
Date																	
01/22/2024	--	--	--	--	--	--	244.38	244.35	--	244.27	--	244.22	--	246.74	--	--	--
02/27/2024	--	--	--	--	--	--	244.53	244.50	--	244.34	--	244.30	--	247.23	--	--	--
03/28/2024	--	--	--	--	--	--	244.38	244.35	--	244.05	--	244.01	--	247.35	--	--	--
04/04/2024	--	--	--	--	--	--	244.39	244.37	--	244.10	--	244.03	--	247.37	--	--	--
04/12/2024	--	--	--	--	--	--	244.46	244.43	--	244.28	--	244.21	--	247.40	--	--	--
04/19/2024	--	--	--	--	--	--	244.50	244.46	--	244.26	--	244.19	--	247.47	--	--	--
04/26/2024	--	--	--	--	--	--	244.52	244.49	--	244.13	--	244.07	--	247.53	--	--	--
05/09/2024	--	--	--	--	--	--	244.44	244.41	--	244.10	--	244.01	--	247.59	--	--	--
05/17/2024	--	--	--	--	--	--	244.49	244.46	--	244.22	--	244.15	--	247.65	--	--	--
05/24/2024	--	--	--	--	--	--	244.58	244.55	--	244.36	--	244.28	--	247.66	--	--	--
05/28/2024	--	--	233.36	236.85	237.18	234.77	244.53	244.56	--	--	--	244.34	--	247.68	--	--	--
05/29/2024	257.51	250.40	--	--	--	--	--	--	236.24	244.40	243.68	--	234.24	--	246.56	248.81	249.50
06/07/2024	--	--	--	--	--	--	244.62	244.59	--	244.41	--	244.34	--	247.75	--	--	--
07/12/2024	--	--	--	--	--	--	244.63	244.58	--	244.38	--	244.31	--	247.83	--	--	--
08/27/2024	--	--	--	--	--	234.87	244.85	244.83	236.47	--	243.89	--	--	248.55	246.97	--	--
08/28/2024	257.81	250.37	233.44	237.36	237.52	--	--	--	--	244.59	--	--	234.56	--	--	249.31	250.07
09/26/2024	--	--	--	--	--	--	244.68	244.64	--	244.43	--	244.36	--	248.28	--	--	--
10/22/2024	--	--	--	--	--	--	244.64	244.61	--	244.42	--	244.36	--	247.98	--	--	--
11/14/2024	--	--	--	--	--	--	244.56	244.54	--	244.35	--	244.28	--	247.75	--	--	--
12/04/2024	--	249.76	--	--	--	235.16	244.55	244.53	235.95	--	--	--	--	--	246.14	248.54	249.28
12/05/2024	257.30	--	233.12	236.79	236.94	--	--	--	--	--	--	--	--	--	--	--	--
12/06/2024	--	--	--	--	--	--	--	--	--	244.40	243.81	244.33	233.83	247.55	--	--	--
12/19/2024	--	--	--	--	--	--	--	--	--	--	243.88	--	--	--	--	--	--

Notes:
All elevations shown are in meters above mean sea level (m AMSL)
-- No measurement recorded on indicated date

Table 4.1

2024 Water Elevation Data
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Location:	MW10-22	MW11-22	MW12-23	OW1-96A	OW1-96B	OW1-96C	SG2B	SW1A	SW1B	MP1-S	MP2-S
Date											
01/22/2024	--	--	--	--	--	--	--	--	--	--	--
02/27/2024	--	--	--	--	--	--	243.96	--	244.01	--	--
03/28/2024	--	--	--	--	--	--	243.88	--	243.93	--	--
04/04/2024	--	--	--	--	--	--	243.87	--	243.92	--	--
04/12/2024	--	--	--	--	--	--	243.91	--	243.95	244.29	244.23
04/19/2024	--	--	--	--	--	--	243.91	--	243.96	244.25	244.22
04/26/2024	--	--	--	--	--	--	243.90	--	243.94	244.21	244.10
05/09/2024	--	--	--	--	--	--	243.83	--	243.85	244.07	244.04
05/17/2024	--	--	--	--	--	--	243.84	--	243.87	244.17	244.12
05/24/2024	--	--	--	--	--	--	243.83	--	243.87	244.25	244.20
05/28/2024	--	246.27	--	--	--	--	--	--	--	--	--
05/29/2024	247.52	--	Dry	230.11	230.81	236.92	243.90	242.90	243.94	244.26	244.20
06/07/2024	--	--	--	--	--	--	243.89	--	243.94	244.27	244.22
07/12/2024	--	--	--	--	--	--	243.90	--	243.95	244.27	244.20
08/27/2024	248.31	246.65	Dry	229.90	230.65	237.39	244.03	243.06	244.05	244.32	244.23
08/28/2024	--	--	--	--	--	--	--	--	--	--	--
09/26/2024	--	--	--	--	--	--	243.95	242.99	243.99	244.32	244.25
10/22/2024	--	--	--	--	--	--	243.91	--	243.96	244.29	244.23
11/14/2024	--	--	--	--	--	--	243.92	--	243.97	244.29	244.23
12/04/2024	--	--	--	--	--	--	--	--	--	--	--
12/05/2024	247.34	246.01	--	--	--	--	--	--	--	--	--
12/06/2024	--	--	Dry	229.51	230.16	236.15	Frozen	Frozen	Frozen	244.27	244.22
12/19/2024	--	--	--	--	--	--	--	243.07	--	--	--

Notes:
All elevations shown are in meters above mean sea level (m AMSL)
-- No measurement recorded on indicated date

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)	Comments
Jan/Feb 2024	--	--	--	No taking occurred.
Friday March 01 2024	0.0	0	0	-
Saturday March 02 2024	0.0	0	0	-
Sunday March 03 2024	0.0	0	0	-
Monday March 04 2024	0.0	0	0	-
Tuesday March 05 2024	0.0	0	0	-
Wednesday March 06 2024	0.0	0	0	-
Thursday March 07 2024	0.0	0	0	-
Friday March 08 2024	0.0	0	0	-
Saturday March 09 2024	0.0	0	0	-
Sunday March 10 2024	0.0	0	0	-
Monday March 11 2024	0.0	0	0	-
Tuesday March 12 2024	0.0	0	0	-
Wednesday March 13 2024	0.0	0	0	-
Thursday March 14 2024	0.0	0	0	-
Friday March 15 2024	0.0	0	0	- Pump ran for 0.4 hrs without water taking due to leak
Saturday March 16 2024	0.0	0	0	-
Sunday March 17 2024	0.0	0	0	-
Monday March 18 2024	12.0	8,149	5,867,370	- Large Pump
Tuesday March 19 2024	6.1	7,654	2,801,196	- Large Pump
Wednesday March 20 2024	12.0	7,781	5,602,392	- Large Pump
Thursday March 21 2024	0.4	6,309	151,416	- Large Pump
Friday March 22 2024	0.0	0	0	-
Saturday March 23 2024	0.0	0	0	-
Sunday March 24 2024	0.0	0	0	-
Monday March 25 2024	11.9	9,384	6,700,158	- Large Pump
Tuesday March 26 2024	7.3	6,568	2,876,904	- Large Pump
Wednesday March 27 2024	0.0	0	0	-
Thursday March 28 2024	0.0	0	0	-
Friday March 29 2024	0.0	0	0	-
Saturday March 30 2024	0.0	0	0	-
Sunday March 31 2024	0.0	0	0	-
Monday April 01 2024	0.0	0	0	-
Tuesday April 02 2024	0.0	0	0	-
Wednesday April 03 2024	11.9	8,748	6,245,910	- Large Pump
Thursday April 04 2024	0.0	0	0	-
Friday April 05 2024	0.0	0	0	-
Saturday April 06 2024	0.0	0	0	-
Sunday April 07 2024	0.0	0	0	-
Monday April 08 2024	11.9	8,801	6,283,764	- Large Pump
Tuesday April 09 2024	0.0	0	0	-
Wednesday April 10 2024	0.0	0	0	-
Thursday April 11 2024	10.0	1,325	794,934	-
Friday April 12 2024	12.0	1,367	984,204	-
Saturday April 13 2024	0.0	0	0	-
Sunday April 14 2024	0.0	0	0	-
Monday April 15 2024	12.0	1,262	908,496	-
Tuesday April 16 2024	12.0	1,367	984,204	-
Wednesday April 17 2024	12.0	8,097	5,829,516	- Large Pump
Thursday April 18 2024	12.0	1,157	832,788	-
Friday April 19 2024	12.0	1,420	1,022,058	- Large Pump
Saturday April 20 2024	12.0	1,367	984,204	-
Sunday April 21 2024	11.9	1,272	908,496	-
Monday April 22 2024	11.8	1,337	946,350	-
Tuesday April 23 2024	11.9	1,219	870,642	-
Wednesday April 24 2024	11.9	1,325	946,350	-

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)	Comments
Thursday April 25 2024	12.0	8,570	6,170,202	- Large Pump
Friday April 26 2024	11.9	8,377	5,980,932	- Large Pump
Saturday April 27 2024	0.0	0	0	-
Sunday April 28 2024	0.0	0	0	-
Monday April 29 2024	12.0	8,254	5,943,078	- Large Pump
Tuesday April 30 2024	0.0	0	0	-
Wednesday May 01 2024	0.0	0	0	-
Thursday May 02 2024	11.9	8,165	5,829,516	- Large Pump
Friday May 03 2024	0.0	0	0	-
Saturday May 04 2024	0.0	0	0	-
Sunday May 05 2024	0.0	0	0	-
Monday May 06 2024	12.0	8,149	5,867,370	- Large Pump
Tuesday May 07 2024	12.0	8,202	5,905,224	- Large Pump
Wednesday May 08 2024	0.0	0	0	-
Thursday May 09 2024	0.0	0	0	-
Friday May 10 2024	11.9	8,218	5,867,370	- Large Pump
Saturday May 11 2024	0.0	0	0	-
Sunday May 12 2024	0.0	0	0	-
Monday May 13 2024	11.9	8,112	5,791,662	- Large Pump
Tuesday May 14 2024	0.0	0	0	-
Wednesday May 15 2024	11.6	1,197	832,788	-
Thursday May 16 2024	11.9	1,219	870,642	-
Friday May 17 2024	11.0	1,204	794,934	-
Saturday May 18 2024	0.0	0	0	-
Sunday May 19 2024	0.0	0	0	-
Monday May 20 2024	12.0	1,157	832,788	-
Tuesday May 21 2024	12.0	1,157	832,788	-
Wednesday May 22 2024	8.0	1,183	567,810	-
Thursday May 23 2024	12.0	1,314	946,350	-
Friday May 24 2024	11.9	1,325	946,350	-
Saturday May 25 2024	11.8	1,337	946,350	-
Sunday May 26 2024	0.0	0	0	-
Monday May 27 2024	11.9	1,325	946,350	-
Tuesday May 28 2024	11.9	1,272	908,496	-
Wednesday May 29 2024	11.8	1,337	946,350	-
Thursday May 30 2024	11.9	1,325	946,350	-
Friday May 31 2024	12.0	8,570	6,170,202	- Large Pump
Saturday June 01 2024	0.0	0	0	-
Sunday June 02 2024	0.0	0	0	-
Monday June 03 2024	11.6	1,197	832,788	-
Tuesday June 04 2024	12.0	1,052	757,080	-
Wednesday June 05 2024	12.0	1,052	757,080	-
Thursday June 06 2024	12.0	1,052	757,080	-
Friday June 07 2024	12.0	8,675	6,245,910	- Large Pump
Saturday June 08 2024	8.7	8,412	4,391,064	- Large Pump
Sunday June 09 2024	0.0	0	0	-
Monday June 10 2024	12.0	1,157	832,788	-
Tuesday June 11 2024	0.0	0	0	-
Wednesday June 12 2024	12.0	1,314	946,350	-
Thursday June 13 2024	12.0	1,157	832,788	-
Friday June 14 2024	11.9	1,060	757,080	-
Saturday June 15 2024	12.0	1,314	946,350	- Pump ran for an additional 2.3hrs without water taking
Sunday June 16 2024	0.0	0	0	-
Monday June 17 2024	12.0	8,307	5,980,932	- Large Pump
Tuesday June 18 2024	11.9	1,113	794,934	-
Wednesday June 19 2024	11.8	1,123	794,934	-

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)	Comments
Thursday June 20 2024	11.9	1,060	757,080	-
Friday June 21 2024	11.9	1,219	870,642	-
Saturday June 22 2024	0.0	0	0	-
Sunday June 23 2024	0.0	0	0	-
Monday June 24 2024	11.9	1,166	832,788	-
Tuesday June 25 2024	11.4	8,523	5,829,516	- Large Pump
Wednesday June 26 2024	11.8	1,390	984,204	-
Thursday June 27 2024	11.9	1,378	984,204	-
Friday June 28 2024	11.9	1,378	984,204	-
Saturday June 29 2024	12.0	1,367	984,204	-
Sunday June 30 2024	11.7	1,348	946,350	-
Monday July 01 2024	0.0	0	0	-
Tuesday July 02 2024	11.9	1,325	946,350	-
Wednesday July 03 2024	11.9	1,325	946,350	-
Thursday July 04 2024	11.9	1,325	946,350	-
Friday July 05 2024	11.8	1,337	946,350	-
Saturday July 06 2024	11.9	1,325	946,350	-
Sunday July 07 2024	11.9	1,325	946,350	-
Monday July 08 2024	11.9	1,325	946,350	-
Tuesday July 09 2024	11.8	1,337	946,350	-
Wednesday July 10 2024	11.8	1,337	946,350	-
Thursday July 11 2024	12.0	1,314	946,350	-
Friday July 12 2024	12.0	1,314	946,350	-
Saturday July 13 2024	0.0	0	0	-
Sunday July 14 2024	11.8	1,337	946,350	-
Monday July 15 2024	11.9	1,325	946,350	-
Tuesday July 16 2024	11.8	1,337	946,350	-
Wednesday July 17 2024	11.9	1,325	946,350	-
Thursday July 18 2024	12.0	1,314	946,350	-
Friday July 19 2024	11.8	1,337	946,350	-
Saturday July 20 2024	11.8	1,337	946,350	-
Sunday July 21 2024	0.0	0	0	-
Monday July 22 2024	11.8	1,337	946,350	-
Tuesday July 23 2024	11.9	1,325	946,350	-
Wednesday July 24 2024	11.9	1,325	946,350	-
Thursday July 25 2024	11.9	1,325	946,350	-
Friday July 26 2024	11.7	1,348	946,350	-
Saturday July 27 2024	0.0	0	0	-
Sunday July 28 2024	0.0	0	0	-
Monday July 29 2024	11.8	1,390	984,204	-
Tuesday July 30 2024	11.9	1,325	946,350	-
Wednesday July 31 2024	12.0	1,314	946,350	-
Thursday August 01 2024	11.3	1,340	908,496	-
Friday August 02 2024	11.9	1,378	984,204	-
Saturday August 03 2024	0.0	0	0	-
Sunday August 04 2024	0.0	0	0	-
Monday August 05 2024	0.0	0	0	-
Tuesday August 06 2024	0.0	0	0	-
Wednesday August 07 2024	12.0	1,367	984,204	-
Thursday August 08 2024	0.0	0	0	-
Friday August 09 2024	12.0	1,314	946,350	-
Saturday August 10 2024	0.0	0	0	-
Sunday August 11 2024	0.0	0	0	-
Monday August 12 2024	12.0	1,367	984,204	-
Tuesday August 13 2024	11.9	1,378	984,204	-
Wednesday August 14 2024	11.9	1,325	946,350	-

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)		Comments
Thursday August 15 2024	0.0	0	0	-	
Friday August 16 2024	12.0	1,314	946,350	-	
Saturday August 17 2024	11.9	1,325	946,350	-	
Sunday August 18 2024	0.0	0	0	-	
Monday August 19 2024	11.9	1,325	946,350	-	
Tuesday August 20 2024	11.9	1,325	946,350	-	
Wednesday August 21 2024	11.8	1,283	908,496	-	
Thursday August 22 2024	11.9	1,325	946,350	-	
Friday August 23 2024	11.9	1,325	946,350	-	
Saturday August 24 2024	0.0	0	0	-	
Sunday August 25 2024	0.0	0	0	-	
Monday August 26 2024	11.9	1,325	946,350	-	
Tuesday August 27 2024	11.8	1,337	946,350	-	
Wednesday August 28 2024	11.9	1,325	946,350	-	
Thursday August 29 2024	11.9	1,325	946,350	-	
Friday August 30 2024	11.9	1,325	946,350	-	
Saturday August 31 2024	0.0	0	0	-	
Sunday September 01 2024	0.0	0	0	-	
Monday September 02 2024	0.0	0	0	-	
Tuesday September 03 2024	11.8	1,337	946,350	-	
Wednesday September 04 2024	11.9	1,325	946,350	-	
Thursday September 05 2024	11.9	1,325	946,350	-	
Friday September 06 2024	11.9	1,325	946,350	-	
Saturday September 07 2024	0.0	0	0	-	
Sunday September 08 2024	0.0	0	0	-	
Monday September 09 2024	11.8	1,390	984,204	-	
Tuesday September 10 2024	11.9	1,325	946,350	-	
Wednesday September 11 2024	11.9	1,325	946,350	-	
Thursday September 12 2024	11.8	1,337	946,350	-	
Friday September 13 2024	11.9	1,272	908,496	-	
Saturday September 14 2024	0.0	0	0	-	
Sunday September 15 2024	0.0	0	0	-	
Monday September 16 2024	11.9	1,378	984,204	-	
Tuesday September 17 2024	11.9	1,325	946,350	-	
Wednesday September 18 2024	11.8	1,337	946,350	-	
Thursday September 19 2024	11.9	8,801	6,283,764	-	Large Pump
Friday September 20 2024	11.9	1,219	870,642	-	
Saturday September 21 2024	0.0	0	0	-	
Sunday September 22 2024	0.0	0	0	-	
Monday September 23 2024	12.0	1,314	946,350	-	
Tuesday September 24 2024	11.8	1,230	870,642	-	
Wednesday September 25 2024	11.8	1,230	870,642	-	
Thursday September 26 2024	11.9	1,219	870,642	-	
Friday September 27 2024	11.9	1,219	870,642	-	
Saturday September 28 2024	0.0	0	0	-	
Sunday September 29 2024	0.0	0	0	-	
Monday September 30 2024	11.8	1,283	908,496	-	
Tuesday October 01 2024	11.9	1,272	908,496	-	
Wednesday October 02 2024	11.9	1,272	908,496	-	
Thursday October 03 2024	11.8	1,283	908,496	-	
Friday October 04 2024	11.9	1,219	870,642	-	
Saturday October 05 2024	0.0	0	0	-	
Sunday October 06 2024	0.0	0	0	-	
Monday October 07 2024	11.9	1,272	908,496	-	
Tuesday October 08 2024	11.9	1,272	908,496	-	
Wednesday October 09 2024	0.0	0	0	-	

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)		Comments
Thursday October 10 2024	11.8	1,283	908,496	-	
Friday October 11 2024	11.9	1,272	908,496	-	
Saturday October 12 2024	0.0	0	0	-	
Sunday October 13 2024	0.0	0	0	-	
Monday October 14 2024	0.0	0	0	-	
Tuesday October 15 2024	11.9	1,272	908,496	-	
Wednesday October 16 2024	0.0	0	0	-	
Thursday October 17 2024	11.8	1,283	908,496	-	
Friday October 18 2024	11.9	1,219	870,642	-	
Saturday October 19 2024	0.0	0	0	-	
Sunday October 20 2024	0.0	0	0	-	
Monday October 21 2024	11.9	1,272	908,496	-	
Tuesday October 22 2024	11.8	1,283	908,496	-	
Wednesday October 23 2024	11.9	1,272	908,496	-	
Thursday October 24 2024	11.9	1,219	870,642	-	
Friday October 25 2024	11.9	1,272	908,496	-	
Saturday October 26 2024	0.0	0	0	-	
Sunday October 27 2024	0.0	0	0	-	
Monday October 28 2024	11.8	1,283	908,496	-	
Tuesday October 29 2024	11.9	1,219	870,642	-	
Wednesday October 30 2024	11.9	1,272	908,496	-	
Thursday October 31 2024	11.8	1,230	870,642	-	
Friday November 01 2024	11.9	1,219	870,642	-	
Saturday November 02 2024	0.0	0	0	-	
Sunday November 03 2024	0.0	0	0	-	
Monday November 04 2024	11.9	1,272	908,496	-	
Tuesday November 05 2024	0.0	0	0	-	
Wednesday November 06 2024	11.9	1,272	908,496	-	
Thursday November 07 2024	11.8	1,283	908,496	-	
Friday November 08 2024	0.0	0	0	-	
Saturday November 09 2024	0.0	0	0	-	
Sunday November 10 2024	0.0	0	0	-	
Monday November 11 2024	11.9	1,219	870,642	-	
Tuesday November 12 2024	0.0	0	0	-	
Wednesday November 13 2024	0.0	0	0	-	
Thursday November 14 2024	0.0	0	0	-	
Friday November 15 2024	0.0	0	0	-	
Saturday November 16 2024	0.0	0	0	-	
Sunday November 17 2024	0.0	0	0	-	
Monday November 18 2024	0.0	0	0	-	
Tuesday November 19 2024	0.0	0	0	-	
Wednesday November 20 2024	0.0	0	0	-	
Thursday November 21 2024	0.0	0	0	-	
Friday November 22 2024	0.0	0	0	-	
Saturday November 23 2024	0.0	0	0	-	
Sunday November 24 2024	0.0	0	0	-	
Monday November 25 2024	0.0	0	0	-	
Tuesday November 26 2024	0.0	0	0	-	
Wednesday November 27 2024	0.0	0	0	-	
Thursday November 28 2024	0.0	0	0	-	
Friday November 29 2024	0.0	0	0	-	
Saturday November 30 2024	0.0	0	0	-	
Sunday December 01 2024	0.0	0	0	-	
Monday December 02 2024	0.0	0	0	-	
Tuesday December 03 2024	0.0	0	0	-	
Wednesday December 04 2024	0.0	0	0	-	

2024 Water Taking
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Date	Hours of Taking (hrs)	Rate of Taking (Lpm)	Amount of Taking (Lpd)		Comments
Thursday December 05 2024	0.0	0	0	-	
Friday December 06 2024	0.0	0	0	-	
Saturday December 07 2024	0.0	0	0	-	
Sunday December 08 2024	0.0	0	0	-	
Monday December 09 2024	0.0	0	0	-	
Tuesday December 10 2024	0.0	0	0	-	
Wednesday December 11 2024	0.0	0	0	-	
Thursday December 12 2024	0.0	0	0	-	
Friday December 13 2024	0.0	0	0	-	
Saturday December 14 2024	0.0	0	0	-	
Sunday December 15 2024	0.0	0	0	-	
Monday December 16 2024	0.0	0	0	-	
Tuesday December 17 2024	0.0	0	0	-	
Wednesday December 18 2024	0.0	0	0	-	
Thursday December 19 2024	0.0	0	0	-	
Friday December 20 2024	0.0	0	0	-	
Saturday December 21 2024	0.0	0	0	-	
Sunday December 22 2024	0.0	0	0	-	
Monday December 23 2024	0.0	0	0	-	
Tuesday December 24 2024	0.0	0	0	-	
Wednesday December 25 2024	0.0	0	0	-	
Thursday December 26 2024	0.0	0	0	-	
Friday December 27 2024	0.0	0	0	-	
Saturday December 28 2024	0.0	0	0	-	
Sunday December 29 2024	0.0	0	0	-	
Monday December 30 2024	0.0	0	0	-	
Tuesday December 31 2024	0.0	0	0	-	

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-1-I	BH88-1-I	BH88-1-I	BH88-2-I	BH88-2-I	BH88-2-I	BH88-4-I	BH88-4-I	BH88-4-I	BH88-4A-I
Sample ID:			**GW-78410-052924-AB-020**	**GW-78410-082824-AB-016**	**GW-78410-120524-EH-014**	**GW-78410-052924-EH-015**	**GW-78410-082824-EH-017**	**GW-78410-120424-EH-010**	**GW-78410-052824-009**	**GW-78410-082824-AB-014**	**GW-78410-120524-EH-012**	**GW-78410-052824-007**
Sample Date:			**5/29/2024**	**8/28/2024**	**12/5/2024**	**5/29/2024**	**8/28/2024**	**12/4/2024**	**5/28/2024**	**8/28/2024**	**12/5/2024**	**5/28/2024**
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	604	616	764	591	539	606	666	636	784	644
Dissolved oxygen (DO), field	mg/L	-	14.16	6.32	6.74	9.3	8.88	0	7.96	6.21	10.8	9.88
Oxidation reduction potential (ORP), field	millivolts	-	270	158	248	147	369	140	136	188	268	140
pH, field	s.u.	6.5-8.5	7.58	7.42	7.12	7.64	6.8	7.56	7.78	7.31	7.02	7.7
Temperature, field	Deg C	-	12.23	13.87	8.89	11.3	15.39	5.96	11.79	12.96	7.06	11.57
Turbidity, field	NTU	-	5.6	0	10.1	0	0	3.3	0.4	0	4.2	28.6
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	266	173	259	250	174	247	248	194	248	236
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	266	173	259	250	174	247	248	194	248	236
Anion sum	meq	-	6.89	5.11	6.92	6.14	4.97	5.96	7.07	5.74	6.88	6.58
Anion/Cation ratio	%	-	0.36	12.7	-0.65	-0.24	9.39	-0.34	-0.93	6.59	-0.80	1.79
Cation sum	meq	-	6.94	6.60	6.83	6.11	6.00	5.92	6.94	6.55	6.77	6.82
Chloride (dissolved)	mg/L	250	14.5	15.8	17.3	8.32	11.2	6.95	34.0	25.8	28.3	27.7
Conductivity	µS/cm	-	650	508	629	578	491	559	661	554	667	613
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	1.17	1.12	0.59	0.91	1.89	1.10	4.77 J	0.99	1.12	ND (0.50)
Hardness	mg/L	100	**336**	**320**	**331**	**300**	**294**	**290**	**332**	**296**	**316**	**320**
Nitrate (as N)	mg/L	10	**10.5**	**10.9**	**11.6**	8.85	**11.2**	5.96	**11.2**	**10.6**	**10.5**	9.56
Nitrite (as N)	mg/L	1	0.020	0.011	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	10.5	10.9	11.6	8.85	11.2	5.96	11.2	10.6	10.5	9.56
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	0.0031 J	ND (0.0030)	ND (0.0030)	ND (0.0030)	0.0042	ND (0.0030)	ND (0.0030) J	ND (0.0030)	ND (0.0030)
pH, lab	s.u.	6.5-8.5	7.93	8.15	7.86	7.83	8.15	8.02	8.27	8.19	7.96	7.90
Sulfate (dissolved)	mg/L	500	20.0	20.8	20.6	13.1	18.1	19.2	17.0	18.3	18.3	19.2
Total dissolved solids (TDS)	mg/L	500	349	337	404	326	328	321	389	335	398	394
Total organic carbon (TOC)	mg/L	-	0.77	1.21	ND (2.50)	1.06	1.96	0.92	0.83 J	0.77	0.64	0.76
Total suspended solids (TSS)	mg/L	-	5.0	7.5	113	ND (3.0)	7.1	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	8.6
Turbidity	NTU	-	0.26	0.70 J	36.3	0.20	0.56 J	0.74	0.11	0.41 J	0.88	8.76

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-4A-I	BH88-4A-I	BH88-4A-II	BH88-4A-II	BH88-4A-II	BH88-5-I	BH88-5-I	BH88-5-I	BH88-5-II	BH88-5-II
Sample ID:			**GW-78410-082824-AB-012**	**GW-78410-120524-EH-013**	**GW-78410-052824-008**	**GW-78410-082824-AB-013**	**GW-78410-120524-EH-011**	**GW-78410-052824-002**	**GW-78410-082724-EH-07**	**GW-78410-120424-EH-006**	**GW-78410-052824-001**	**GW-78410-082724-EH-09**
Sample Date:			**8/28/2024**	**12/5/2024**	**5/28/2024**	**8/28/2024**	**12/5/2024**	**5/28/2024**	**8/27/2024**	**12/4/2024**	**5/28/2024**	**8/27/2024**
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	638	804	647	632	776	627	600	729	629	600
Dissolved oxygen (DO), field	mg/L	-	5.39	13.59	9.6	6.81	11.9	6.64	7.41	6.71	7.39	12.24
Oxidation reduction potential (ORP), field	millivolts	-	200	274	114	194	256	1.93	181	119	1.73	147
pH, field	s.u.	6.5-8.5	7.33	7.11	7.87	7.31	7.05	6.69	7.57	7.3	**6.26**	7.7
Temperature, field	Deg C	-	12.77	7.71	11.48	12.7	8.12	10.76	13.84	8.18	11.3	12.34
Turbidity, field	NTU	-	0	4.4	140	309	289	0	51.8	0.3	0	14.7
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	178	250	250	230	281	263	255	261	262	232
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	178	250	250	230	281	263	255	261	262	232
Anion sum	meq	-	5.44	6.97	6.89	6.51	7.55	6.91	6.75	6.93	6.88	6.30
Anion/Cation ratio	%	-	11.8	-0.14	-2.15	0.99	-5.30	-2.75	-0.60	-0.51	-0.88	2.93
Cation sum	meq	-	6.89	6.95	6.60	6.64	6.79	6.54	6.67	6.86	6.76	6.68
Chloride (dissolved)	mg/L	250	28.7	30.9	28.9	29.5	29.3	20.3	20.6	21.2	20.0	20.7
Conductivity	µS/cm	-	518	639	603	500	623	635	622	634	641	625
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	1.64 J	ND (0.50)	0.97	0.97	0.54	0.63	1.29	1.04	1.87 J	1.29
Hardness	mg/L	100	**325**	**326**	**311**	**313**	**319**	**307**	**314**	**324**	**318**	**314**
Nitrate (as N)	mg/L	10	9.35	9.95	9.43	9.20	9.51	8.42	7.84	8.13	8.37	7.87
Nitrite (as N)	mg/L	1	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	9.35	9.95	9.43	9.20	9.51	8.42	7.84	8.13	8.37	7.87
Orthophosphate (dissolved)	mg/L	-	ND (0.0030) J	ND (0.0030)	ND (0.0030)	ND (0.0030) J	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030) J
pH, lab	s.u.	6.5-8.5	8.13	7.84	7.86	8.11	7.79	8.11	8.10	7.97	8.01	7.88
Sulfate (dissolved)	mg/L	500	19.5	19.0	19.4	20.4	20.5	23.3	24.6	25.6	23.1	24.8
Total dissolved solids (TDS)	mg/L	500	335	416	385	343	414	338	385	380	340	322
Total organic carbon (TOC)	mg/L	-	1.04 J	ND (0.50)	0.91	1.89	ND (2.50)	0.52	1.15	0.61	0.68 J	1.00
Total suspended solids (TSS)	mg/L	-	ND (3.0)	ND (3.0)	150	347	505	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	-	0.29 J	1.40	49	115 J	194	ND (0.10)	0.16	0.59	0.33	ND (0.10)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-5-II	BH88-5A-I	BH88-5A-I	BH88-5A-I	BH88-6-I	BH88-6-I	BH88-6-I	BH88-6-I	MW1-12	MW1-12
Sample ID:			GW-78410-120424-EH-005	GW-78410-052824-003	GW-78410-082724-EH-08	GW-78410-120424-EH-007	GW-78410-052924-AB-016	GW-78410-052924-AB-017	GW-78410-082724-AB-06	GW-78410-12424-CL-004	GW-78410-052924-EH-019	GW-78410-082824-EH-020
Sample Date:			12/4/2024	5/28/2024	8/27/2024	12/4/2024	5/29/2024	5/29/2024 Duplicate	8/27/2024	12/4/2024	5/29/2024	8/28/2024
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	721	1000	922	1170	651	651	565	593	558	498
Dissolved oxygen (DO), field	mg/L	-	8.19	2.3	11.15	4.78	3.92	3.92	1.48	0	7.57	8.16
Oxidation reduction potential (ORP), field	millivolts	-	257	-59	17	14	176	176	2.8	27	146	351
pH, field	s.u.	6.5-8.5	7.05	7.31	7.54	7.13	7.37	7.37	7.47	7.12	7.57	6.98
Temperature, field	Deg C	-	8.77	11.91	14.63	6.94	13.66	13.66	27.81	7.74	14.63	21.37
Turbidity, field	NTU	-	0.1	1.7	132	0.1	3.7	3.7	0	7.8	0	0
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	261	200	182	206	335	333	269	302	170	197
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	261	200	182	206	335	333	269	302	170	197
Anion sum	meq	-	6.92	11.4	11.2	12.1	7.52	7.49	6.02	6.57	5.40	5.76
Anion/Cation ratio	%	-	-0.73	-0.88	-10.1	-3.42	0.73	1.12	8.09	1.35	0.18	-3.97
Cation sum	meq	-	6.82	11.2	9.14	11.3	7.63	7.66	7.08	6.75	5.42	5.32
Chloride (dissolved)	mg/L	250	21.2	25.5	26.1	27.0	19.1	19.2	15.5	14.3	41.9	34.2
Conductivity	µS/cm	-	641	1000	994	1020	690	689	562	574	540	558
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	0.68	0.55	1.94 J	ND (0.50)	1.64	1.23 J	2.40 J	2.34 J	1.49 J	1.08
Hardness	mg/L	100	**322**	**546**	**440**	**554**	**368**	**370**	**341**	**326**	**243**	**238**
Nitrate (as N)	mg/L	10	8.15	ND (0.020)	ND (0.020)	ND (0.100)	1.87	1.87	1.10	0.608	5.10	5.98
Nitrite (as N)	mg/L	1	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.050)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	8.15	ND (0.0224)	ND (0.0224)	ND (0.112)	1.87	1.87	1.10	0.608	5.10	5.98
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030) J	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030) J	ND (0.0030)	ND (0.0030)	ND (0.0030)
pH, lab	s.u.	6.5-8.5	7.92	8.18	7.77	7.63	7.72	7.75	7.84	7.88	8.04	7.87
Sulfate (dissolved)	mg/L	500	25.4	322	326	348	7.62	7.61	6.21	4.20	21.9	21.0
Total dissolved solids (TDS)	mg/L	500	351	**701**	**727**	**764**	367	367	358	296	306	286
Total organic carbon (TOC)	mg/L	-	0.63	0.52	1.03 J	ND (0.50)	1.45 J	ND (0.50) J	1.45 J	0.63 J	ND (0.50) J	1.04
Total suspended solids (TSS)	mg/L	-	ND (3.0)	3.6	31.9	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	5.0	ND (3.0)
Turbidity	NTU	-	ND (0.10)	2.68	21.9	4.85	1.70 J	3.32 J	2.00	7.27	0.13	ND (0.10) J

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW1-12	MW2-12	MW2-12	MW2-12	MW3-16	MW3-16	MW3-16	MW3-16	MW4-16	MW4-16
Sample ID:			GW-78410-120624-EH-017	GW-78410-052924-AB-011	GW-78410-082724-AB-11	GW-78410-120624-EH-016	GW-78410-052824-AB-005	GW-78410-052824-AB-006	GW-78410-082724-CL-01	GW-78410-120624-EH-018	GW-78410-052924-EH-018	GW-78410-082824-EH-015
Sample Date:			12/6/2024	5/29/2024	8/27/2024	12/6/2024	5/28/2024	5/28/2024 Duplicate	8/27/2024	12/6/2024	5/29/2024	8/28/2024
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	618	749	934	1070	547	547	470	677	615	551
Dissolved oxygen (DO), field	mg/L	-	0	10.73	9.74	6.97	6.47	6.47	4.4	2.9	8.69	8.35
Oxidation reduction potential (ORP), field	millivolts	-	203	249	154	162	344	344	418	144	162	356
pH, field	s.u.	6.5-8.5	7.56	7.27	7.6	7.29	6.97	6.97	-	7.07	7.62	6.8
Temperature, field	Deg C	-	3.6	9.71	15.42	8.96	12.47	12.47	18.96	9.47	13.03	16.2
Turbidity, field	NTU	-	0	37.8	16.9	46.8	5	5	10	2.4	231	311
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	197	332	217	266	186	186	192	200	285	178
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	197	332	217	266	186	186	192	200	285	178
Anion sum	meq	-	5.99	8.46	9.04	10.1	5.65	5.64	5.67	5.99	6.79	4.76
Anion/Cation ratio	%	-	-2.30	1.22	5.04	-1.20	-0.80	-1.08	-0.80	-1.96	-2.41	14.5
Cation sum	meq	-	5.72	8.67	10.0	9.86	5.56	5.52	5.58	5.76	6.47	6.37
Chloride (dissolved)	mg/L	250	39.0	50.0	148	152	38.5	38.3	35.1	38.4	14.2	16.3
Conductivity	µS/cm	-	581	793	935	999	547	548	548	579	603	455
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	1.44	1.41	1.47	1.05	3.92 J	1.46 J	1.69 J	0.95	1.23	1.02
Hardness	mg/L	100	**259**	**425**	**428**	**426**	**252**	**251**	**252**	**260**	**311**	**307**
Nitrate (as N)	mg/L	10	6.48	3.03	4.07	4.18	5.36	5.38	5.57	6.25	6.43	6.86
Nitrite (as N)	mg/L	1	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	6.48	3.03	4.07	4.18	5.36	5.38	5.57	6.25	6.43	6.86
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030) J	ND (0.0030)	0.0123 J	0.0036 J	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030) J
pH, lab	s.u.	6.5-8.5	8.10	7.70	7.62	7.80	8.24	8.26	8.01	8.09	7.90	8.20
Sulfate (dissolved)	mg/L	500	23.6	9.38	11.2	11.3	22.2	22.2	21.4	22.4	11.4	12.1
Total dissolved solids (TDS)	mg/L	500	354	445	**561**	**678**	335	324	326	354	332	298
Total organic carbon (TOC)	mg/L	-	0.66	1.17	1.65	0.65	1.30 J	1.38	0.93 J	0.51	1.56	2.88
Total suspended solids (TSS)	mg/L	-	ND (3.0)	17.7	11.5	19.0	ND (3.0)	3.0	ND (3.0)	ND (3.0)	1090	546
Turbidity	NTU	-	ND (0.10)	19.4	7.74	10.5	1.24	0.81	10.7	0.70	243	133 J

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW4-16	MW4-16	MW5-16	MW5-16	MW5-16	MW5-16	MW5-16	MW6-16	MW6-16	MW6-16
Sample ID:			GW-78410-120624-EH-019	GW-78410-120624-EH-020	GW-78410-052824-AB-10	GW-78410-082724-CL-02	GW-78410-082724-CL-03	GW-78410-12424-CL-001	GW-78410-12424-CL-002	GW-78410-052924-AB-012	GW-78410-082724-AB-04	GW-78410-082724-AB-05
Sample Date:			12/6/2024	12/6/2024 Duplicate	5/28/2024	8/27/2024	8/27/2024 Duplicate	12/4/2024	12/4/2024 Duplicate	5/29/2024	8/27/2024	8/27/2024 Duplicate
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	723	723	612	592	592	651	651	587	595	595
Dissolved oxygen (DO), field	mg/L	-	6.93	6.93	6.74	5.72	5.72	2.16	2.16	9.01	5.8	5.8
Oxidation reduction potential (ORP), field	millivolts	-	124	124	303	443	443	271	271	286	196	196
pH, field	s.u.	6.5-8.5	7.07	7.07	7.79	-	-	7.29	7.29	7.66	7.26	7.26
Temperature, field	Deg C	-	6.22	6.22	13.78	18	18	7	7	15.41	16.63	16.63
Turbidity, field	NTU	-	67.7	67.7	5.5	19.8	19.8	4.8	4.8	4	0	0
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	274	275	249	250	245	257	252	254	254	182
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	274	275	249	250	245	257	252	254	254	182
Anion sum	meq	-	6.69	6.70	6.60	6.59	6.49	6.76	6.66	6.59	6.58	5.15
Anion/Cation ratio	%	-	-1.98	-2.13	1.34	-0.69 J	ND (0.01) J	-2.35	-1.60	1.05	-0.30 J	12.0 J
Cation sum	meq	-	6.43	6.42	6.78	6.50	6.49	6.45	6.45	6.73	6.54	6.56
Chloride (dissolved)	mg/L	250	14.8	14.7	16.4	16.8	16.7	15.3	15.3	17.7	17.2	17.2
Conductivity	µS/cm	-	606	608	608	613	638	628	628	624	643	495
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	0.98	0.78	1.45 J	1.27	1.33	1.25 J	2.60 J	2.20 J	1.59 J	2.48 J
Hardness	mg/L	100	**310**	**310**	**316**	**311**	**310**	**310**	**310**	**323**	**313**	**314**
Nitrate (as N)	mg/L	10	7.30	7.24	**10.8**	**10.3**	**10.3**	**11.6**	**11.6**	7.49	7.46	7.48
Nitrite (as N)	mg/L	1	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	7.30	7.24	10.8	10.3	10.3	11.6	11.6	7.49	7.46	7.48
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
pH, lab	s.u.	6.5-8.5	8.06	8.03	8.13	7.90	7.71	7.92	7.85	8.17	7.67	8.18
Sulfate (dissolved)	mg/L	500	13.4	13.3	19.0	18.5	18.5	17.7	17.5	22.9	23.6	23.6
Total dissolved solids (TDS)	mg/L	500	366	360	354	384	390	336	339	333	372	378
Total organic carbon (TOC)	mg/L	-	1.14	0.91	0.80 J	2.28 J	1.32 J	0.77	0.52 J	ND (0.50) J	0.63 J	0.78 J
Total suspended solids (TSS)	mg/L	-	160	125	16.0	9.5	10.1	5.5	4.3	ND (3.0)	ND (3.0)	ND (3.0)
Turbidity	NTU	-	51.2	47.6	2.32	4.62	3.20	0.79	1.11	0.85	0.21 J	0.21 J

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.1

2024 Groundwater Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW6-16	MW8-22	MW8-22	MW8-22	MW9-22	MW9-22	MW9-22	MW11-22	MW11-22	MW11-22
Sample ID:			GW-78410-12424-CL-003	GW-78410-052924-EH-013	GW-78410-082824-AB-018	GW-78410-120424-CD-009	GW-78410-052924-EH-014	GW-78410-082824-AB-019	GW-78410-120424-CD-008	GW-78410-052824-004	GW-78410-082724-EH-10	GW-78410-120524-EH-015
Sample Date:			12/4/2024	5/29/2024	8/28/2024	12/4/2024	5/29/2024	8/28/2024	12/4/2024	5/28/2024	8/27/2024	12/5/2024
Parameters	**Units**	**ODWQS**										
Field Parameters												
Conductivity, field	µS/cm	-	705	665	613	744	398	668	770	623	585	734
Dissolved oxygen (DO), field	mg/L	-	2.58	10.76	10.68	8.25	9.96	7.66	8.16	6.71	8.91	8.85
Oxidation reduction potential (ORP), field	millivolts	-	281	161	160	188	166	175	170	151	213	40
pH, field	s.u.	6.5-8.5	7.24	7.38	7.57	7.34	7.12	7.46	7.33	7.54	7.71	7.07
Temperature, field	Deg C	-	4.8	11.02	12.98	7.64	11.69	12.34	6.94	11.83	14.99	9.97
Turbidity, field	NTU	-	0	48.4	136	26.5	47.2	52.5	0.6	4	13.8	1.8
General Chemistry												
Alkalinity, bicarbonate	mg/L	-	264	243	224	264	257	210	270	244	224	252
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as $CaCO_3$)	mg/L	500	264	243	224	264	257	210	270	244	224	252
Anion sum	meq	-	6.83	6.71	6.23	7.19	6.99	6.19	7.29	6.58	6.22	6.75
Anion/Cation ratio	%	-	-1.11	ND (0.01)	1.19	-2.86	1.06	5.57	-2.24	-0.53	2.28	-1.12
Cation sum	meq	-	6.68	6.71	6.38	6.79	7.14	6.92	6.97	6.51	6.51	6.60
Chloride (dissolved)	mg/L	250	17.5	15.4	16.7	21.3	24.3	26.1	24.7	22.2	24.3	23.2
Conductivity	µS/cm	-	626	629	579	650	661	589	668	610	612	613
Dissolved organic carbon (DOC) (dissolved)	mg/L	5	2.43 J	0.93	1.28	1.63	0.80	1.21	0.86	0.73	0.98 J	0.70
Hardness	mg/L	100	**320**	**323**	**302**	**326**	**334**	**323**	**326**	**305**	**305**	**308**
Nitrate (as N)	mg/L	10	7.79	**14.2**	**12.4**	**12.7**	8.62	9.90	8.97	8.11	7.60	7.89
Nitrite (as N)	mg/L	1	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Nitrite/Nitrate	mg/L	-	7.79	14.2	12.4	12.7	8.62	9.90	8.97	8.11	7.60	7.89
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030) J	ND (0.0030)
pH, lab	s.u.	6.5-8.5	7.86	7.79	7.50	7.81	8.06	7.58	7.94	8.13	7.73	7.99
Sulfate (dissolved)	mg/L	500	24.2	19.6	19.3	19.6	26.7	26.3	26.6	24.1	24.8	23.9
Total dissolved solids (TDS)	mg/L	500	319	363	341	408	359	346	392	354	325	366
Total organic carbon (TOC)	mg/L	-	0.69 J	1.25	1.97	ND (2.50)	0.55	1.39	0.64	ND (0.50)	0.61 J	0.55
Total suspended solids (TSS)	mg/L	-	ND (3.0)	98.7	90.1	115	3.4	27.1	3.1	ND (3.0)	ND (3.0)	4.3
Turbidity	NTU	-	ND (0.10)	46.2	51.8 J	82.7	0.28	21.3 J	0.58	0.38	0.44	ND (0.10)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
J+	The result is an estimated quantity, but the result may be biased high.
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
meq	Milliequivalents
NTU	Nephelometric turbidity units
336	Concentration shown is above the respective ODWQS

Table 6.2

2024 Groundwater Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-1-I	BH88-1-I	BH88-1-I	BH88-2-I	BH88-2-I	BH88-2-I	BH88-4-I	BH88-4-I	BH88-4-I	BH88-4A-I	BH88-4A-I	BH88-4A-I
Sample ID:			**GW-78410-052924-AB-020**	**GW-78410-082824-AB-016**	**GW-78410-120524-EH-014**	**GW-78410-052924-EH-01**	**GW-78410-082824-EH-017**	**GW-78410-120424-EH-010**	**GW-78410-052824-009**	**GW-78410-082824-AB-014**	**GW-78410-120524-EH-012**	**GW-78410-052824-007**	**GW-78410-082824-AB-012**	**GW-78410-120524-EH-013**
Sample Date:			**5/29/2024**	**8/28/2024**	**12/5/2024**	**5/29/2024**	**8/28/2024**	**12/4/2024**	**5/28/2024**	**8/28/2024**	**12/5/2024**	**5/28/2024**	**8/28/2024**	**12/5/2024**
Parameters	**Units**	**ODWQS**												
Metals														
Aluminum (dissolved)	mg/L	0.1	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	0.0056	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Antimony (dissolved)	mg/L	0.006	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic (dissolved)	mg/L	0.01	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Barium (dissolved)	mg/L	1	0.157	0.153	0.142	0.0934	0.0929	0.0866	0.247	0.226	0.217	0.240	0.236	0.226
Beryllium (dissolved)	mg/L	-	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth (dissolved)	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron (dissolved)	mg/L	5	0.012	0.011	0.012	ND (0.010)	ND (0.010)	0.010	ND (0.010)	ND (0.010)	0.010	ND (0.010)	ND (0.010)	0.010
Cadmium (dissolved)	mg/L	0.005	0.0000117	0.0000147	0.0000130	0.0000185	0.0000224	0.0000188	ND (0.0000050)	0.0000066	0.0000080	ND (0.0000050)	ND (0.0000050)	0.0000057
Calcium (dissolved)	mg/L	-	87.2	80.5	86.5	81.4	78.5	78.8	87.5	78.0	85.3	84.9	84.4	86.2
Chromium (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper (dissolved)	mg/L	1	0.00039	0.00063	0.00038	0.00155	0.00189	0.00084	0.00035	0.00114	0.00056	ND (0.00020)	0.00023	ND (0.00020)
Iron (dissolved)	mg/L	0.3	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Lead (dissolved)	mg/L	0.01	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Lithium (dissolved)	mg/L	-	0.0029	0.0024	0.0027	0.0011	ND (0.0010)	ND (0.0010)	0.0018	0.0021	0.0021	0.0021	0.0023	0.0023
Magnesium (dissolved)	mg/L	-	28.7	28.8	27.9	23.5	23.7	22.7	27.6	24.5	25.1	26.3	27.7	26.8
Manganese (dissolved)	mg/L	0.05	ND (0.00050)	0.00123	ND (0.00050)	ND (0.00050)	0.00115	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Molybdenum (dissolved)	mg/L	-	0.000246	0.000222	0.000243	0.000164	0.000134	0.000226	0.000214	0.000201	0.000244	0.000271	0.000261	0.000233
Nickel (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorus (dissolved)	mg/L	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium (dissolved)	mg/L	-	1.49	1.50	1.57	0.754	0.917	0.892	1.10	1.13	1.25	1.12	1.14	1.22
Selenium (dissolved)	mg/L	0.05	0.000241	ND (0.000500)	0.000287	0.000094	ND (0.000500)	0.000145	0.000379	ND (0.000500)	0.000471	0.000370	ND (0.000500)	0.000414
Silicon (dissolved)	mg/L	-	5.48	5.16	5.13	4.13	3.82	4.13	5.22	5.19	5.28	5.32	5.49	5.44
Silicon	mg/L	-	5.48	5.75	6.92	4.29	4.41	4.16	5.46	5.80	5.48	5.86	6.13	5.76
Silver (dissolved)	mg/L	-	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)
Sodium (dissolved)	mg/L	200	4.42	4.13	4.12	2.23	2.64	2.38	6.36	14.1	9.68	9.13	8.56	9.49
Strontium (dissolved)	mg/L	-	0.176	0.168	0.173	0.0962	0.0929	0.104	0.214	0.188	0.201	0.217	0.215	0.213
Thallium (dissolved)	mg/L	-	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin (dissolved)	mg/L	-	0.00013	0.00012	ND (0.00010)	ND (0.00010)	0.00010	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium (dissolved)	mg/L	0.02	0.000359	0.000344	0.000356	0.000232	0.000242	0.000352	0.000308	0.000307	0.000329	0.000350	0.000354	0.000354
Vanadium (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc (dissolved)	mg/L	5	0.0032	0.0062	0.0025	0.0089	0.0127	0.0088	0.0016	0.0016	0.0020	0.0020	0.0010	0.0011
Zirconium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
mg/L	Milligram per litre.
0.23	Concentration shown is above the respective ODWQS

Table 6.2

2024 Groundwater Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-4A-II	BH88-4A-II	BH88-4A-II	BH88-5-I	BH88-5-I	BH88-5-I	BH88-5-II	BH88-5-II	BH88-5-II	BH88-5A-I	BH88-5A-I	BH88-5A-I
Sample ID:			**GW-78410-052824-008**	**GW-78410-082824-AB-013**	**GW-78410-120524-EH-011**	**GW-78410-052824-002**	**GW-78410-082724-EH-07**	**GW-78410-120424-EH-00(**	**GW-78410-052824-001**	**GW-78410-082724-EH-09**	**GW-78410-120424-EH-005**	**GW-78410-052824-003**	**GW-78410-082724-EH-08**	**GW-78410-120424-EH-007**
Sample Date:			**5/28/2024**	**8/28/2024**	**12/5/2024**	**5/28/2024**	**8/27/2024**	**12/4/2024**	**5/28/2024**	**8/27/2024**	**12/4/2024**	**5/28/2024**	**8/27/2024**	**12/4/2024**
Parameters	**Units**	**ODWQS**												
Metals														
Aluminum (dissolved)	mg/L	0.1	ND (0.0050)	ND (0.0050)	**0.23**	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Antimony (dissolved)	mg/L	0.006	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic (dissolved)	mg/L	0.01	0.00013	0.00016	0.00021	ND (0.00010)	0.00011	0.00011	ND (0.00010)	0.00011	0.00011	0.00055	0.00036	0.00051
Barium (dissolved)	mg/L	1	0.222	0.223	0.207	0.186	0.173	0.181	0.188	0.172	0.177	0.0134	0.0871	0.0139
Beryllium (dissolved)	mg/L	-	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth (dissolved)	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron (dissolved)	mg/L	5	ND (0.010)	ND (0.010)	ND (0.010)	0.011	0.010	ND (0.010)	0.012	ND (0.010)	ND (0.010)	0.039	0.025	0.037
Cadmium (dissolved)	mg/L	0.005	0.0000062	ND (0.0000050)	0.0000071	0.0000093	0.0000076	ND (0.0000050)	0.0000097	0.0000110	0.0000067	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)
Calcium (dissolved)	mg/L	-	81.3	80.0	84.4	81.0	82.2	86.9	84.9	82.6	86.4	162	124	166
Chromium (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper (dissolved)	mg/L	1	0.00027	0.00058	0.00036	0.00024	0.00025	0.00026	0.00044	0.00053	0.00024	ND (0.00020)	0.00261	ND (0.00020)
Iron (dissolved)	mg/L	0.3	ND (0.010)	ND (0.010)	0.113	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	**0.374**	0.175	**0.35**
Lead (dissolved)	mg/L	0.01	ND (0.000100)	ND (0.000100)	0.000435	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Lithium (dissolved)	mg/L	-	0.0022	0.0023	0.0025	0.0024	0.0030	0.0021	0.0024	0.0026	0.0021	0.0087	0.0066	0.0083
Magnesium (dissolved)	mg/L	-	26.2	27.5	26.2	25.4	26.3	25.9	25.7	26.2	25.7	34.5	31.7	33.8
Manganese (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	0.00410	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00086	0.00071	ND (0.00050)	0.0111	0.00595	0.0106
Molybdenum (dissolved)	mg/L	-	0.000382	0.000375	0.000360	0.000225	0.000220	0.000230	0.000245	0.000228	0.000226	0.00183	0.00112	0.00186
Nickel (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorus (dissolved)	mg/L	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium (dissolved)	mg/L	-	1.17	1.11	1.18	1.36	1.48	1.51	1.39	1.48	1.50	1.37	1.50	1.49
Selenium (dissolved)	mg/L	0.05	0.000406	ND (0.000500)	0.000479	0.000313	0.000301	0.000278	0.000324	0.000296	0.000283	0.000058	0.000154	ND (0.000050)
Silicon (dissolved)	mg/L	-	5.36	5.40	5.90	5.11	5.48	5.36	5.21	5.40	5.33	6.08	6.00	6.17
Silicon	mg/L	-	7.94	11.3	12.8	5.24	5.47	5.37	5.28	5.41	5.35	6.22	7.15	6.26
Silver (dissolved)	mg/L	-	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)
Sodium (dissolved)	mg/L	200	8.34	8.12	8.33	8.57	8.49	8.23	8.51	8.52	8.19	5.30	6.89	5.04
Strontium (dissolved)	mg/L	-	0.301	0.299	0.306	0.193	0.200	0.205	0.198	0.198	0.201	5.18	2.92	5.22
Thallium (dissolved)	mg/L	-	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00400)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium (dissolved)	mg/L	0.02	0.000383	0.000384	0.000454	0.000312	0.000317	0.000332	0.000317	0.000324	0.000323	0.000072	0.000187	0.000075
Vanadium (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc (dissolved)	mg/L	5	0.0086	0.0023	0.0025	0.0039	0.0033	0.0031	0.0052	0.0060	0.0031	0.0016	0.0031	0.0025
Zirconium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
mg/L	Milligram per litre.
0.23	Concentration shown is above the respective ODWQS

Table 6.2

2024 Groundwater Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-6-I	BH88-6-I	BH88-6-I	BH88-6-I	MW1-12	MW1-12	MW1-12	MW2-12	MW2-12	MW2-12	MW3-16	MW3-16
Sample ID:			GW-78410-052924-AB-01(	GW-78410-052924-AB-017	GW-78410-082724-AB-06	GW-78410-12424-CL-0043	GW-78410-052924-EH-01!	GW-78410-082824-EH-020	GW-78410-120624-EH-017	GW-78410-052924-AB-011	GW-78410-082724-AB-11	GW-78410-120624-EH-01(	GW-78410-052824-AB-005	GW-78410-052824-AB-006
Sample Date:			5/29/2024	5/29/2024	8/27/2024	12/4/2024	5/29/2024	8/28/2024	12/6/2024	5/29/2024	8/27/2024	12/6/2024	5/28/2024	5/28/2024
				Duplicate										Duplicate
Parameters	**Units**	**ODWQS**												
Metals														
Aluminum (dissolved)	mg/L	0.1	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Antimony (dissolved)	mg/L	0.006	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic (dissolved)	mg/L	0.01	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Barium (dissolved)	mg/L	1	0.129	0.124	0.116	0.122	0.143	0.146	0.167	0.0793	0.0966	0.0942	0.147	0.147
Beryllium (dissolved)	mg/L	-	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth (dissolved)	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron (dissolved)	mg/L	5	0.012	0.013	0.013	0.013	0.018	0.015	0.017	ND (0.010)	ND (0.010)	ND (0.010)	0.014	0.014
Cadmium (dissolved)	mg/L	0.005	0.0000089	0.0000080	0.0000076	0.0000061	ND (0.0000050)	0.0000069	0.0000053	0.0000172	0.0000198	0.0000197	0.0000083	0.0000088
Calcium (dissolved)	mg/L	-	96.4	98.5	88.8	84.4	67.0	61.4	69.8	115	116	115	68.3	67.6
Chromium (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper (dissolved)	mg/L	1	ND (0.00020)	0.00021	0.00052	0.00025	0.00029	0.00106	0.00031	0.00042	0.00031	0.00078	0.00030	0.00033
Iron (dissolved)	mg/L	0.3	0.021	0.023	0.170	**0.565**	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Lead (dissolved)	mg/L	0.01	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Lithium (dissolved)	mg/L	-	0.0013	0.0014	0.0012	0.0010	0.0017	0.0012	0.0015	0.0029	0.0034	0.0029	0.0014	0.0014
Magnesium (dissolved)	mg/L	-	30.9	30.1	29.0	27.9	18.4	20.7	20.6	33.4	33.7	33.6	19.7	19.9
Manganese (dissolved)	mg/L	0.05	0.0192	0.0191	0.0407	**0.0558**	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Molybdenum (dissolved)	mg/L	-	0.000334	0.000327	0.000454	0.000802	0.000326	0.000371	0.000366	0.000083	0.000104	0.000148	0.000277	0.000264
Nickel (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorus (dissolved)	mg/L	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium (dissolved)	mg/L	-	1.44	1.43	1.56	1.28	1.73	2.11	1.96	0.644	0.996	0.905	1.95	1.96
Selenium (dissolved)	mg/L	0.05	0.000091	0.000091	0.000080	0.000118	0.000178	ND (0.000500)	0.000225	0.000160	0.000113	0.000114	0.000183	0.000208
Silicon (dissolved)	mg/L	-	4.86	4.73	4.70	4.42	3.76	3.86	4.23	5.52	5.47	5.36	3.72	3.66
Silicon	mg/L	-	4.54	4.67	4.69	4.48	3.77	4.32	4.30	6.63	6.08	5.53	3.84	3.93
Silver (dissolved)	mg/L	-	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)
Sodium (dissolved)	mg/L	200	5.46	5.42	5.08	4.32	11.9	11.5	11.4	3.87	32.8	30.6	11.1	10.7
Strontium (dissolved)	mg/L	-	0.158	0.158	0.150	0.135	0.125	0.130	0.143	0.186	0.209	0.205	0.132	0.130
Thallium (dissolved)	mg/L	-	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00013
Titanium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium (dissolved)	mg/L	0.02	0.000187	0.000194	0.000163	0.000150	0.000227	0.000223	0.000251	0.000295	0.000290	0.000296	0.000222	0.000226
Vanadium (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc (dissolved)	mg/L	5	0.0025	0.0026	0.0070	0.0018	0.0020	0.0028	0.0029	0.0033	0.0027	0.0038	0.0034	0.0036
Zirconium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
mg/L	Milligram per litre.
0.23	Concentration shown is above the respective ODWQS

Table 6.2

2024 Groundwater Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW3-16	MW3-16	MW4-16	MW4-16	MW4-16	MW4-16	MW5-16	MW5-16	MW5-16	MW5-16	MW5-16	MW6-16
Sample ID:			GW-78410-082724-CL-01	GW-78410-120624-EH-018	GW-78410-052924-EH-018	GW-78410-082824-EH-015	GW-78410-120624-EH-019	GW-78410-120624-EH-020	GW-78410-052824-AB-10	GW-78410-082724-CL-02	GW-78410-082724-CL-03	GW-78410-12424-CL-001	GW-78410-12424-CL-002	GW-78410-052924-AB-012
Sample Date:			8/27/2024	12/6/2024	5/29/2024	8/28/2024	12/6/2024	12/6/2024	5/28/2024	8/27/2024	8/27/2024	12/4/2024	12/4/2024	5/29/2024
								Duplicate			Duplicate		Duplicate	
Parameters	**Units**	**ODWQS**												
Metals														
Aluminum (dissolved)	mg/L	0.1	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	0.0160	0.0115	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Antimony (dissolved)	mg/L	0.006	0.00011	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic (dissolved)	mg/L	0.01	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00010	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00012
Barium (dissolved)	mg/L	1	0.140	0.163	0.220	0.213	0.236	0.229	0.146	0.131	0.133	0.130	0.132	0.223
Beryllium (dissolved)	mg/L	-	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth (dissolved)	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron (dissolved)	mg/L	5	0.017	0.018	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.010	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.011
Cadmium (dissolved)	mg/L	0.005	0.0000091	0.0000086	ND (0.0000050)	ND (0.0000050)	ND (0.0000050)	0.0000055	0.0000147	0.0000058	0.0000071	0.0000084	0.0000084	0.0000051
Calcium (dissolved)	mg/L	-	68.2	70.0	77.4	75.6	76.7	75.7	88.4	85.2	84.9	86.8	86.6	85.0
Chromium (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper (dissolved)	mg/L	1	0.00134	0.00150	0.00037	0.00036	0.00119 J	0.00034 J	0.00180	0.00038 J	0.00102 J	0.00023	0.00028	0.00031
Iron (dissolved)	mg/L	0.3	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.058 J	0.040 J	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Lead (dissolved)	mg/L	0.01	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Lithium (dissolved)	mg/L	-	0.0018	0.0014	0.0020	0.0016	0.0013	0.0013	0.0024	0.0022	0.0020	0.0013	0.0012	0.0030
Magnesium (dissolved)	mg/L	-	19.9	20.8	28.7	28.8	28.8	29.3	23.2	23.8	23.8	22.7	22.8	26.8
Manganese (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	0.00062	0.00102	0.00466	0.00363	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Molybdenum (dissolved)	mg/L	-	0.000329	0.000351	0.000223	0.000211	0.000212	0.000183	0.000289	0.000226	0.000226	0.000228	0.000230	0.000221
Nickel (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorus (dissolved)	mg/L	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium (dissolved)	mg/L	-	2.07	1.97	1.34	1.36	1.29	1.29	1.79	1.28	1.30	1.21	1.22	1.35
Selenium (dissolved)	mg/L	0.05	0.000193	0.000199	0.000282	ND (0.000500)	0.000258	0.000244	0.000350	0.000379	0.000355	0.000352	0.000373	0.000261
Silicon (dissolved)	mg/L	-	4.13	4.15	5.15	4.74	4.94	4.93	5.07	5.14	5.18	4.93	4.93	5.37
Silicon	mg/L	-	4.27	4.22	14.0	11.5	7.32	6.40	5.29	5.33	5.27	5.23	5.12	5.56
Silver (dissolved)	mg/L	-	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)
Sodium (dissolved)	mg/L	200	11.3	11.7	4.95	4.49	4.48	4.54	9.54	6.02	6.08	5.07	5.08	5.85
Strontium (dissolved)	mg/L	-	0.131	0.137	0.132	0.128	0.133	0.133	0.176	0.162	0.163	0.163	0.162	0.174
Thallium (dissolved)	mg/L	-	ND (0.000010)	ND (0.000010)	0.000011	0.000010	0.000010	0.000010	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00060)	ND (0.00040)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium (dissolved)	mg/L	0.02	0.000236	0.000254	0.000308	0.000310	0.000321	0.000328	0.000295	0.000294	0.000294	0.000292	0.000287	0.000339
Vanadium (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc (dissolved)	mg/L	5	0.0039	0.0056	0.0043	0.0033	0.0064	0.0038	0.0172	0.0015	0.0024	0.0013	0.0016	0.0017
Zirconium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
mg/L	Milligram per litre.
0.23	Concentration shown is above the respective ODWQS

Table 6.2

2024 Groundwater Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW6-16	MW6-16	MW6-16	MW8-22	MW8-22	MW8-22	MW9-22	MW9-22	MW9-22	MW11-22	MW11-22	MW11-22
Sample ID:			GW-78410-082724-AB-04	GW-78410-082724-AB-05	GW-78410-12424-CL-003	GW-78410-052924-EH-013	GW-78410-082824-AB-018	GW-78410-120424-CD-009	GW-78410-052924-EH-014	GW-78410-082824-AB-019	GW-78410-120424-CD-008	GW-78410-052824-004	GW-78410-082724-EH-10	GW-78410-120524-EH-015
Sample Date:			8/27/2024	8/27/2024 Duplicate	12/4/2024	5/29/2024	8/28/2024	12/4/2024	5/29/2024	8/28/2024	12/4/2024	5/28/2024	8/27/2024	12/5/2024
Parameters	**Units**	**ODWQS**												
Metals														
Aluminum (dissolved)	mg/L	0.1	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	0.0580	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Antimony (dissolved)	mg/L	0.006	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Arsenic (dissolved)	mg/L	0.01	0.00014	0.00013	0.00013	0.00011	0.00014	0.00014	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00010	0.00012
Barium (dissolved)	mg/L	1	0.214	0.213	0.221	0.159	0.149	0.154	0.159	0.158	0.155	0.165	0.152	0.149
Beryllium (dissolved)	mg/L	-	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth (dissolved)	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron (dissolved)	mg/L	5	0.010	0.010	0.010	0.010	ND (0.010)	ND (0.010)	0.010	ND (0.010)	0.010	0.012	0.011	0.012
Cadmium (dissolved)	mg/L	0.005	ND (0.0000050)	0.0000055	0.0000053	0.0000112	0.0000084	0.0000108	ND (0.0000050)	ND (0.0000050)	0.0000063	ND (0.0000050)	0.0000056	ND (0.0000050)
Calcium (dissolved)	mg/L	-	81.5	81.2	84.8	86.6	78.2	87.9	87.8	82.0	86.7	82.3	81.8	83.6
Chromium (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Cobalt (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Copper (dissolved)	mg/L	1	0.00025	0.00026	0.00026	0.00046	0.00095	0.00046	0.00035	0.00036	0.00032	0.00035	0.00040	0.00022
Iron (dissolved)	mg/L	0.3	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.048	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Lead (dissolved)	mg/L	0.01	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	0.000113	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Lithium (dissolved)	mg/L	-	0.0025	0.0025	0.0018	0.0023	0.0017	0.0015	0.0032	0.0022	0.0019	0.0020	0.0024	0.0026
Magnesium (dissolved)	mg/L	-	26.6	27.0	26.4	26.0	25.8	26.0	27.8	28.7	26.6	24.1	24.4	24.2
Manganese (dissolved)	mg/L	0.05	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00218	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00057	0.00060
Molybdenum (dissolved)	mg/L	-	0.000226	0.000214	0.000233	0.000221	0.000272	0.000204	0.000203	0.000189	0.000215	0.000214	0.000213	0.000230
Nickel (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Phosphorus (dissolved)	mg/L	-	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium (dissolved)	mg/L	-	1.51	1.52	1.56	1.20	1.27	1.39	1.44	1.42	1.54	1.73	1.81	1.79
Selenium (dissolved)	mg/L	0.05	0.000274	0.000271	0.000269	0.000285	ND (0.000500)	0.000292	0.000269	ND (0.000500)	0.000245	0.000302	0.000312	0.000365
Silicon (dissolved)	mg/L	-	5.47	5.34	5.34	4.77	4.56	4.80	5.52	5.00	5.24	4.84	5.06	4.89
Silicon	mg/L	-	5.51	5.44	5.49	7.22	7.08	7.00	5.40	6.04	5.44	4.96	5.22 J	4.94
Silver (dissolved)	mg/L	-	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)	ND (0.000500)
Sodium (dissolved)	mg/L	200	5.68	5.74	5.53	4.99	7.35	5.09	9.98	9.99	9.65	8.75	8.68	8.94
Strontium (dissolved)	mg/L	-	0.178	0.177	0.178	0.160	0.152	0.166	0.174	0.169	0.177	0.172	0.174	0.173
Thallium (dissolved)	mg/L	-	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)	ND (0.000010)
Tin (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00300)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)
Tungsten (dissolved)	mg/L	-	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium (dissolved)	mg/L	0.02	0.000333	0.000327	0.000330	0.000320	0.000333	0.000317	0.000333	0.000307	0.000322	0.000286	0.000286	0.000305
Vanadium (dissolved)	mg/L	-	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc (dissolved)	mg/L	5	0.0013	0.0012	0.0012	0.0054	0.0058	0.0055	0.0025	0.0020	0.0020	0.0066	0.0022	0.0022
Zirconium (dissolved)	mg/L	-	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

ODWQS	Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
mg/L	Milligram per litre.
0.23	Concentration shown is above the respective ODWQS

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			BH88-2-I	BH88-2-I	BH88-2-I	BH88-6-I	BH88-6-I	BH88-6-I	BH88-6-I
Sample ID:			GW-78410-052924-EH-015	GW-78410-082824-EH-017	GW-78410-120424-EH-010	GW-78410-052924-AB-016	GW-78410-052924-AB-017	GW-78410-082724-AB-06	GW-78410-12424-CL-004
Sample Date:			5/29/2024	8/28/2024	12/4/2024	5/29/2024	5/29/2024 Duplicate	8/27/2024	12/4/2024
Parameters	**Units**	**ODWQS**							
Pesticides and Herbicides									
2,4,5-T	µg/L	0.02	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4,5-TP (Silvex)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
4,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	µg/L	190	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Alachlor	µg/L	5	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ametryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine and N-Dealkylated Metabolites	µg/L	5	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Azinphos-methyl	µg/L	20	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bendiocarb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Benzo(a)pyrene	µg/L	0.01	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)
beta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Bladex (Cyanazine)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bromoxynil	µg/L	5	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbaryl	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbofuran	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Chlorpyrifos	µg/L	90	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
delta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Desethyl atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Diazinon	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dicamba	µg/L	120	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorprop	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Diclofop-methyl	µg/L	9	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Dieldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dimethoate	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dinoseb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Endosulfan I	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan II	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan sulfate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin aldehyde	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ethyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
gamma-BHC (lindane)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Glyphosate	µg/L	280	ND (1.00)	ND (0.10)	ND (0.10)	ND (1.00)	ND (1.00)	ND (0.10)	ND (0.10)
Heptachlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Heptachlor epoxide	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Hexachlorobenzene	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Malathion	µg/L	190	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Mecoprop (MCPP)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Methoxychlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Methyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Metolachlor	µg/L	50	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**BH88-2-I**	**BH88-2-I**	**BH88-2-I**	**BH88-6-I**	**BH88-6-I**	**BH88-6-I**	**BH88-6-I**
Sample ID:			**GW-78410-052924-EH-015**	**GW-78410-082824-EH-017**	**GW-78410-120424-EH-010**	**GW-78410-052924-AB-016**	**GW-78410-052924-AB-017**	**GW-78410-082724-AB-06**	**GW-78410-12424-CL-004**
Sample Date:			**5/29/2024**	**8/28/2024**	**12/4/2024**	**5/29/2024**	**5/29/2024 Duplicate**	**8/27/2024**	**12/4/2024**
Parameters	**Units**	**ODWQS**							
Metribuzin	µg/L	80	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Mirex	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Oxychlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Phorate	µg/L	2	ND (0.250)	ND (0.250)	ND (0.25)	ND (0.250)	ND (0.250)	ND (0.250)	ND (0.25)
Prometon	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Prometryn	µg/L	1	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Propazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Simazine	µg/L	10	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Temephos	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Terbufos	µg/L	1	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Terbutryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Triallate	µg/L	230	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Trifluralin	µg/L	45	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)

Notes:

ODWQS Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).

ND (##) Not detected at the associated reporting limit shown in brackets

µg/L Microgram per litre.

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
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Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW1-12	MW1-12	MW1-12	MW3-16	MW3-16	MW3-16	MW3-16
Sample ID:			GW-78410-052924-EH-019	GW-78410-082824-EH-020	GW-78410-120624-EH-017	GW-78410-052824-AB-005	GW-78410-052824-AB-006	GW-78410-082724-CL-01	GW-78410-120624-EH-018
Sample Date:			5/29/2024	8/28/2024	12/6/2024	5/28/2024	5/28/2024 Duplicate	8/27/2024	12/6/2024
Parameters	**Units**	**ODWQS**							
Pesticides and Herbicides									
2,4,5-T	µg/L	0.02	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4,5-TP (Silvex)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
4,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	µg/L	190	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Alachlor	µg/L	5	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ametryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine and N-Dealkylated Metabolites	µg/L	5	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Azinphos-methyl	µg/L	20	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bendiocarb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Benzo(a)pyrene	µg/L	0.01	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)
beta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Bladex (Cyanazine)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bromoxynil	µg/L	5	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbaryl	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbofuran	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Chlorpyrifos	µg/L	90	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
delta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Desethyl atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Diazinon	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dicamba	µg/L	120	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorprop	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Diclofop-methyl	µg/L	9	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Dieldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dimethoate	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dinoseb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Endosulfan I	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan II	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan sulfate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin aldehyde	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ethyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
gamma-BHC (lindane)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Glyphosate	µg/L	280	ND (1.00)	ND (0.10)	ND (0.10)	ND (1.00)	ND (1.00)	ND (0.10)	ND (0.10)
Heptachlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Heptachlor epoxide	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Hexachlorobenzene	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Malathion	µg/L	190	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Mecoprop (MCPP)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Methoxychlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Methyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Metolachlor	µg/L	50	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)

Table 6.3

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Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**MW1-12**	**MW1-12**	**MW1-12**	**MW3-16**	**MW3-16**	**MW3-16**	**MW3-16**
Sample ID:			**GW-78410-052924-EH-019**	**GW-78410-082824-EH-020**	**GW-78410-120624-EH-017**	**GW-78410-052824-AB-005**	**GW-78410-052824-AB-006**	**GW-78410-082724-CL-01**	**GW-78410-120624-EH-018**
Sample Date:			**5/29/2024**	**8/28/2024**	**12/6/2024**	**5/28/2024**	**5/28/2024 Duplicate**	**8/27/2024**	**12/6/2024**
Parameters	**Units**	**ODWQS**							
Metribuzin	µg/L	80	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Mirex	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Oxychlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Phorate	µg/L	2	ND (0.250)	ND (0.250)	ND (0.25)	ND (0.250)	ND (0.250)	ND (0.250)	ND (0.25)
Prometon	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Prometryn	µg/L	1	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Propazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Simazine	µg/L	10	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Temephos	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Terbufos	µg/L	1	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Terbutryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Triallate	µg/L	230	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Trifluralin	µg/L	45	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)

Notes:

ODWQS Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).

ND (##) Not detected at the associated reporting limit shown in brackets

µg/L Microgram per litre.

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			MW4-16	MW4-16	MW4-16	MW4-16	MW5-16	MW5-16	MW5-16
Sample ID:			GW-78410-052924-EH-018	GW-78410-082824-EH-015	GW-78410-120624-EH-019	GW-78410-120624-EH-020	GW-78410-052824-AB-10	GW-78410-082724-CL-02	GW-78410-082724-CL-03
Sample Date:			5/29/2024	8/28/2024	12/6/2024	12/6/2024 Duplicate	5/28/2024	8/27/2024	8/27/2024 Duplicate
Parameters	**Units**	**ODWQS**							
Pesticides and Herbicides									
2,4,5-T	µg/L	0.02	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4,5-TP (Silvex)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
4,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	µg/L	190	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Alachlor	µg/L	5	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ametryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine and N-Dealkylated Metabolites	µg/L	5	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Azinphos-methyl	µg/L	20	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)
Bendiocarb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Benzo(a)pyrene	µg/L	0.01	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)
beta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Bladex (Cyanazine)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)
Bromoxynil	µg/L	5	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbaryl	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbofuran	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Chlorpyrifos	µg/L	90	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
delta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Desethyl atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Diazinon	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dicamba	µg/L	120	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorprop	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Diclofop-methyl	µg/L	9	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)
Dieldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dimethoate	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dinoseb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Endosulfan I	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan II	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan sulfate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin aldehyde	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ethyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
gamma-BHC (lindane)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Glyphosate	µg/L	280	ND (1.00)	ND (0.10)	ND (0.10)	ND (0.10)	ND (1.00)	ND (0.10)	ND (0.10)
Heptachlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Heptachlor epoxide	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Hexachlorobenzene	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Malathion	µg/L	190	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Mecoprop (MCPP)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Methoxychlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Methyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Metolachlor	µg/L	50	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**MW4-16**	**MW4-16**	**MW4-16**	**MW4-16**	**MW5-16**	**MW5-16**	**MW5-16**
Sample ID:			**GW-78410-052924-EH-018**	**GW-78410-082824-EH-015**	**GW-78410-120624-EH-019**	**GW-78410-120624-EH-020**	**GW-78410-052824-AB-10**	**GW-78410-082724-CL-02**	**GW-78410-082724-CL-03**
Sample Date:			**5/29/2024**	**8/28/2024**	**12/6/2024**	**12/6/2024 Duplicate**	**5/28/2024**	**8/27/2024**	**8/27/2024 Duplicate**
Parameters	**Units**	**ODWQS**							
Metribuzin	µg/L	80	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Mirex	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Oxychlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Phorate	µg/L	2	ND (0.250)	ND (0.250)	ND (0.25)	ND (0.25)	ND (0.250)	ND (0.250)	ND (0.250)
Prometon	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Prometryn	µg/L	1	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Propazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Simazine	µg/L	10	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)
Temephos	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Terbufos	µg/L	1	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Terbutryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Triallate	µg/L	230	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)
Trifluralin	µg/L	45	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)

Notes:

ODWQS Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).

ND (##) Not detected at the associated reporting limit shown in brackets

µg/L Microgram per litre.

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**MW5-16**	**MW5-16**	**MW6-16**	**MW6-16**	**MW6-16**	**MW6-16**
Sample ID:			**GW-78410-12424-CL-001**	**GW-78410-12424-CL-002**	**GW-78410-052924-AB-012**	**GW-78410-082724-AB-04**	**GW-78410-082724-AB-05**	**GW-78410-12424-CL-003**
Sample Date:			**12/4/2024**	**12/4/2024**	**5/29/2024**	**8/27/2024**	**8/27/2024**	**12/4/2024**
				Duplicate			**Duplicate**	
Parameters	**Units**	**ODWQS**						
Pesticides and Herbicides								
2,4,5-T	µg/L	0.02	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4,5-TP (Silvex)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	100	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
4,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	µg/L	190	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Alachlor	µg/L	5	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ametryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine and N-Dealkylated Metabolites	µg/L	5	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Azinphos-methyl	µg/L	20	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bendiocarb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Benzo(a)pyrene	µg/L	0.01	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)
beta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Bladex (Cyanazine)	µg/L	-	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Bromoxynil	µg/L	5	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbaryl	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbofuran	µg/L	90	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Chlorpyrifos	µg/L	90	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
delta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Desethyl atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Diazinon	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dicamba	µg/L	120	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorprop	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Diclofop-methyl	µg/L	9	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Dieldrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dimethoate	µg/L	20	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dinoseb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Endosulfan I	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan II	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan sulfate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin aldehyde	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ethyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
gamma-BHC (lindane)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Glyphosate	µg/L	280	ND (0.10)	ND (0.10)	ND (1.00)	ND (0.10)	ND (0.10)	ND (0.10)
Heptachlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Heptachlor epoxide	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Hexachlorobenzene	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Malathion	µg/L	190	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Mecoprop (MCPP)	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Methoxychlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Methyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Metolachlor	µg/L	50	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)

Table 6.3

2024 Groundwater Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**MW5-16**	**MW5-16**	**MW6-16**	**MW6-16**	**MW6-16**	**MW6-16**
Sample ID:			**GW-78410-12424-CL-001**	**GW-78410-12424-CL-002**	**GW-78410-052924-AB-012**	**GW-78410-082724-AB-04**	**GW-78410-082724-AB-05**	**GW-78410-12424-CL-003**
Sample Date:			**12/4/2024**	**12/4/2024**	**5/29/2024**	**8/27/2024**	**8/27/2024**	**12/4/2024**
				Duplicate			**Duplicate**	
Parameters	**Units**	**ODWQS**						
Metribuzin	µg/L	80	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Mirex	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Oxychlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Phorate	µg/L	2	ND (0.25)	ND (0.25)	ND (0.250)	ND (0.250)	ND (0.250)	ND (0.25)
Prometon	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Prometryn	µg/L	1	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Propazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Simazine	µg/L	10	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Temephos	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Terbufos	µg/L	1	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Terbutryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Triallate	µg/L	230	ND (0.10)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.10)
Trifluralin	µg/L	45	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)

Notes:

ODWQS Ontario Drinking Water Quality Standards (2020); including aethetic objectives and operations guidelines (June 2003, revised 2006).

ND (##) Not detected at the associated reporting limit shown in brackets

µg/L Microgram per litre.

Table 6.4

2024 Surface Water Analytical Data - General Chemistry
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**SW1B**	**SW1B**	**SW1B**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**
Sample ID:			**SW-78410-052924-EH-001**	**SW-78410-082724-EH-01**	**SW-78410-120624-EH-001**	**W-78410-050324-EH-02**	**W-78410-050324-EH-01**	**W-78410-111424-EH-01**	**W-78410-111424-EH-02**
Sample Date:			**5/29/2024**	**8/27/2024**	**12/6/2024**	**5/3/2024**	**5/3/2024 Duplicate**	**11/14/2024**	**11/14/2024 Duplicate**
Parameters	**Units**	**PWQO**							
Field Parameters									
Conductivity, field	µS/cm	-	423	519	544	465	465	681.00	689.00
Dissolved oxygen (DO), field	mg/L	-	6.76	4.97	5.6	1.38	1.38	6.94	7.54
Oxidation reduction potential (ORP), field	millivolts	-	81	33	149	264	264	39	29
pH, field	s.u.	6.5-8.5	7.2	6.59	7.52	8.18	8.18	7.42	7.46
Temperature, field	Deg C	-	17.59	22.95	-0.19	14.52	14.52	8.1	7.84
Turbidity, field	NTU	-	1.5	56.5	31.9	3	3	41.9	51.3
General Chemistry									
Alkalinity, bicarbonate	mg/L	-	158	184	189	139	136	138	140
Alkalinity, carbonate	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, hydroxide	mg/L	-	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)
Alkalinity, total (as CaCO3)	mg/L	-	158	184	189	143	139	138	140
Anion sum	meq	-	4.15	4.82	5.20	4.68	4.61	6.29	6.29
Anion/Cation ratio	%	-	0.60	-0.31	-1.46	1.37 J	2.43 J	1.26	1.56
Cation sum	meq	-	4.20	4.79	5.05	4.81	4.84	6.45	6.49
Chloride (dissolved)	mg/L	-	27.6	30.6	35.0	37.9	38.0	95.9	94.7
Conductivity	µmhos/cm	-	407	460	499	470	472	617	610
Dissolved organic carbon (DOC) (dissolved)	mg/L	-	10.4	8.22	5.79	4.05 J	4.11	1.54	1.49
Hardness	mg/L	-	190	217	224	212	214	266	268
Nitrate (as N)	mg/L	-	ND (0.020)	ND (0.020)	1.28	3.52	3.52	2.73	2.72
Nitrite (as N)	mg/L	-	ND (0.010)	ND (0.010)	0.028	0.055	0.057	0.027	0.027
Nitrite/Nitrate	mg/L	-	ND (0.0224)	ND (0.0224)	1.31	3.58	3.58	2.76	2.75
Oil and grease	mg/L	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Orthophosphate (dissolved)	mg/L	-	ND (0.0030)	ND (0.0030)	0.0033	ND (0.0030)	ND (0.0030)	ND (0.0030)	ND (0.0030)
pH, lab	s.u.	6.5-8.5	7.91	7.98	8.11	8.37	8.33	8.17	8.14
Sulfate (dissolved)	mg/L	-	10.5	13.5	16.3	24.2	24.3	30.3	30.0
Total dissolved solids (TDS)	mg/L	-	212	267	274	266	263	404	420
Total organic carbon (TOC)	mg/L	-	13.6	10.3	5.87	3.25 J	3.91	1.38	1.46
Total suspended solids (TSS)	mg/L	-	3.1	22.3	16.9	21.2	8.6	9.3	8.5
Turbidity	NTU	-	0.51	3.48 J	4.39	4.64 J	3.46 J	6.76	11.7

Notes:

PWQO	Provincial Water Quality Objectives, July 1994, revised February 1999
(1)	Erroneous field pH reading confirmed by laboratory results.
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration
µS/cm	MicroSiemens per centimetre
µmhos/cm	Micromhos per centimetre
mg/L	Milligram per litre
Deg C	Degrees Celsius
meq	Milliequivalents
NTU	Nephelometric turbidity units

Table 6.5

2024 Surface Water Analytical Data - Metals
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**SW1B**	**SW1B**	**SW1B**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**
Sample ID:			**SW-78410-052924-EH-001**	**SW-78410-082724-EH-01**	**SW-78410-120624-EH-001**	**W-78410-050324-EH-02**	**W-78410-050324-EH-01**	**W-78410-111424-EH-01**	**W-78410-111424-EH-02**
Sample Date:			**5/29/2024**	**8/27/2024**	**12/6/2024**	**5/3/2024**	**5/3/2024 Duplicate**	**11/14/2024**	**11/14/2024 Duplicate**
Parameters	**Units**	**PWQO**							
Metals									
Aluminum	mg/L	0.075	0.0168	0.0448	**0.0882**	0.110	**0.0729**	**0.153**	**0.152**
Aluminum (dissolved)	mg/L	0.075	ND (0.0050)	ND (0.0050)	ND (0.0050)	0.0154	0.0162	0.0120	0.0111
Antimony	mg/L	0.02	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00011	0.00011
Arsenic	mg/L	0.005	0.00021	0.00019	0.00018	0.00047	0.00047	0.00052	0.00054
Barium	mg/L	-	0.105	0.114	0.108	0.0740	0.0762	0.0636	0.0652
Beryllium	mg/L	0.011	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)	ND (0.000100)
Bismuth	mg/L	-	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Boron	mg/L	0.2	0.018	0.020	0.012	0.025	0.025	0.064	0.066
Cadmium	mg/L	0.0002	ND (0.0000050)	0.0000101	0.0000053	0.0000094	0.0000069	0.0000187	0.0000166
Calcium	mg/L	-	45.2	53.2	55.4	45.9	46.1	53.2	53.0
Calcium (dissolved)	mg/L	-	45.8	51.1	53.1	45.2	45.8	52.4	52.7
Chromium	mg/L	0.0089	0.00065	0.00053	ND (0.00050)	ND (0.00050)	ND (0.00050)	0.00057	ND (0.00050)
Cobalt	mg/L	0.0009	ND (0.00010)	ND (0.00010)	ND (0.00010)	0.00026	0.00018	0.00021	0.00022
Copper	mg/L	0.005	ND (0.00100)	0.00224	ND (0.00100)	0.00190	0.00152	0.00194	0.00198
Iron	mg/L	0.3	ND (0.050)	0.078	0.081	0.185 J	0.101 J	**0.304**	0.300
Lead	mg/L	0.005	0.000075	0.00239	0.000308	0.000479 J	0.000276 J	0.000838	0.000852
Lithium	mg/L	-	0.0013	0.0013	0.0014	0.0029	0.0029	0.0052	0.0051
Magnesium	mg/L	-	18.4	22.2	22.7	24.2	24.0	33.2	33.3
Magnesium (dissolved)	mg/L	-	18.4	21.7	22.1	24.1	24.2	32.9	33.2
Manganese	mg/L	-	0.0218	0.0320	0.0143	0.0552	0.0547	0.0280	0.0282
Molybdenum	mg/L	0.04	ND (0.000050)	0.000107	0.000317	0.000860	0.000879	0.00248	0.00247
Nickel	mg/L	0.025	ND (0.00050)	0.00147	ND (0.00050)	0.00051 J	0.00114 J	0.00053	0.00052
Phosphorus	mg/L	0.01	ND (0.050)	ND (0.050)	**0.152**	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Potassium	mg/L	-	2.17	2.67	4.38	2.79	2.77	6.12	6.08
Selenium	mg/L	0.1	0.000072	0.000063	0.000060	0.000184	0.000182	0.000150	0.000132
Silicon	mg/L	-	4.75	3.77	0.56	2.10	2.08	3.27	3.34
Silicon (dissolved)	mg/L	-	5.19	3.74	0.412	1.86	1.84	3.39	3.33
Silver	mg/L	0.0001	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)	ND (0.000050)
Sodium	mg/L	-	7.85	10.4	12.0	11.5	11.5	21.0	21.4
Strontium	mg/L	-	0.101	0.128	0.127	0.148	0.147	0.237	0.240
Thallium	mg/L	0.0003	ND (0.000010)	ND (0.000010)	ND (0.000010)	0.000017	0.000017	0.000018	0.000018
Tin	mg/L	-	0.00011	0.00032	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Titanium	mg/L	-	0.00042	0.00149	0.00251	0.00294	0.00272	0.00457	0.00426
Tungsten	mg/L	0.03	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Uranium	mg/L	0.005	0.000059	0.000084	0.000366	0.000221	0.000217	0.000171	0.000178
Vanadium	mg/L	0.006	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Zinc	mg/L	0.02	ND (0.0030)	0.0083	0.0036	0.0040	0.0036	0.0074	0.0069
Zirconium	mg/L	0.004	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)	ND (0.00030)

Notes:

PWQO	Provincial Water Quality Objectives, July 1994, revised February 1999.
ND (##)	Not detected at the associated reporting limit shown in brackets
J	Estimated concentration.
J-	The result is an estimated quantity, but the result may be biased low.
mg/L	Milligram per litre.
0.0882	Concentration is above the PWQO.

Table 6.6

2024 Surface Water Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			SW1B	SW1B	SW1B	RECIRCULATION POND	RECIRCULATION POND	RECIRCULATION POND	RECIRCULATION POND
Sample ID:			SW-78410-052924-EH-001	SW-78410-082724-EH-01	SW-78410-120624-EH-001	W-78410-050324-EH-02	W-78410-050324-EH-01	W-78410-111424-EH-01	W-78410-111424-EH-02
Sample Date:			5/29/2024	8/27/2024	12/6/2024	5/3/2024	5/3/2024 Duplicate	11/14/2024	11/14/2024 Duplicate
Parameters	**Units**	**PWQO**							
Pesticides and Herbicides									
2,4,5-T	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4,5-TP (Silvex)	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4'-DDT	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	4	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
4,4'-DDD	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDE	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4,4'-DDT	µg/L	0.003	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	µg/L	-	ND (2.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Alachlor	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aldrin	µg/L	0.001	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
alpha-Chlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ametryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Aminomethyl phosphoric acid (AMPA)	µg/L	-	-	-	-	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Atrazine and N-Dealkylated Metabolites	µg/L	-	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Azinphos-methyl	µg/L	0.005	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)
Bendiocarb	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Benzo(a)pyrene	µg/L	-	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)
beta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Bladex (Cyanazine)	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)
Bromoxynil	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbaryl	µg/L	0.2	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Carbofuran	µg/L	-	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Chlordane	µg/L	0.06	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Chlorpyrifos	µg/L	0.001	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
delta-BHC	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Desethyl atrazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Diazinon	µg/L	0.08	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dicamba	µg/L	200	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorprop	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Diclofop-methyl	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)
Dieldrin	µg/L	0.001	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dimethoate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Dinoseb	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Endosulfan I	µg/L	0.003	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan II	µg/L	0.003	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endosulfan sulfate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin	µg/L	0.002	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Endrin aldehyde	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Ethyl parathion	µg/L	0.008	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
gamma-BHC (lindane)	µg/L	0.01	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Glyphosate	µg/L	-	ND (1.00)	ND (0.10)	ND (0.10)	ND (0.14)	ND (0.10)	ND (0.10)	ND (0.10)
Heptachlor	µg/L	0.001	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Heptachlor epoxide	µg/L	0.001	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Hexachlorobenzene	µg/L	0.0065	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Malathion	µg/L	0.1	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Mecoprop (MCPP)	µg/L	-	ND (2.50)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)	ND (0.500)
Methoxychlor	µg/L	0.04	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Methyl parathion	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Metolachlor	µg/L	3	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)

Table 6.6

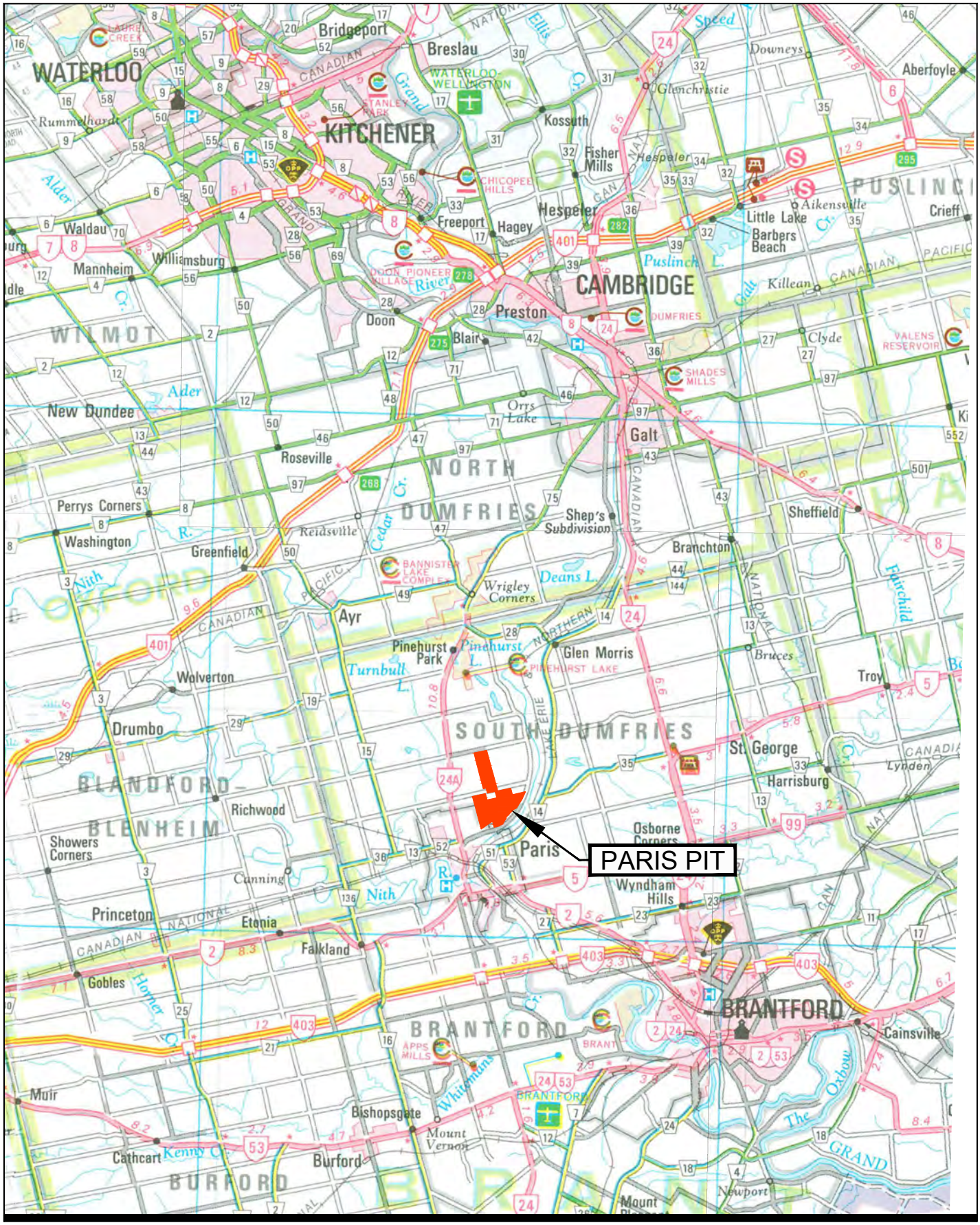
2024 Surface Water Analytical Data - Pesticides and Herbicides
2024 Combined Annual Monitoring Report
Dufferin Aggregates Paris Pit
County of Brant, Ontario

Sample Location:			**SW1B**	**SW1B**	**SW1B**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**	**RECIRCULATION POND**
Sample ID:			**SW-78410-052924-EH-001**	**SW-78410-082724-EH-01**	**SW-78410-120624-EH-001**	**W-78410-050324-EH-02**	**W-78410-050324-EH-01**	**W-78410-111424-EH-01**	**W-78410-111424-EH-02**
Sample Date:			**5/29/2024**	**8/27/2024**	**12/6/2024**	**5/3/2024**	**5/3/2024**	**11/14/2024**	**11/14/2024**
							Duplicate		**Duplicate**
Parameters	**Units**	**PWQO**							
Metribuzin	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Mirex	µg/L	0.001	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Oxychlordane	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Phorate	µg/L	-	ND (0.250)	ND (0.250)	ND (0.25)	ND (0.250)	ND (0.250)	ND (0.25)	ND (0.25)
Prometon	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Prometryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Propazine	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Simazine	µg/L	10	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)
Temephos	µg/L	-	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Terbufos	µg/L	-	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Terbutryn	µg/L	-	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)
Triallate	µg/L	-	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.100)	ND (0.100)	ND (0.10)	ND (0.10)
Trifluralin	µg/L	-	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)

Notes:

PWQO	Provincial Water Quality Objectives, July 1994, revised February 1999.
-	Not analyzed.
ND (##)	Not detected at the associated reporting limit shown in brackets
µg/L	Microgram per litre.

Figures



0 2000 4000 6000m

1:200000

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

SITE LOCATION

Project No. **78410**
Date **January 2025**

FIGURE 1.1

Filename: N:\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D106_WA-016.dwg
Plot Date: 09 January 2025 9:43 AM

Source: Rand McNally Ontario Atlas

LEGEND

LICENSED BOUNDARY

LIMIT OF EXTRACTION

PHASING BOUNDARY

AREAS APPROVED FOR BELOW WATER EXTRACTION

ADDITIONAL LANDS OWNED BY CRH

LOT 26

LOT 26
LOT 27

LOT 27
CON 4

LOT 26
CON 4

PARIS PLAINS CHUCH ROAD

PHASE 7

PHASE 6

LOT 27
CON 3

LOT 26
CON 3

PHASE 5

AREA 2

LOT 28
CON 3

WATTS POND ROAD

AREAS APPROVED FOR BELOW WATER TABLE EXTRACTION

PHASE 4

CONC. 3
CONC. 2

PHASE 2

TELFER WELLFIELD

AREA 1

PHASE 3

LOT 28
CON 2

SETTLING POND AREA

NO EXTRACTION

PHASE 1

EXISTING NATURAL PONDS

SETTLING CELLS

RECIRCULATION CELL (LINED)

PHASE 8

GRAND RIVER

GILBERT WELLFIELD

SOURCE POND

WEST RIVER ROAD

GILBERT CREEK

LOT 27
CON 2

LOT 29
CON 2

ABANDONED RAILWAY

PARIS LINKS ROAD

0 100 200 300m

1:10000

Coordinate System:
UTM ZONE 17 NAD83
METRES

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

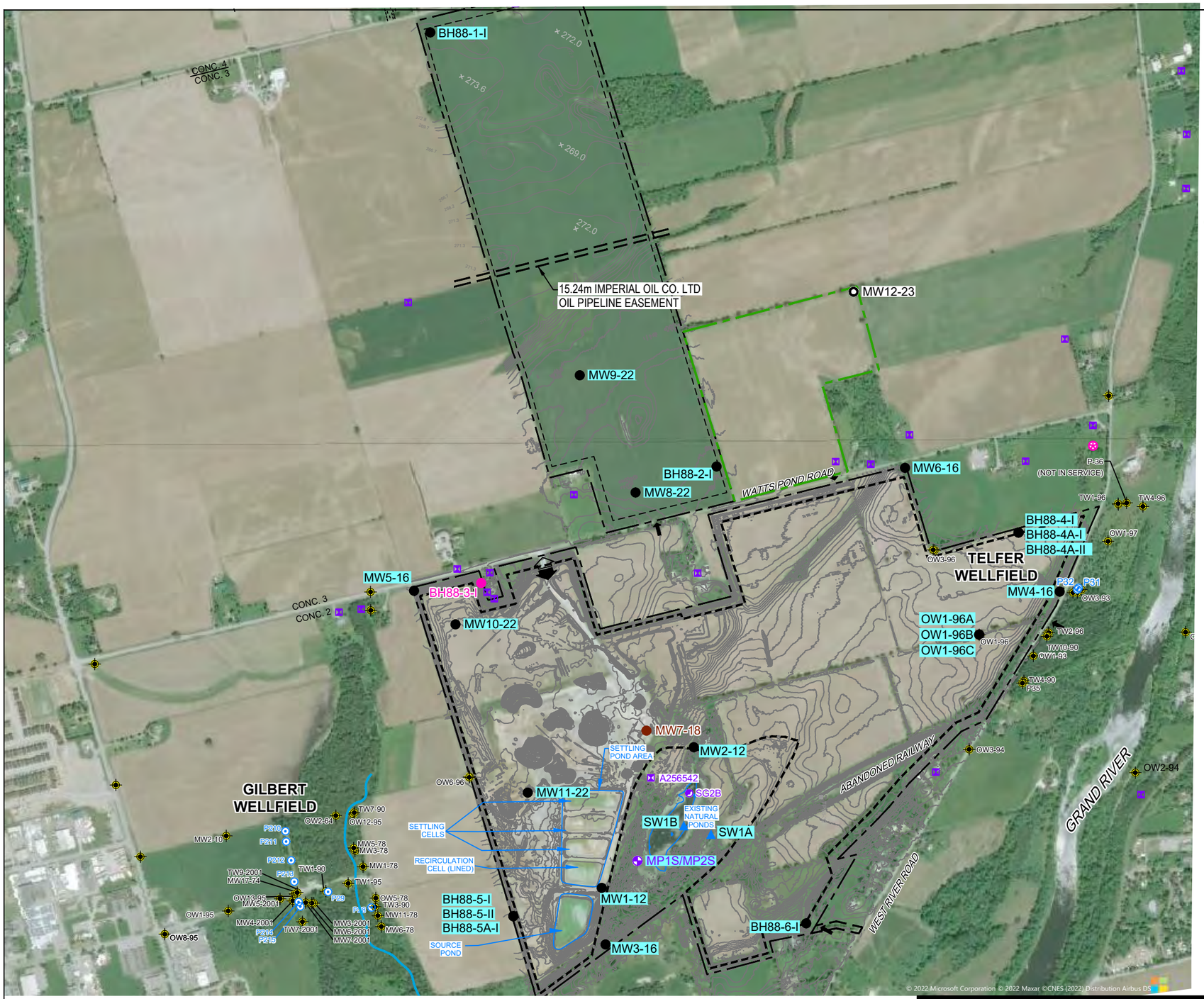
PARIS PIT AND SURROUNDING LANDS

Project No. **78410**
Date **January 2025**

FIGURE 1.2

Filename: N:\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D107_WA-016.dwg
Plot Date: 09 January 2025 9:42 AM

Source: Microsoft product Screen shot(s) Reprinted with permission from Microsoft corporation, Accessed 2022



LEGEND

- 253.0 — GROUND SURFACE ELEVATION CONTOUR (mAMSL) - DECEMBER 14, 2023
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EASEMENT
- ADDITIONAL LANDS OWNED BY CRH
- PROPOSED ENTRANCE/EXIT
- EXISTING FIELD ENTRANCE
- + 250.7 — SPOT ELEVATION
- MW1-12 — MONITORING WELL INCLUDED IN THE GROUNDWATER MONITORING NETWORK
- SW1A — SURFACE WATER LOCATION INCLUDED IN THE SURFACE WATER MONITORING NETWORK
- MP1S/MP1D/MP2S — PIEZOMETER (NESTED AS SHALLOW AND DEEP) INCLUDED IN THE MONITORING NETWORK
- BH88-3-I — MONITORING WELL WAS DESTROYED
- MW7-18 — DECOMMISSIONED MONITORING WELL
- SG2B — STAFF GAUGE
- MW12-23 — SUPPLEMENTAL MONITORING WELL

WATER WELL RECORD (WWR) PRIMARY USE

- DOMESTIC WATER SUPPLY WELL (APPROXIMATE LOCATION)
- MUNICIPAL MONITORING WELL
- PUBLIC WATER SUPPLY WELL
- IRRIGATION WELL (APPROXIMATE LOCATION)
- LIVESTOCK WELL (APPROXIMATE LOCATION)

0 125 250 375m

1:12500

Coordinate System: UTM ZONE 17 NAD83 METRES

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

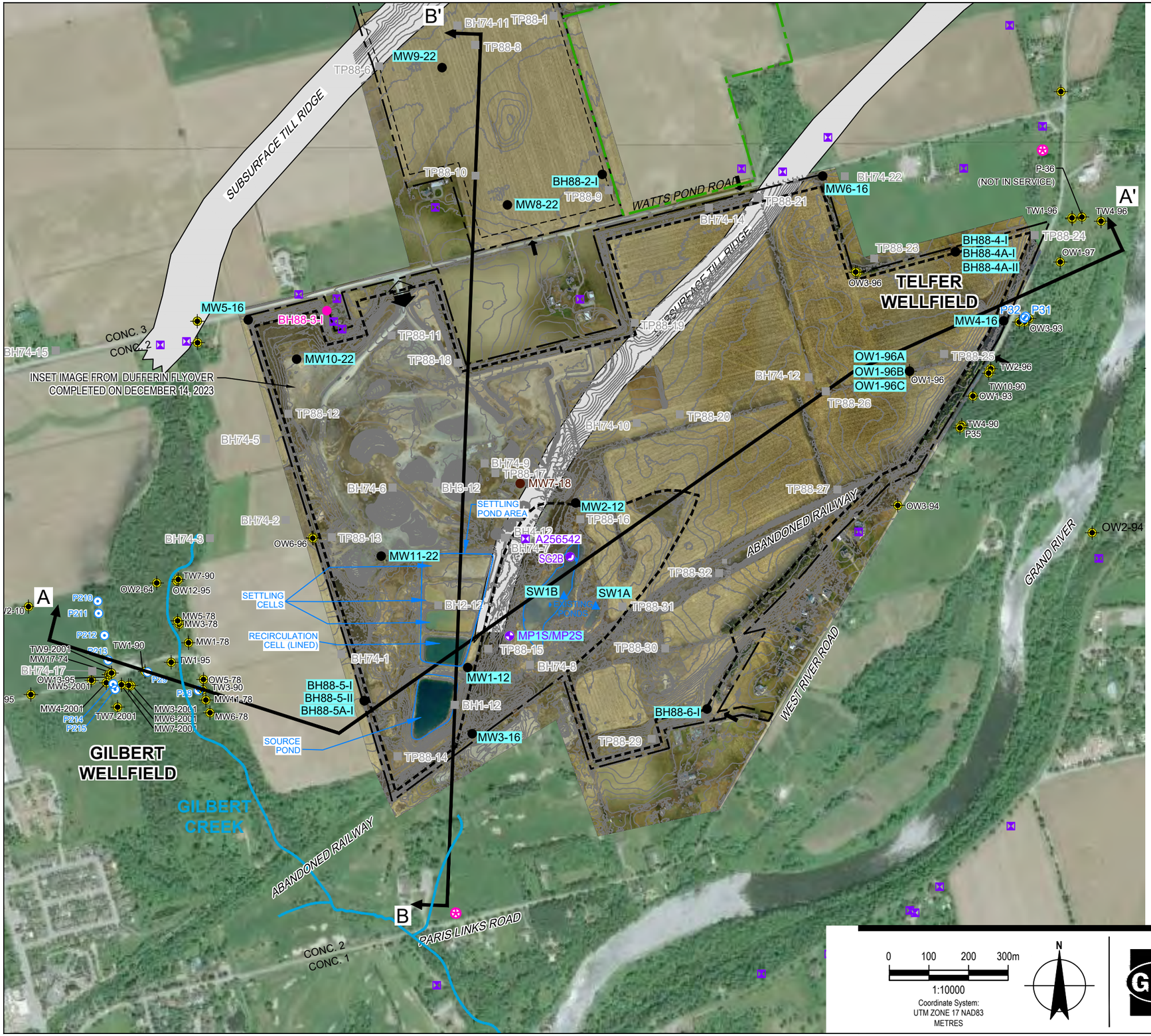
SITE MAP AND MONITORING LOCATIONS

Project No. **78410**
Date **January 2025**

FIGURE 1.3

Filename: N:\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D108_WA-016.dwg
Plot Date: 09 January 2025 9:43 AM

Source: J.H. Cohoon Engineering Limited, Job 9738, Existing Features, 2 of 5



LEGEND

- 253.0 — GROUND SURFACE ELEVATION CONTOUR - DECEMBER 14, 2023
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EASEMENT
- ADDITIONAL LANDS OWNED BY CRH
- SITE ENTRANCE/EXIT
- EXISTING FIELD ENTRANCE
- + 250.7 — SPOT ELEVATION
- MW1-12 — MONITORING WELL INCLUDED IN THE GROUNDWATER MONITORING NETWORK
- BH1-12 — BOREHOLE (CRA, JULY 2012)
- TP88-11 — TEST PIT (JAGGER HIMS LTD., 1988) (APPROXIMATE LOCATION)
- BH74-10 — BOREHOLE (FARVOLDEN, 1974) (APPROXIMATE LOCATION)
- SW1A — SURFACE WATER LOCATION INCLUDED IN THE SURFACE WATER MONITORING NETWORK
- MP1S/MP1D/MP2S — PIEZOMETER (NESTED AS SHALLOW AND DEEP) INCLUDED IN THE MONITORING NETWORK
- BH88-3-I — MONITORING WELL WAS DESTROYED
- MW7-18 — DECOMMISSIONED MONITORING WELL
- SG2B — STAFF GAUGE
- MW12-23 — SUPPLEMENTAL MONITORING WELL
- GEOLOGIC CROSS-SECTION LOCATION

WATER WELL RECORD (WWR) PRIMARY USE

- DOMESTIC WATER SUPPLY WELL (APPROXIMATE LOCATION)
- MUNICIPAL MONITORING WELL
- PUBLIC WATER SUPPLY WELL
- IRRIGATION WELL (APPROXIMATE LOCATION)
- LIVESTOCK WELL (APPROXIMATE LOCATION)

0 100 200 300m

1:10000

Coordinate System: UTM ZONE 17 NAD83 METRES

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

SITE STRATIGRAPHIC CROSS - SECTION LOCATIONS

Project No. **78410**
Date **November 2024**

FIGURE 2.1

Filename: \\ghdnet\ghd\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D101_WA-016.dwg
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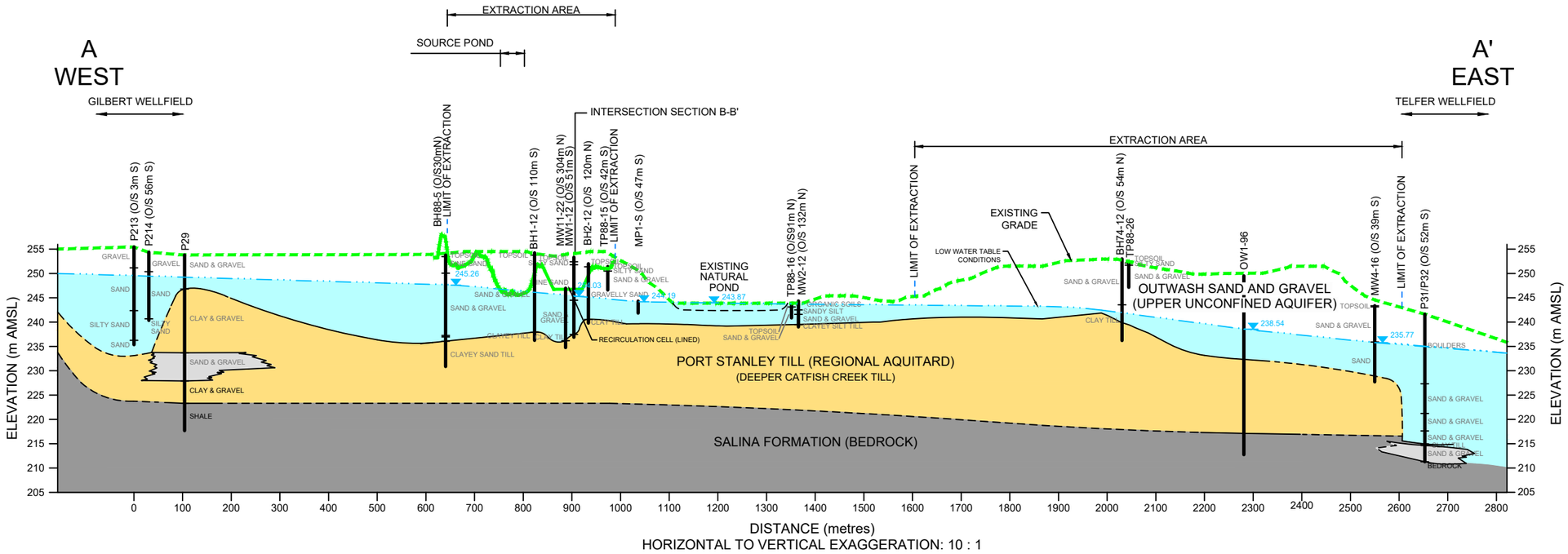
Source: J.H. Cohoon Engineering limited, Job 9738, Existing Features, 2 of 5, Microsoft Product Screen shot(s), Reprinted with permission from Microsoft Corporation, Accessed 2022



LEGEND

- BH88-5 — MONITORING WELL / SOIL BORING / TEST PIT ID
- PRE-EXTRACTION GROUND SURFACE
- GROUND SURFACE ELEVATION - DECEMBER 14, 2023
- STRATIGRAPHIC CONTACT
- MAXIMUM OBSERVED WATER TABLE
- INTERPRETED MAXIMUM GROUNDWATER TABLE

HORIZONTAL
1:10000
0 100 200 300
VERTICAL
1:1000
0 10 20 30

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

SITE STRATIGRAPHIC CROSS-SECTION A-A'

Project No. **78410**
Date **November 2024**

FIGURE 2.2

Source: Reproduced and modified from County of Brant Municipal Groundwater Study, Lotowater June 8, 2005 (figure 5.4.2)

Filename: \\ghdnet\ghd\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D102_WA-016.dwg
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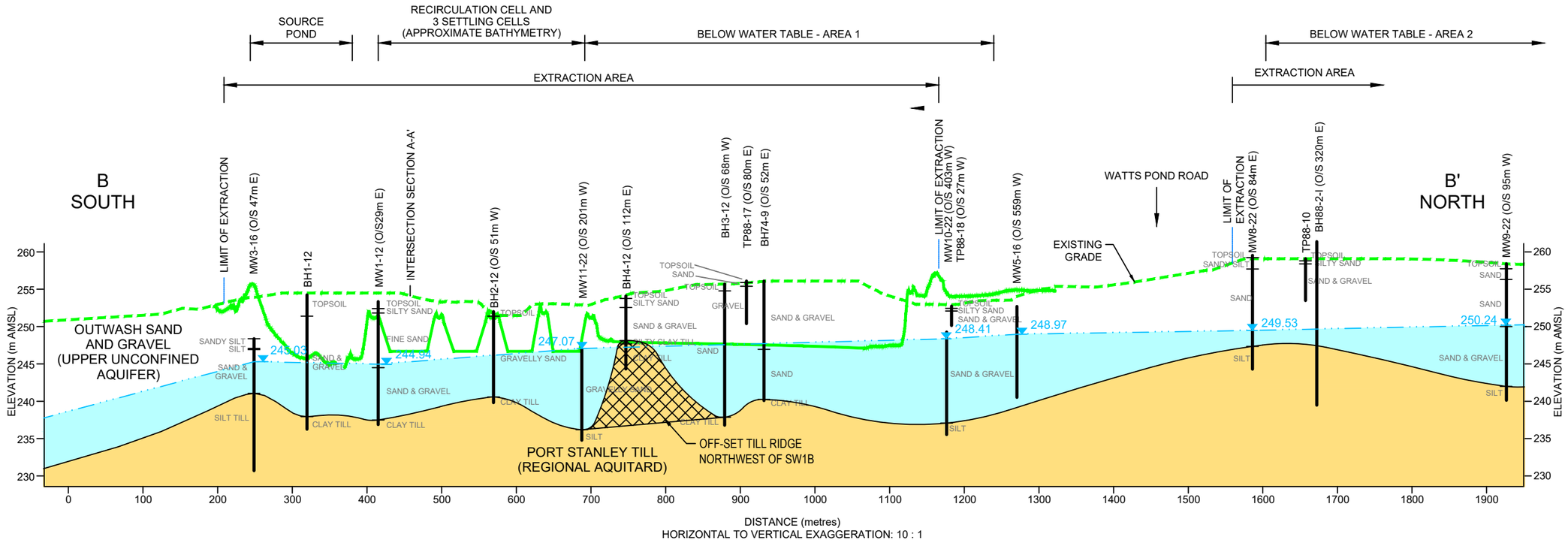
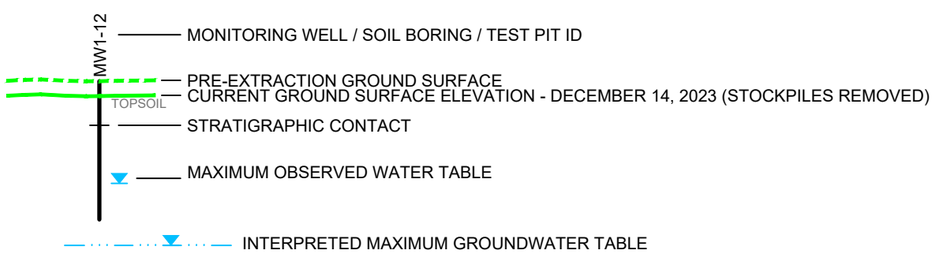


LEGEND



NOTE:
STOCKPILES REMOVED FROM DECEMBER 14, 2023 TOPOGRAPHIC PROFILE BY INTERPOLATION ACROSS THE PILE BASE.

HORIZONTAL
1:6000
0 60 120 180
0 6 12 18
VERTICAL
1:600

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

SITE STRATIGRAPHIC CROSS-SECTION B-B'

Project No. **78410**
Date **November 2024**

FIGURE 2.3

Filename: \\ghdnet\ghd\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D102_WA-016.dwg
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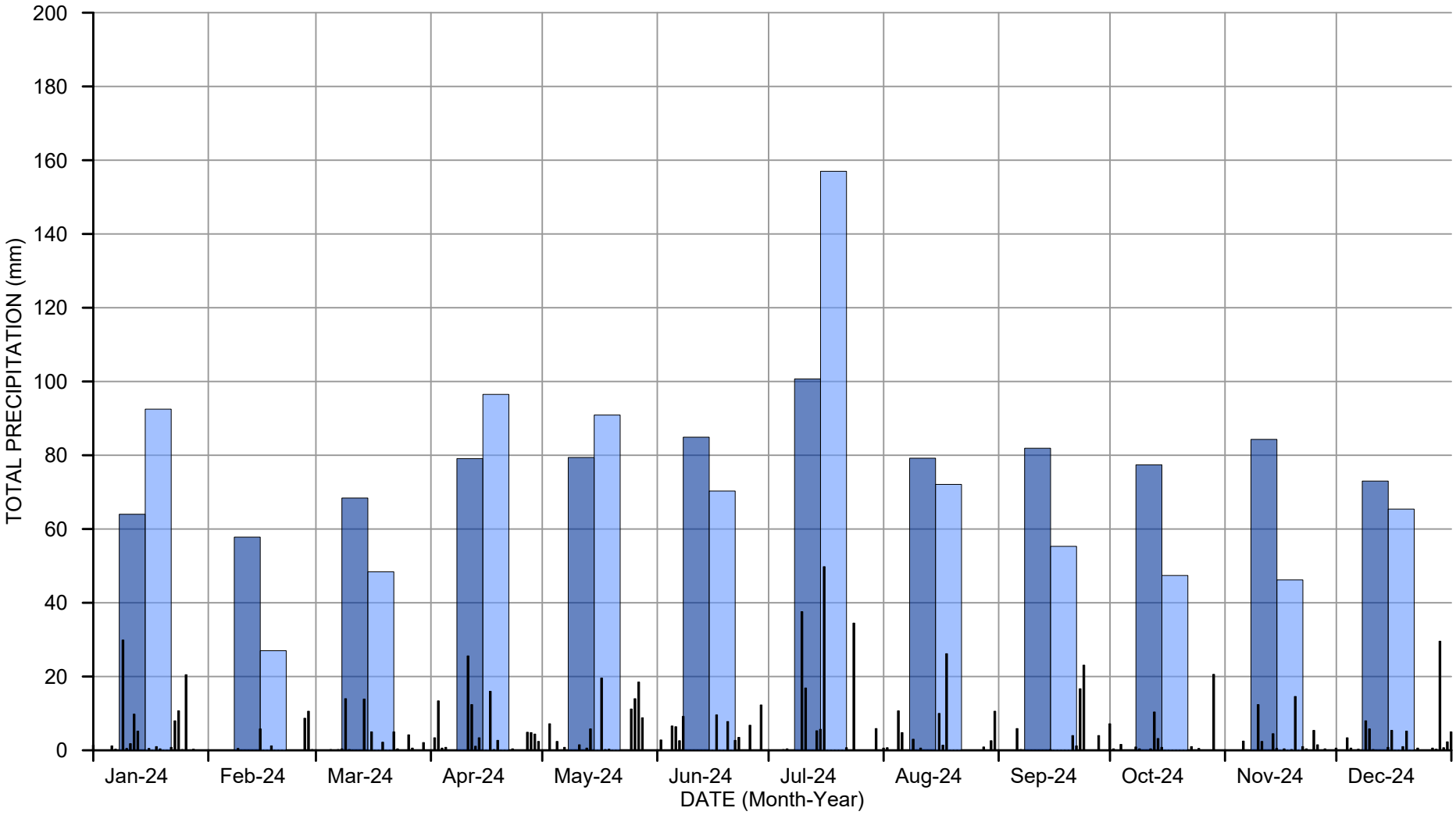
Source: Reproduced and modified from County of Brant Municipal Groundwater Study, Lotowatr, June 8, 2005 (Figure 5.4.2)



NOTE:
(1) Hamilton Airport data obtained from Environment Canada Station #6153193.

LEGEND
- Climate Normals (1981-2010, Hamilton Airport)
- Monthly Precipitation
- Daily Precipitation

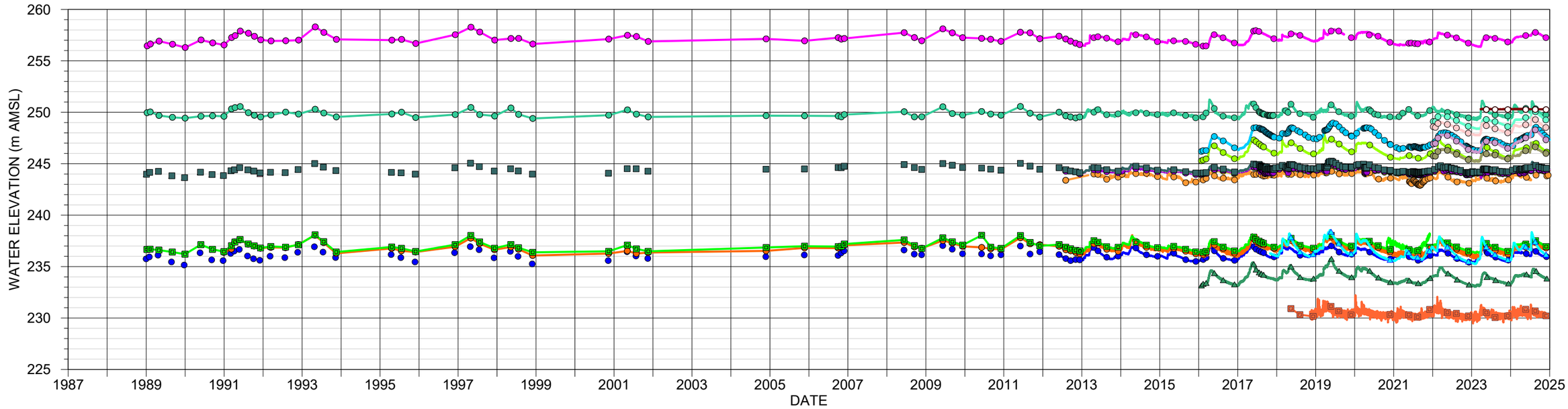
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

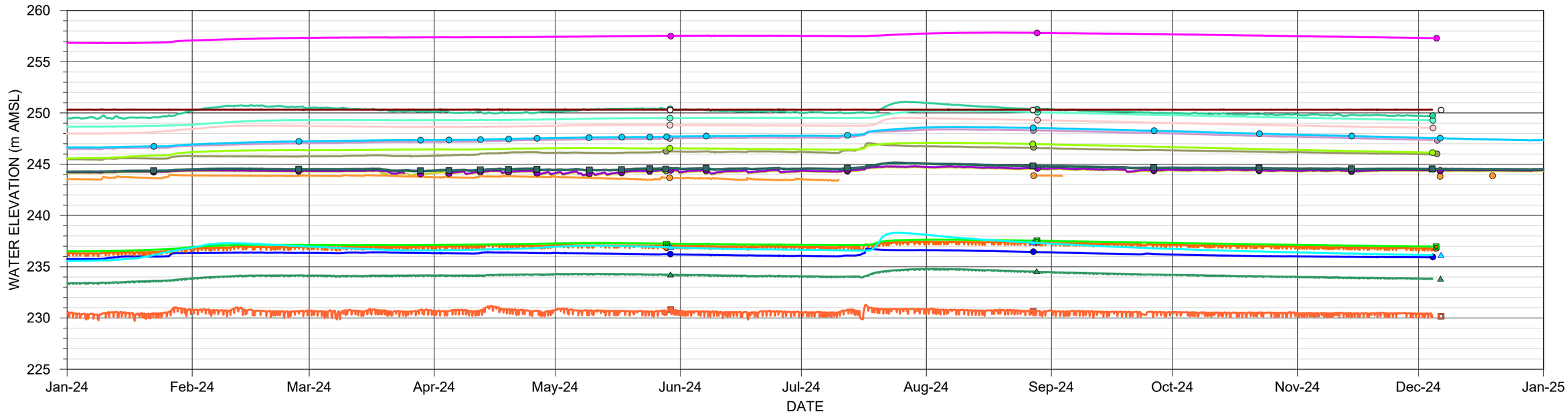
2024 PRECIPITATION SUMMARY

Project No. **078410-20**
Date **February 14, 2025**

FIGURE 4.1

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.1 - Precipitation.grf





Legend

BH88-1-I, BH88-2-I, BH88-4-I, BH88-4A-II, BH88-5-I, BH88-5-II, BH88-6-I, MW1-12, MW2-12, MW3-16, MW4-16, MW5-16, MW6-16, MW8-22, MW9-22, MW10-22, MW11-22, MW12-23, OW1-96C, OW1-96B

GHD

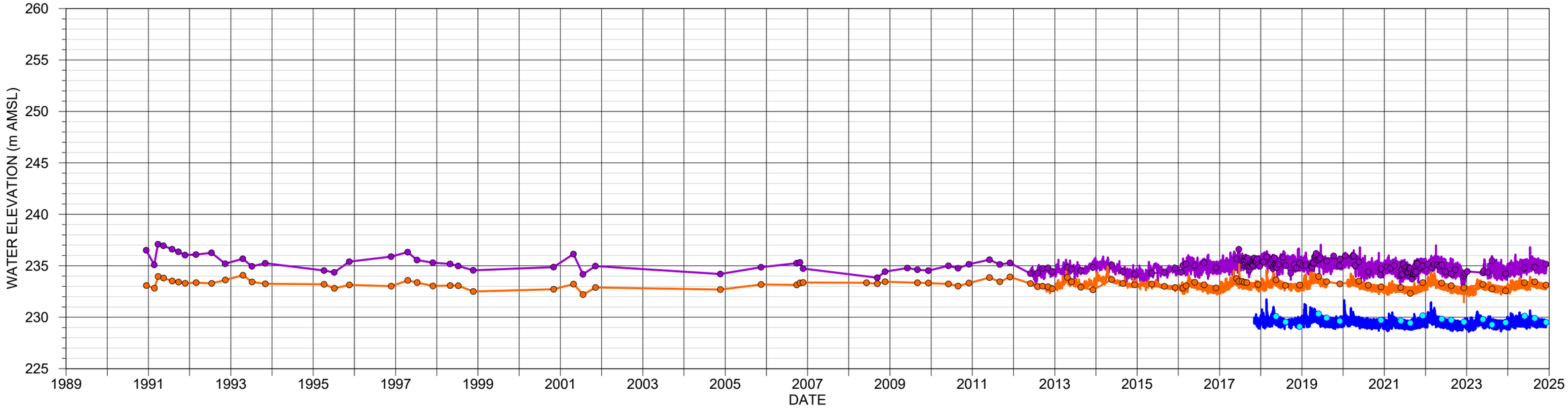
DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

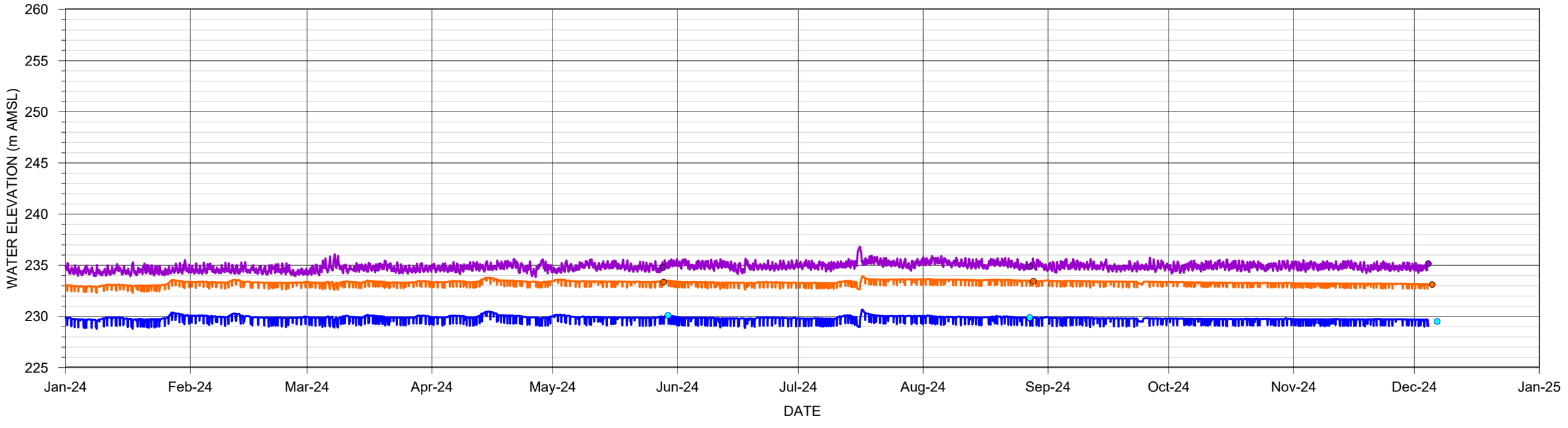
GROUNDWATER HYDROGRAPH
OVERBURDEN

Project No. 078410-20
Date February 14, 2025

FIGURE 4.2

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.2-Groundwater Hydrograph - Overburden.grf





Legend

BH88-4A-I BH88-5A-I OW1-96A

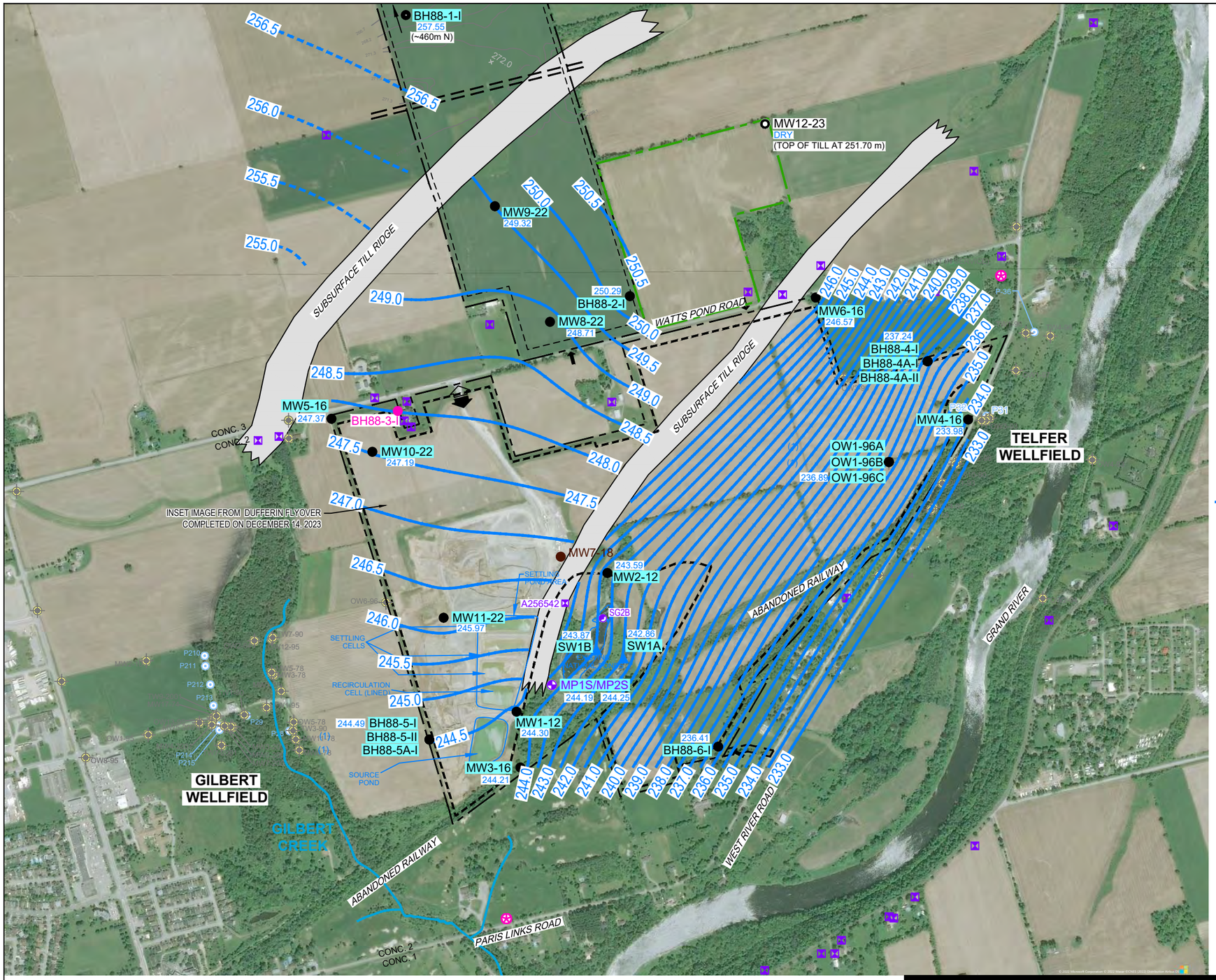
DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

GROUNDWATER HYDROGRAPH
BEDROCK

Project No. 078410-20
Date February 14, 2025

FIGURE 4.3

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.3-Groundwater Hydrograph - Bedrock.grf



LEGEND

- GROUND SURFACE ELEVATION CONTOUR (mAMSL) - DECEMBER 14, 2023
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EASEMENT
- SITE ENTRANCE/EXIT
- EXISTING FIELD ENTRANCE
- SPOT ELEVATION
- MW1-12 — MONITORING WELL INCLUDED IN THE GROUNDWATER MONITORING NETWORK
- SW1A — SURFACE WATER LOCATION INCLUDED IN THE SURFACE WATER MONITORING NETWORK
- MP1S — PIEZOMETER (NESTED AS SHALLOW AND DEEP) INCLUDED IN THE MONITORING NETWORK
- BH88-3-I — MONITORING WELL WAS DESTROYED
- MW7-18 — MONITORING WELL INSTALLED IN 2018
- SG2B — STAFF GAUGE
- 233.64 — GROUNDWATER ELEVATION (MAY 28/29, 2024) (mAMSL)
- 235 — GROUNDWATER CONTOUR (mAMSL)
- (1) — GROUNDWATER ELEVATION NOT INCLUDED IN CONTOURS

WATER WELL RECORD (WWR) PRIMARY USE

- DOMESTIC WATER SUPPLY WELL (APPROXIMATE LOCATION)
- MUNICIPAL MONITORING WELL
- PUBLIC WATER SUPPLY WELL
- IRRIGATION WELL (APPROXIMATE LOCATION)
- LIVESTOCK WELL (APPROXIMATE LOCATION)

0 125 250 375m

1:12500

Coordinate System:
UTM ZONE 17 NAD83
METRES

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

SITE GROUNDWATER ELEVATION CONTOURS MAY 2024

Project No. **78410**
Date **November 2024**

FIGURE 4.4

Filename: \\ghdnetghd\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D104_WA-016.dwg
Plot Date: 28 November 2024 11:35 AM

Source: J.H. Cohoon Engineering Limited, Job 9738, Existing Features, 2 of 5 Microsoft Product Screen shot(s), Reprinted with permission from Microsoft Corporation, Accessed 2022

BH88-1-I
257.55
(~460m N)
MW12-23
MW9-22
249.78 (1)
MW8-22
249.11 (1)
BH88-2-I
251.85
MW6-16
248.23
BH88-4-I
BH88-4A-I
BH88-4A-II
237.86
MW4-16
235.77
OW1-96A
OW1-96B
OW1-96C
238.54
MW5-16
248.97
BH88-3-I
MW10-22
247.88 (1)
MW7-18
247.62
MW2-12
244.26
MW11-22
246.44 (1)
A256542
SG2B
244.46
SW1B
243.75
SW1A
MP1S/MP2S
245.05
244.11
MW1-12
245.03
245.26
BH88-5-I
BH88-5-II
BH88-5A-I
MW3-16
244.94
237.16
BH88-6-I
SUBSURFACE TILL RIDGE
SUBSURFACE TILL RIDGE
WATTS POND ROAD
ABANDONED RAILWAY
ABANDONED RAILWAY
WEST RIVER ROAD
PARIS LINKS ROAD
GRAND RIVER
CONC. 3
CONC. 2
CONC. 2
CONC. 1
SETTLING POND AREA
SETTLING CELLS
RECIRCULATION CELL (LINED)
EXISTING NATURAL PONDS
SOURCE POND
GILBERT CREEK
GILBERT WELLFIELD
TELFER WELLFIELD
INSET IMAGE FROM DUFFERIN FLYOVER COMPLETED ON DECEMBER 14, 2023
256.5
256.5
256.0
256.0
255.5
255.0
251.0
251.5
249.5
251.0
250.5
250.0
249.5
249.0
248.5
248.0
247.5
247.0
246.5
246.0
245.5
244.5
247.5
246.5
245.5
244.5
243.5
242.5
241.5
240.5
239.5
238.5
237.5
238.0
P29
P28
P210
P211
P212
P213
P214
P215
P31
P30
OW8-95
OW7-90
OW12-95
MW1-78
OW1-95
OW2-20
MW1-95
OW6-95
(1)
(1)
3

LEGEND

- GROUND SURFACE ELEVATION CONTOUR (mAMSL) - DECEMBER 14, 2023
- LICENSED BOUNDARY
- LIMIT OF EXTRACTION
- EASEMENT
- SITE ENTRANCE/EXIT
- EXISTING FIELD ENTRANCE
- SPOT ELEVATION
- MW1-12 MONITORING WELL INCLUDED IN THE GROUNDWATER MONITORING NETWORK
- SW1A SURFACE WATER LOCATION INCLUDED IN THE SURFACE WATER MONITORING NETWORK
- MP1S PIEZOMETER (NESTED AS SHALLOW AND DEEP) INCLUDED IN THE MONITORING NETWORK
- BH88-3-I MONITORING WELL WAS DESTROYED
- MW7-18 MONITORING WELL INSTALLED IN 2018
- SG2B STAFF GAUGE
- 233.64 MAXIMUM OBSERVED GROUNDWATER ELEVATION (mAMSL)
- 235 MAXIMUM WATER TABLE CONTOUR (mAMSL)

WATER WELL RECORD (WWR) PRIMARY USE

- DOMESTIC WATER SUPPLY WELL (APPROXIMATE LOCATION)
- MUNICIPAL MONITORING WELL
- PUBLIC WATER SUPPLY WELL
- IRRIGATION WELL (APPROXIMATE LOCATION)
- LIVESTOCK WELL (APPROXIMATE LOCATION)

0 125 250 375m

1:12500

Coordinate System:
UTM ZONE 17 NAD83
METRES

N

GHD

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

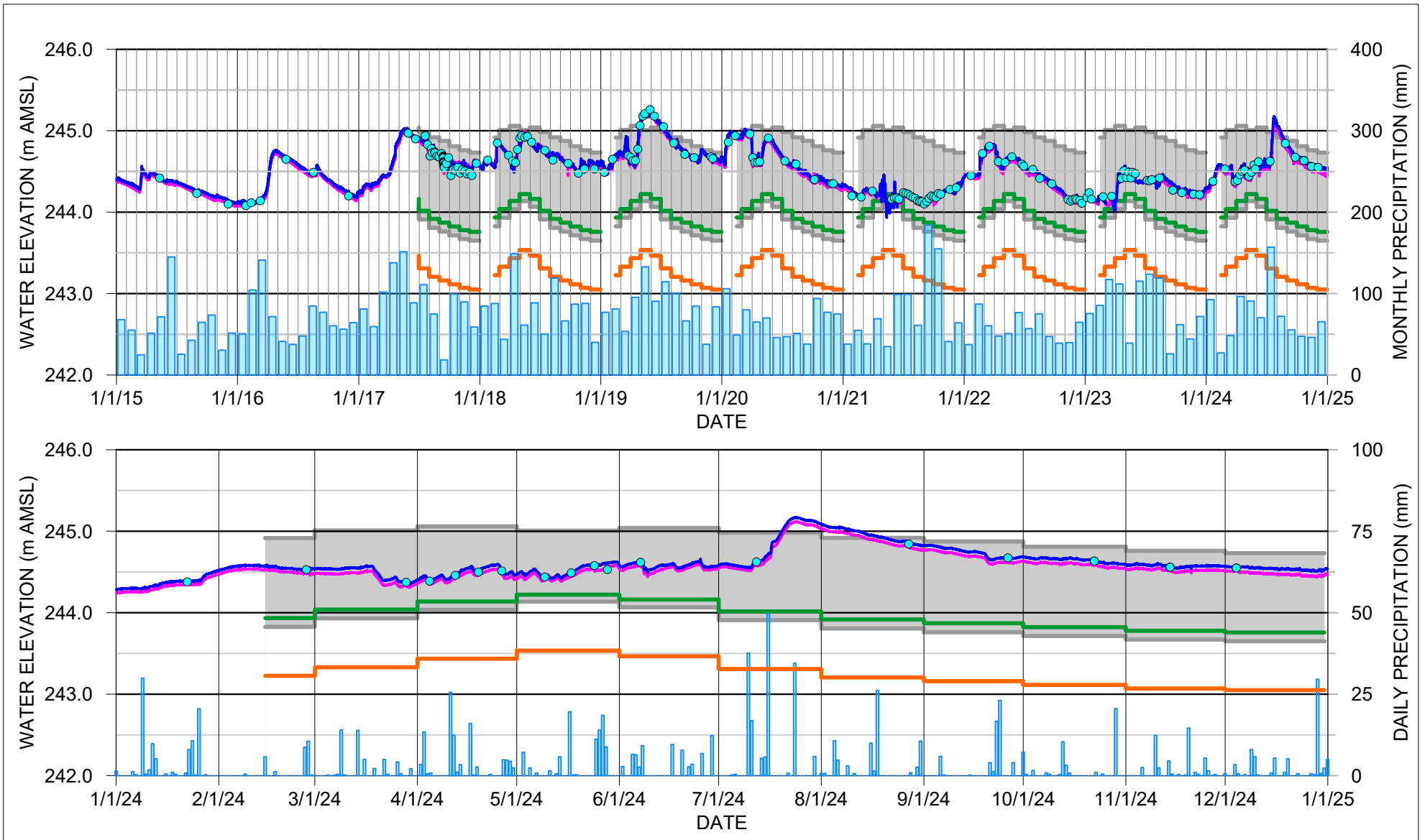
SITE GROUNDWATER ELEVATION HISTORICAL MAXIMUM ELEVATIONS

Project No. **78410**
Date **January 2025**

FIGURE 4.5

Filename: \\ghdnet\ghd\CA\Waterloo\Projects\662\078410\Digital_Design\ACAD\Figures\RPT016\078410-GHD-00-00-RPT-EN-D105_WA-016.dwg
Plot Date: 09 January 2025 9:35 AM

Source: J.H. Cohoon Engineering Limited, Job 9738, Existing Features, 2 of 5 Microsoft Product Screen shot(s), Reprinted with permission from Microsoft Corporation, Accessed 2022



LEGEND

- BH88-5-I
- Early-Warning Threshold Level
- Groundwater Trigger Level
- Historical Range (per TMCP)
- Precipitation Total
- BH88-5-II

GHD

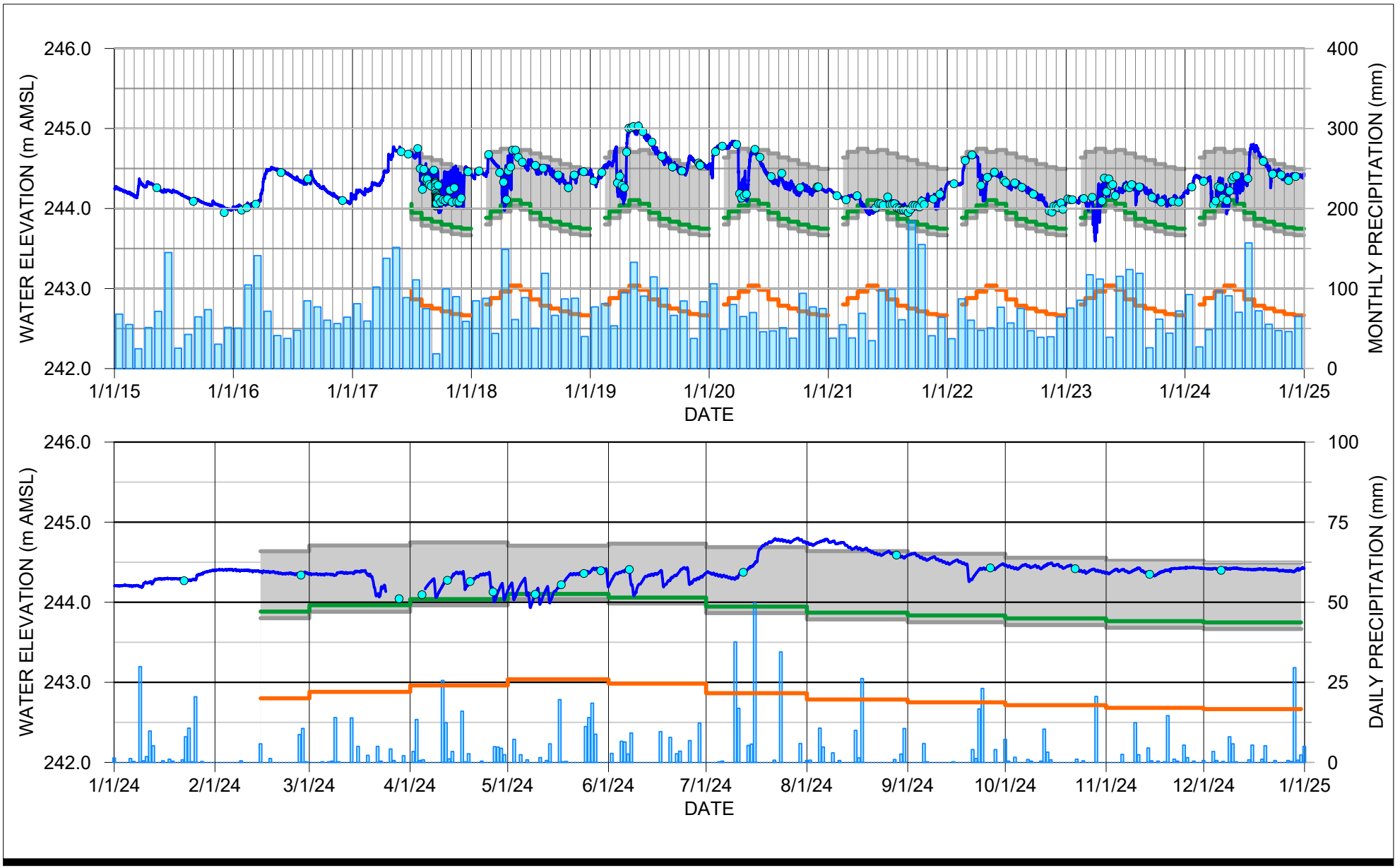
DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

TRIGGER MECHANISM SUMMARY
BH88-5-I

Project No. **078410-20**
Date **February 14, 2025**

FIGURE 4.6a

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.6a - BH88-5-I Trigger Mechanism Summary.grf



LEGEND

- MW1-12
- Early-Warning Threshold Level
- Groundwater Trigger Level
- Historical Range (per TMCP)
- Precipitation Total

GHD

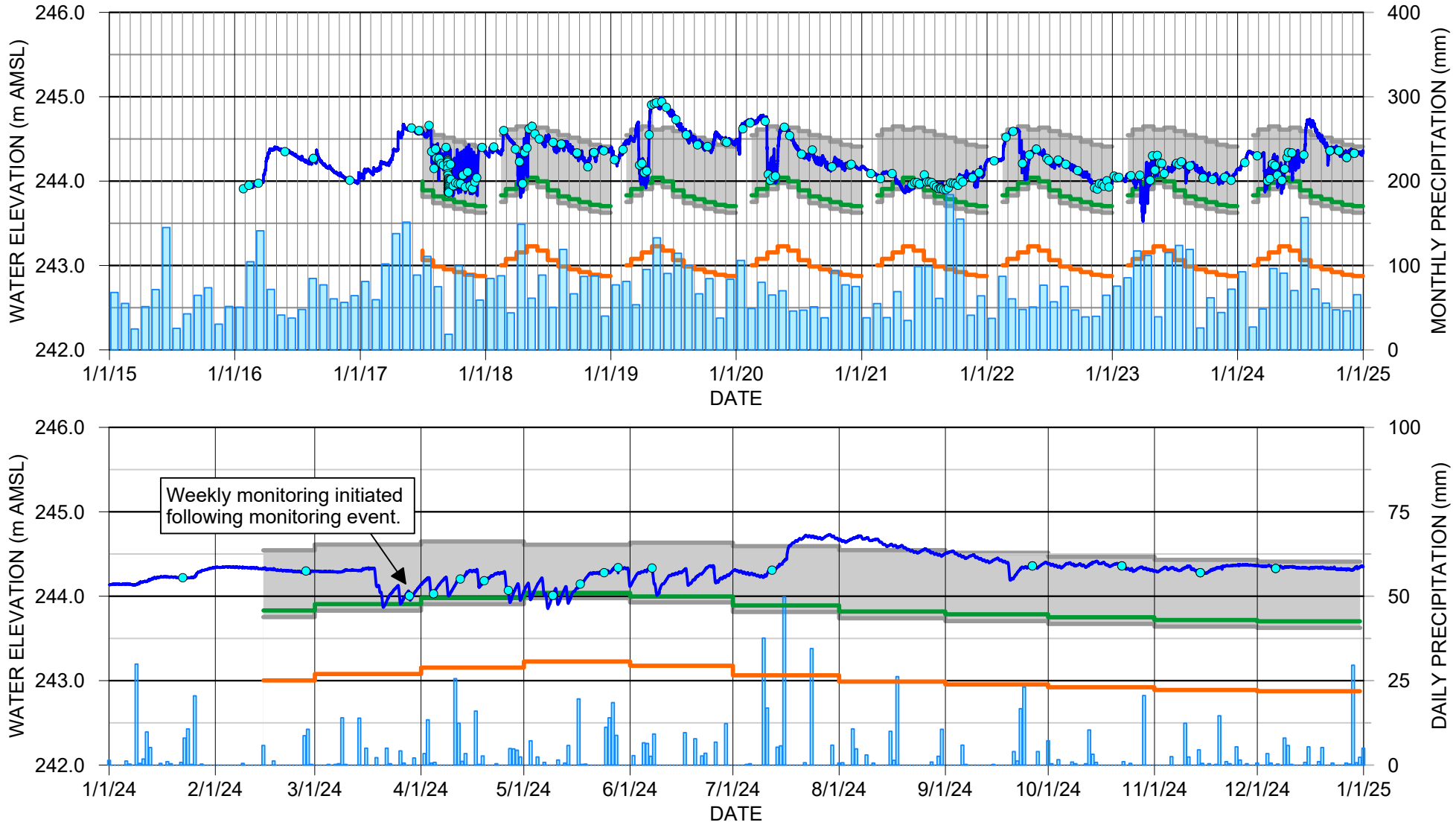
DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

TRIGGER MECHANISM SUMMARY
MW1-12

Project No. **078410-20**
Date **February 14, 2025**

FIGURE 4.6b

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.6b - MW1-12 Trigger Mechanism Summary.grf



Note: MW3-16 installed in January 2016

LEGEND

- MW3-16
- Early-Warning Threshold Level
- Groundwater Trigger Level
- Historical Range (per TMCP)
- Precipitation Total

GHD

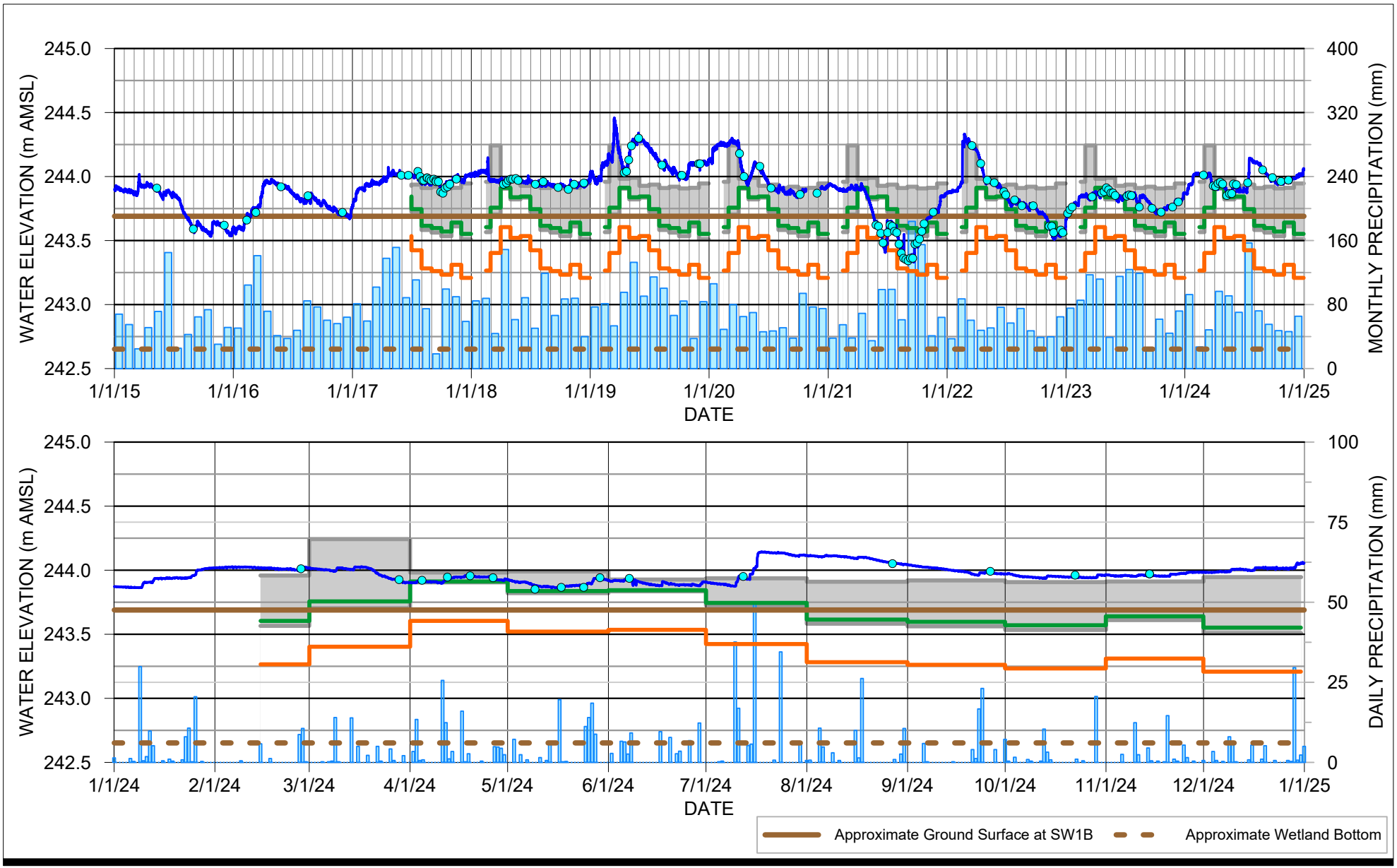
DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

TRIGGER MECHANISM SUMMARY
MW3-16

Project No. **078410-20**
Date **February 14, 2025**

FIGURE 4.6c

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.6c - MW3-16 Trigger Mechanism Summary.grf



LEGEND

- SW1B
- Early-Warning Threshold Level
- Surface Water Trigger Level
- Historical Range (per TMCP)
- Precipitation Total

DUFFERIN AGGREGATES PARIS PIT
COUNTY OF BRANT, ONTARIO
2024 COMBINED ANNUAL MONITORING REPORT

TRIGGER MECHANISM SUMMARY
SW1B

Project No. **078410-20**
Date **February 14, 2025**

FIGURE 4.6d

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\Figure 4.6d - SW1B Trigger Mechanism Summary.grf

Appendices

Appendix A

Amended PTTW No. 7481 C4BQTA (August 13, 2021)

AMENDED PERMIT TO TAKE WATER
Ground Water
NUMBER 7481-C4BQTA

Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

CRH Canada Group Inc.
Floor 4 - 2300 Steeles Ave W
Concord, Ontario
L4K 5X6

For the water taking from: Source Water Pond located at 716 Watts Pond Road

Located at: Lot 27, Concession 2, Geographic Township of Dumfries
Brant

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

(a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.

(b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.

(c) "Ministry" means Ontario Ministry of the Environment, Conservation and Parks.

(d) "District Office" means the Guelph District Office.

(e) "Permit" means this Permit to Take Water No. 7481-C4BQTA including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.

(f) "Permit Holder" means CRH Canada Group Inc..

(g) "OWRA " means the *Ontario Water Resources Act,* R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated January 6, 2021 and signed by Kevin Mitchell, and all Schedules included in this Permit.

1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.

1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.

1.4 This Permit is not transferable to another person.

1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.

1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.

1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act,* S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and

the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 **Expiry**

This Permit expires on **October 29, 2025**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Source Water Pond	Pond Dugout	Aggregate Washing	Industrial	10,000	12	7,200,000	230	17 550738 4784696
						Total Taking:	7,200,000		

3.3 The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A.

3.4 The "Taking Specific Purpose" identified in Table A, includes the water to be used for dust suppression, watering trees, shrubs and native plants planted within the last 18 months..

3.5 Notwithstanding Table A, the rate of taking from the Source Pond shall only be at the rate and daily maximum listed in Table A for a total of 30 days per annum for the purpose of refilling the Settling and Recirculation Ponds after removal of accumulated sediment from these ponds or repairing the liner in the Recirculation Pond. For the remaining 200 days, the water taking shall be at a rate of no more than 1,400 L/min for 12 hours per day.

i. Water may be taken during a 12 hour period between a Sunday and the following Monday (e.g. Sunday 7:00pm and Monday 7:00am) at the rate of 10,000 L/min. This water taking shall be measured and shall be recorded as being taken on the Sunday. Water may be taken on the Monday at a rate of 1,400 L/min as per Condition 3.4 above.

ii. In the event of a long holiday weekend, water may be taken during a 12 hour period between the holiday Monday and Tuesday (e.g. holiday Monday 7:00pm and Tuesday 7:00am). This water taking shall be measured and shall be recorded as being taken on the holiday Monday. Water may be taken on the Tuesday at a rate of 1,400 L/min as per Condition 3.4 above.

3.6 Water taking under the authorization of this permit shall only occur between February 15 and December 31 of each year during the validity of this Permit.

3.7 In the event the Permit Holder pumps water from the Source Pond at lower than the maximum permitted rates, the saved water can be pumped in other days exceeding the total number of 230 days provided the additional days shall be within the permitted window of February 15 to December 31 inclusive, and the rate of taking shall not exceed 1,400 litres per minute and 1,008,000 litres per day. The Cumulative Volume pumped in all days from February 15 to December 31 shall not exceed 417,600,000 litres annually.

4. Monitoring

4.1 Under section 9 of O. Reg. 387/04 as amended from time to time, the Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit, or as otherwise accepted by the Director.

The Permit Holder shall maintain a separate record of the water taking used for both dust suppression and vegetation watering.

The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31st in every year, the records required by this condition to the ministry's Water Taking Reporting System. These records shall be included in the Combined Annual Monitoring Report described in Condition 4.4.

4.2 a) The Permit Holder shall monitor groundwater levels at the following monitoring wells;

i) MW1-12 or replacement well in the same general area,
ii) MW3-16 or replacement well located between the Source Pond and the south property boundary, and
iii) Wells BH88-5 and BH88-5-II or replacement wells in the same general area.

b) The three (3) groundwater monitoring wells listed in Condition 4.2 a) shall be located at three (3) different distances from the edge of the Source Pond. In addition, these three (3) wells shall be screened within the upper Sand and Gravel Aquifer. These three (3) wells may be used for other monitoring purposes.

c) The Permit Holder shall ensure that groundwater levels are collected at the three groundwater monitoring wells described in Condition 4.2 a) between February 15 and December 31 of every for which the Permit is valid.Water levels shall be collected at a minimum of hourly intervals using a datalogger.

d) The Permit Holder shall ensure that the data loggers described in Condition 4.2 d) operate without interruption. Repairs or replacement of the dataloggers shall be completed within a reasonable period once a malfunction has been identified.

4.3 The Permit Holder shall establish the following surface water monitoring program seasonally during non-freezing conditions:

a) continuous surface water level monitoring at SW1A, SW1B and MP1S and MP2S.

b) calculation of vertical hydraulic gradient at the multi-level piezometer; and
c) continuous water level monitoring shall be logged at a minimum of 4 hour intervals.

4.4 The Permit Holder shall ensure that groundwater levels, surface water levels, and any other data collected from any on site monitoring wells are included in a Combined Annual Monitoring Report. Copies of this Combined Annual Monitoring Report shall be submitted to both the Ministry of the Environment, Conservation and Parks, Section 34.1 Director and the County of Brant by March 31st of each year following the issuance of the Permit to Take Water.

The Combined Annual Monitoring Report shall include a comparison of the annual groundwater elevation contours with the simulated water level changes outlined in the OWRA s34 Permit-To-Take-Water Application and Supporting Hydrologic and Hydrogeologic Study, Dufferin Paris Pit, County of Brant, Ontario, prepared by Conestoga-Rovers & Associates, dated March 2013.

4.5 The Permit Holder shall make the report required by Condition 4.4 available to the Community Advisory Panel, and publicly by posting it on the Company's website at the time specified in Condition 4.4.

4.6 All Permit renewals and amendments other than administrative amendments shall be accompanied by a hydrogeological assessment report which presents and discusses the data collected in Conditions 4.1, 4.2 and 4.3. This report shall be signed and stamped by a qualified person.

4.7 The Permit Holder shall continue to implement the Trigger Mechanism and Contingency Plan for both groundwater and surface water. This Plan shall be reviewed and updated with approval by the ministry as necessary at minimum every two years. This review can be completed as part of the Combined Annual Monitoring report referenced in Condition 4.4.

5. Impacts of the Water Taking

5.1 Notification
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Groundwater Takings
If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate

such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act* , Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.

2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.

3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 101 of the Ontario Water Resources Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

a. The name of the appellant;
b. The address of the appellant;
c. The Permit to Take Water number;
d. The date of the Permit to Take Water;
e. The name of the Director;
f. The municipality within which the works are located;

This notice must be served upon:

The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 326-5370
Email:
ERTTribunalsecretary@ontario.ca

AND

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7J 2J3

AND

The Director, Section 34.1,
Ministry of the Environment,
Conservation and Parks
Floor 1, 135 St Clair Ave W
Toronto, ON
M4V 1P5

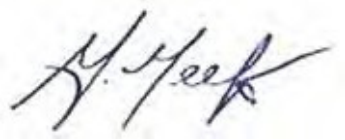
Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by Telephone at	by Fax at	by e-mail at
(416) 212-6349	(416) 326-5370	www.ert.gov.on.ca
Toll Free 1(866) 448-2248	Toll Free 1(844) 213-3474	

This instrument is subject to Section 38 of the ***Environmental Bill of Rights*** *that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.*

This Permit cancels and replaces Permit Number 7115-9VVLJW, issued on 2015/10/29.

Dated at Toronto this 13th day of August, 2021.



Gregory Meek
Director, Section 34.1
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 7481-C4BQTA, dated August 13, 2021.

1. Application for Amendment to PTTW received by the ministry on January 12, 2021 from CRH Canada Group Inc. Mailing Address: Floor 4 - 2300 Steeles Ave W, Concord, Ontario, Canada, L4K 5X6 for Dufferin Aggregates Paris Pit at Lot 27, Concession 2, 716 Watts Pond Road, geographic township: DUMFRIES, County of Brant, signed by Kevin Mitchell, January 6, 2021. GHD. 2021.

2. Category 3 Permit-To-Take Water Amendment Application Supporting Hydrologic and Hydrogeologic Study, Dufferin Aggregates Paris Pit, signed and stamped by Gary I. Lagos, P. Geo of GHD, January 6, 2021. Dufferin. 2021.

3. Paris Pit Permit to Take Water Amendment Application, Reference No. 8637-BXAR22, letter to Ministry of Environment, Conservation and Parks from Kevin Mitchell of Dufferin Aggregates, May 6, 2021.

4. Trigger Mechanism and Contingency Plan Condition 4.7 – PTTW No. 5826-ALCNNN Dufferin Aggregates Paris Pit, County of Brant, Ontario; for CRH Canada Group Inc. Signed by Michael R. Tomka, P. Eng. and signed and stamped by Gary I. Lagos, P. Geo. of GHD, July 19, 2017, Reference No. 078410.

Appendix B

Amended Environmental Compliance Approval (ECA) (March 14, 2022)

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 3994-CCDR8L
Issue Date: March 14, 2022

CRH Canada Group Inc.
2300 Steeles Avenue West, 4th Floor
Concord, Ontario
L4K 5X6

Site Location: Dufferin Aggregates - Paris Pit
708 Watts Pond Road
South Dumfries, Ontario
N3L 3E2

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

sewage works for the collection, transmission, treatment and reuse of wash water effluent from an aggregate washing operation, consisting of the following:

- one (1) ***settling pond*** (comprised of the settling cell(s) and the recirculation cell) constructed above the ground-water table receiving wash water from the Processing Wash Plant and make-up water from the source water pond, and returning settled water back to the Processing Wash Plant.

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works.

all in accordance with the supporting documents listed in Schedule A.

For the purpose of this environmental compliance approval, the following definitions apply:

"Application" means the application for an environmental compliance approval submitted to the Ministry for approval by or on behalf of the Owner and dated February 10, 2022.

"Approval" means this environmental compliance approval, any schedules attached to it, and the Application;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part

II.1 of the EPA;

"District Manager" means the District Manager of the Guelph District Office of the Ministry;

"EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Owner" means CRH Canada Group Inc., and includes its successors and assignees;

"OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended; and

"Works" means the sewage works described in the Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

1.1 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

1.2 Except as otherwise provided by these terms and conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with this Approval.

1.3 Where there is a conflict between a provision of this environmental compliance approval and any document submitted by the Owner, the conditions in this environmental compliance approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Owner, the Application shall take precedence unless it is clear that the purpose of the document was to amend the Application

1.4 Where there is a conflict between the documents listed in the Schedule A, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

1.5 The terms and conditions of this Approval are severable. If any term and condition of this environmental compliance approval, or the application of any requirement of this environmental compliance approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. CHANGE OF OWNER

2.1 The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:

(a) change of address of Owner or operating authority;

(b) change of Owner or operating authority or both, including address of new Owner or operating authority, or both;

(c) change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* ; and

(d) change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the "Initial Return" or "Notice of Change" filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , shall be included in the notification to the District Manager.

2.2 In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager.

2.3 The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this environmental compliance approval.

3. OPERATIONS MANUAL

3.1 The Owner shall prepare an operations manual prior to the construction, use and operation of the Works that includes, but is not limited to, the following information:

(a) operating procedures for routine operation of the Works;

(b) inspection programs, including frequency of inspection, for the Works and the methods or tests to be employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;

(d) contingency plans and procedures for dealing with a potential spill, bypasses or any other abnormal situations, including notifying the District Manager of the situation; and

(e) procedures for receiving and responding to public complaints.

3.2 The Owner shall review and update the operations manual from time to time and shall retain a copy of

the updated manual onsite at the Works. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

3.3 The Owner shall make all reasonable efforts to promptly develop a seal at the bottom of the settling pond (comprised of the settling cell(s) and the recirculation cell) and to maintain the integrity of the seal when removing excess sediment from the bottom of the settling pond.

4. MONITORING AND RECORDING

4.1 The Owner shall monitor the groundwater through seven (7) groundwater monitoring wells. Existing wells may be used or new wells installed. The groundwater monitoring wells shall meet the following requirements:

(a) the wells shall be screened within the upper sand and gravel aquifer;

(b) three (3) groundwater monitoring wells shall be located along the northern boundary of the Paris South Pit, one (1) of these wells may be located at the south boundary of the Paris North Pit;

(c) three (3) groundwater monitoring wells shall be located along the southern boundary of the Paris South Pit, with one of these monitoring wells located up gradient of the County of Brant's Telfer wells P31 and P32 and another located immediately down gradient of the source water pond; and

(d) existing groundwater monitoring well MW1-12 or a suitable replacement shall be included in the monitoring.

4.2 Groundwater samples shall be collected from the seven (7) wells required by Condition 4.1 above in **May**, **August** and **December** of each year and sent for analysis in accordance with the table below:

General Chemistry	**Metals** (1)
Conductivity, pH, Hardness (as CaCO3), Total Suspended Solids (TSS), Total Dissolved Solids, Alkalinity - Bicarbonate (as CaCO3), Alkalinity - Carbonate (as CaCO3), Alkalinity - Hydroxide (as CaCO3), Total - Alkalinity (as CaCO3), Nitrate-N, Nitrite-N, Nitrate & Nitrite (as N), Phosphate-P (ortho), Sulphate, Anion Sum, Cation Sum, Cation - Anion Balance, Dissolved Organic Carbon, Total Organic Carbon, Turbidity.	Aluminium, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Chloride, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon (total and dissolved silicon), Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium.

(1) - Groundwater samples are analyzed for dissolved metals. Surface water samples are analyzed for total metals.

4.3 Groundwater samples shall also be analysed for pesticides, including organochlorine pesticides and herbicides, as listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014) (see Schedule A), at detection limits equal to or lower than those listed. In

the event of any analytical issue (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.

4.4 Surface water samples shall be collected from SW1B (previously referred to as SW1; see OWRA S53 Environmental Compliance Approval (ECA) Application and Supporting Information, Dufferin Paris Pit, County of Brant, CRA, 2013, See Schedule A) and analysed as follows:

(a) Samples shall be collected three (3) times per year in **May**, **August** and **December**; and,

(b) Samples shall be analysed for: Field Parameters General Chemistry, Metals and Oil and Grease in accordance with the table below:

Field Parameters	**General Chemistry, Metals** (1) **and Oil & Grease**
pH, temperature, conductivity, dissolved oxygen, turbidity	Total Suspended Solids, hardness, alkalinity, nutrients (total phosphorous, total nitrate, and total nitrite), major ions, metals (unfiltered samples except for aluminium which should be from a clay free sample), Oil and Grease.

(c) Surface water samples shall also be analysed for the suite of pesticides, including organochlorine pesticides and herbicides, listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014) (see Schedule A). For pesticides, the analytical detection limits shall be equal to or lower than those listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014). In the event of any analytical issue (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.

4.5 The Owner shall ensure that no sediment shall be used on Site for rehabilitation without complying with all applicable laws in place at the time of reuse.

4.6 Water samples shall be collected from the recirculation cell as follows:

(a) Water samples shall be collected two (2) times during the calendar year, between **February 15th** and **December 15th**, with the first sample taken prior to the start of aggregate washing season and the second taken at the end.

4.7 The water samples collected from the recirculation cell shall be sent for analysis of general chemistry and metals (as described in condition 4.2) and pesticides, including Glyphosate, Atrazine, Atrazine Desethyl and Aminomethylphosphonic Acid (AMPA). The sampling methods shall have detection limits at levels identical to or lower than those described in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario , CRA (2014) (see Schedule 1). In the event of any analytical issues (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.

4.8 After **three (3) years** of continuous data collection, application may be made to the Director to have the monitoring conditions amended.

5. CONTINGENCY AND POLLUTION PREVENTION PLAN

5.1 The Owner shall prepare a Contingency and Pollution Prevention Plan prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:

(a) the name, job title and address of the Owner, person in charge, management or control of the facility.

(b) the name, job title and 24-hour telephone number of the person(s) responsible for activating the Contingency Plan.

(c) a site plan drawn to scale showing the facility, nearby buildings, streets, maintenance access and the Works (including direction(s) of flow in storm events) and any features which need to be taken into account in terms of potential impacts on access and response (including physical obstructions and location of response and clean-up equipment).

(d) a listing of telephone numbers for: local clean-up company(ies) who may be called upon to assist in responding to spills; local emergency responders including health institution(s); and MOECC Spills Action Centre 1-800-268-6060.

(e) Materials Safety Data Sheets (MSDS) for each hazardous material which may be transported or stored within the area serviced by the Works.

(f) the written procedures by which the Contingency and Pollution Prevention Plan is activated and a description of the Trigger Mechanism(s).

(g) a description of the spill response and pollution prevention training provided to employees assigned to work in the area serviced by the Works, the date(s) on which the training was provided and to whom.

(h) the date on which the Contingency and Pollution Prevention Plan was prepared and subsequently, amended.

(i) any other information the District Manager requires from time to time.

5.2 The Contingency and Pollution Prevention Plan shall be kept in a conspicuous place inside the office building. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

5.3 The Contingency and Pollution Prevention Plan shall be reviewed and amended from time to time, as needed by changes in the operation of the facility.

5.4 A minimum of **thirty (30) days** prior to submission, a copy of the Plan required by Condition 5.1 shall be provided to the County of Brant and posted on the Company's website for a period of thirty (30) days to permit the County of Brant and the public the opportunity to provide comments to the Company.

6. REPORTING

6.1 In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption Of Spills and Reporting of Discharges**)**, the Owner shall, within **fifteen (15) days** of the occurrence of any reportable spill as provided in Part X of the EPA and Ontario Regulation 675/98, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and a schedule of implementation.

6.2 The Owner shall prepare and submit a report to the District Manager on an annual basis within **ninety (90) days** following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data with a comparison to applicable objectives, guidelines, standards, and modelled predictions;

(b) an overview of the success and adequacy of the Works;

(c) a description of any operating problems encountered and corrective actions taken;

(d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works; and

(e) any other information the District Manager requires from time to time.

7. SPECIAL CONDITION – PUBLIC ACCESSIBILITY TO REPORT

The Owner shall, make the report required by Condition 6.3 available to the community advisory panel and publicly by posting it on the Company's website at the time specified in Condition 6.3.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the works in compliance with it.

3. Condition 3 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works.

4. Condition 4 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained and so that the Works do not cause any impairment to the environment. The Condition is also included for the following purposes:

    a) To determine the chemistry of groundwater flowing onto and from that part of the Paris Pit property located south of Watts Pond Road. This area is known as the Paris South Pit.

    b) To determine whether the recirculation and source ponds have an effect on groundwater chemistry.

5. Condition 5 is included to ensure that the Owner will implement the spill contingency plan, such that the environment is protected and deterioration, loss, injury or damage to any person(s) or property is prevented.

6. Condition 6 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

7. Condition 7 is included to provide the general public with the report required in Condition 6.2.

SCHEDULE 'A'

This Schedule contains a list of supporting documentation / information received, reviewed and relied upon in the issuance of this Approval.

1. Environmental Compliance Approval Application for Industrial Sewage Works submitted by J. Richard Murphy, P.Eng., of Conestoga-Rovers & Associates Ltd., and signed by Kevin Mitchell, Manager Environment and Properties, of Holcim (Canada) Inc., dated June 03, 2013; and all supporting documentation and information.

2. CRA. 2013. OWRA S53 Environmental Compliance Approval (ECA) Application and Supporting Information, Dufferin Paris Pit, County of Brant, Ontario, signed and stamped by Michael R. Tomka, P. Eng., signed and stamped by Gary Lagos, P. Geo. and signed by J. Richard Murphy, P. Eng. of Conestoga-Rovers & Associates, June 2013, #078410, Report Number: 3.

3. CRA (2014). Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario; signed and stamped by Gary Lagos, P. Geo. and signed by J. Richard Murphy, P. Eng. of Conestoga-Rovers & Associates, July 2014, #078410, Report Number: 5.

4. CRA. 2015. Re: Modifications to Works for Existing ECA Application Dufferin Paris Pit, Paris, Ontario; letter addressed to Mr. Adedoyin Adenowo, Senior Wastewater Engineer, Ministry of Environment and Climate Change from Michael Tomka, P. Eng. of Conestoga-Rovers & Associates, April 16, 2015, Reference No. 078410.

5. AE. 2010. Alberta Tier 1Soil and Groundwater Remediation Guidelines, Alberta Environment, December 2010, ISBN: 978-0-7785-9015-6 (Printed Edition) ISBN: 978-0-7785-9947-0 (On-line Edition), Retrieved May 6, 2015 from: http://environment.gov.ab.ca/info/library/7751.pdf

6. NSE. 2014. Environmental Quality Standards for Contaminated Sites Rationale and Guidance, Nova Scotia Environment, Environmental Quality Standards for Contaminated Sites, April 2014, retrieved May 6, 2015 from: https://novascotia.ca/nse/contaminatedsites/docs/EQS-Contaminated%20Sites-Rationale-and-Guidance-NSE-2014.pdf

7. Environmental Compliance Approval Application for Industrial Sewage Works submitted by Richard Chatfield, P.Eng., GHD Limited, and signed by Jennah Pettenuzzo, Environmental Coordinator - Dufferin Aggregates,dated February 10, 2022; and all supporting documentation and information.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 0302-ALCK5W issued on April 12, 2017.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act*
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 14th day of March, 2022

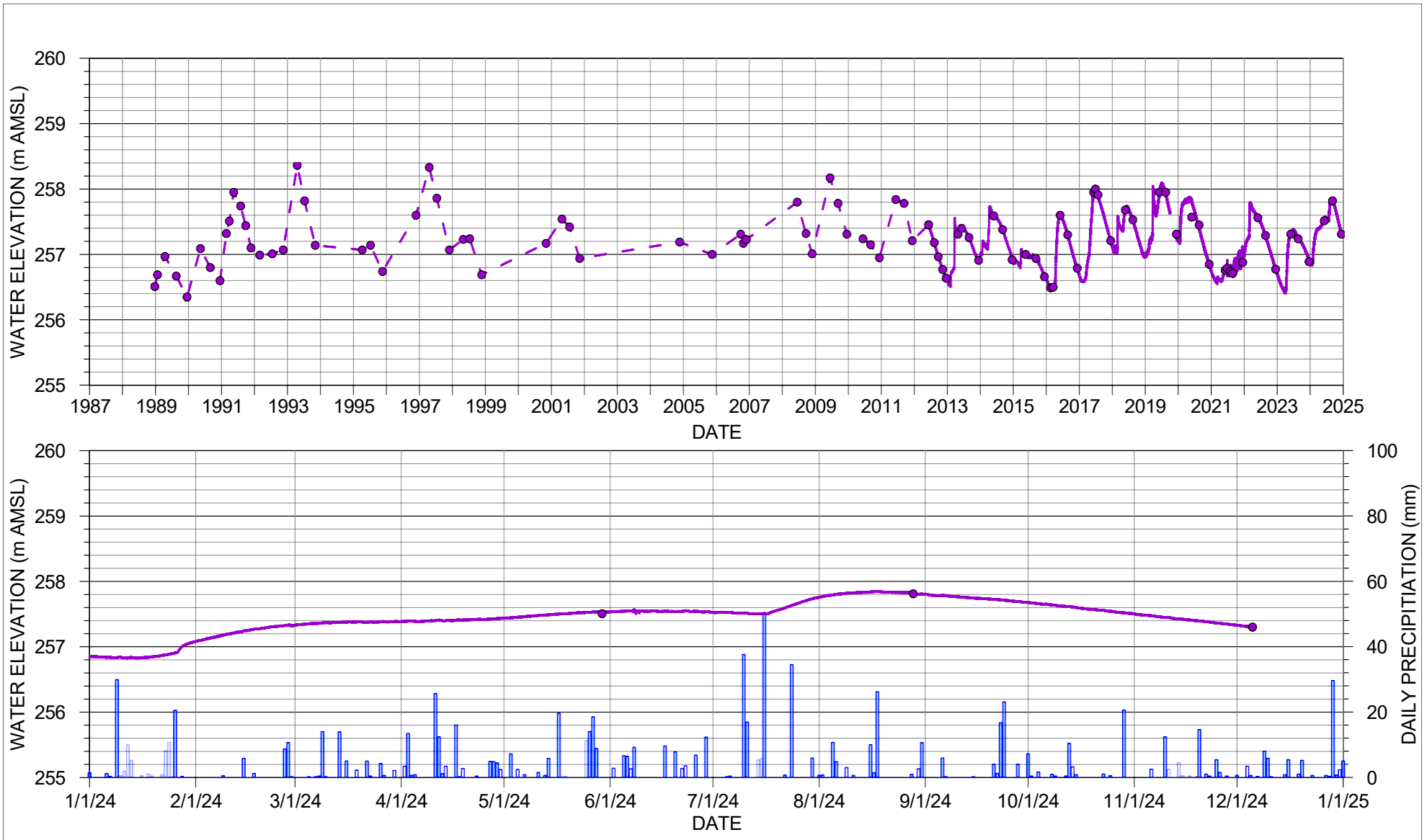
Fariha Pannu.

Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AA/
c: District Manager, MECP Guelph District Office
Richard Chatfield, P.Eng., GHD Limited

Appendix C

Hydrographs - Historical Hydraulic Monitoring Data



LEGEND

BH88-1-I Daily Precipitation

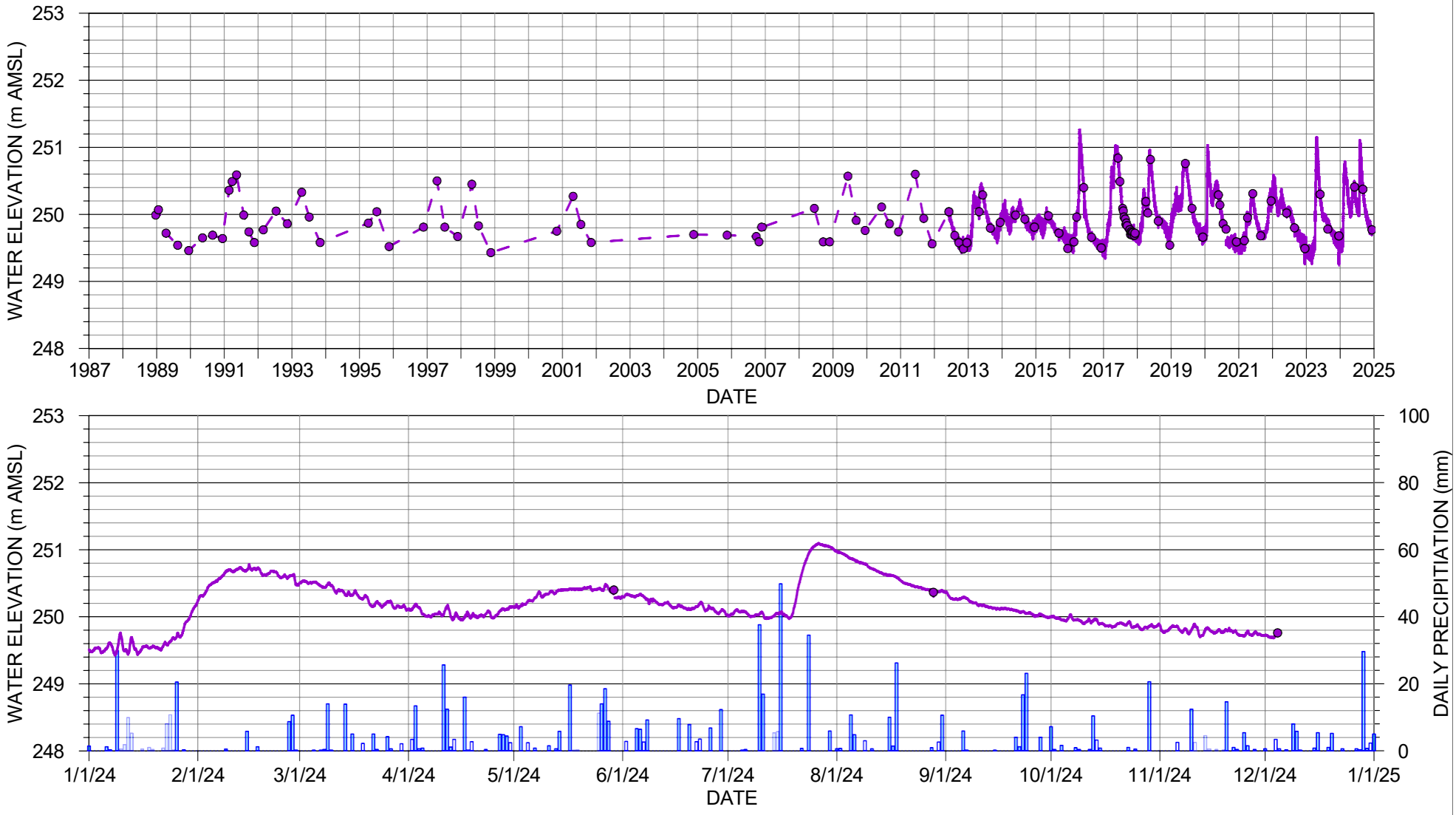
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - BH88-1-I

FIGURE C.1

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\BH88-1-I.grf



LEGEND

BH88-2-I Daily Precipitation

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - BH88-2-I

FIGURE C.2

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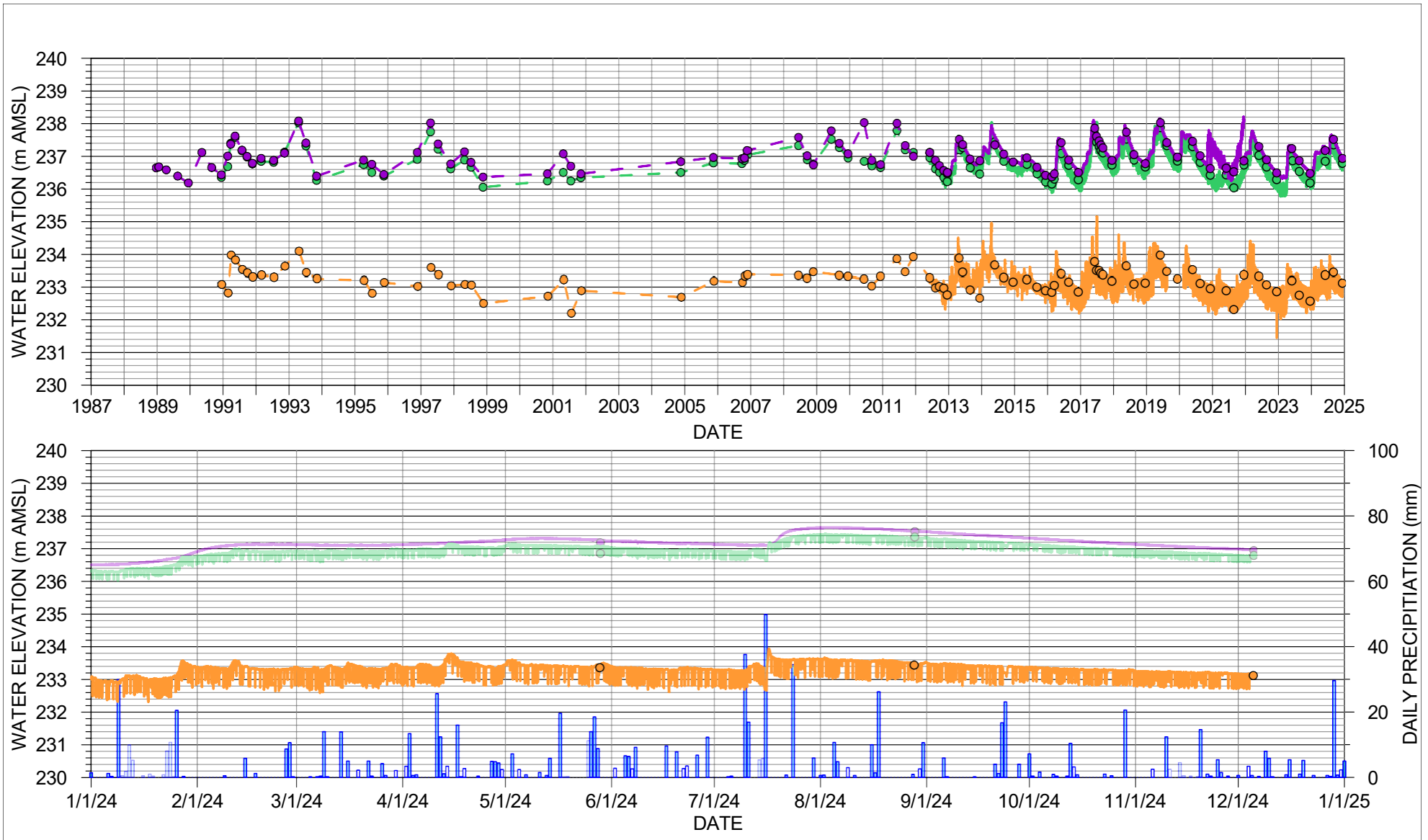


LEGEND

BH88-4-I
BH88-4A-II
BH88-4A-I
Daily Precipitation

GHD

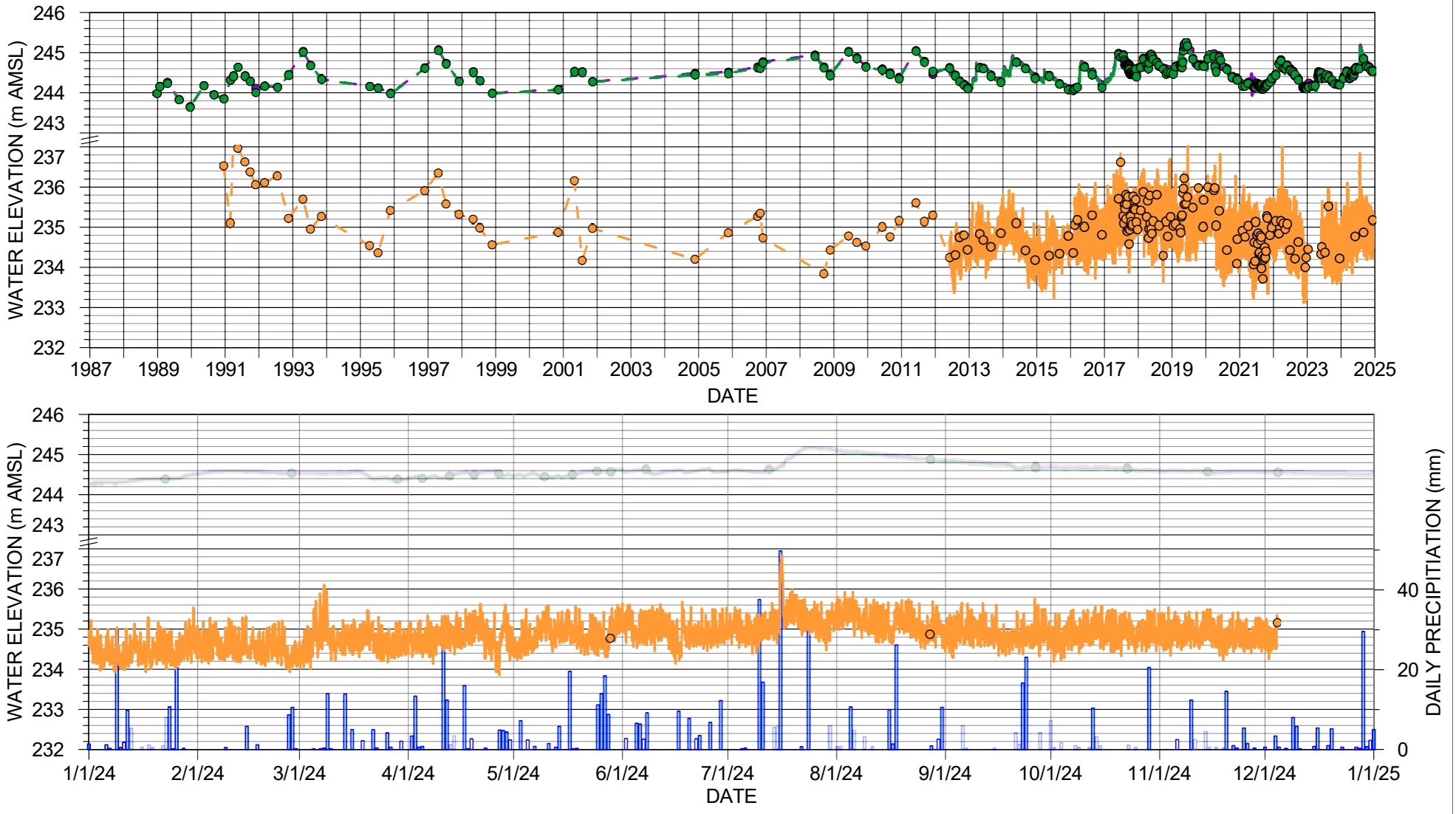
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - BH88-4 NEST

FIGURE C.3

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\BH88-4 Nest.grf



LEGEND

BH88-5-I

BH88-5A-I

BH88-5-II

Daily Precipitation

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - BH88-5 NEST

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.4

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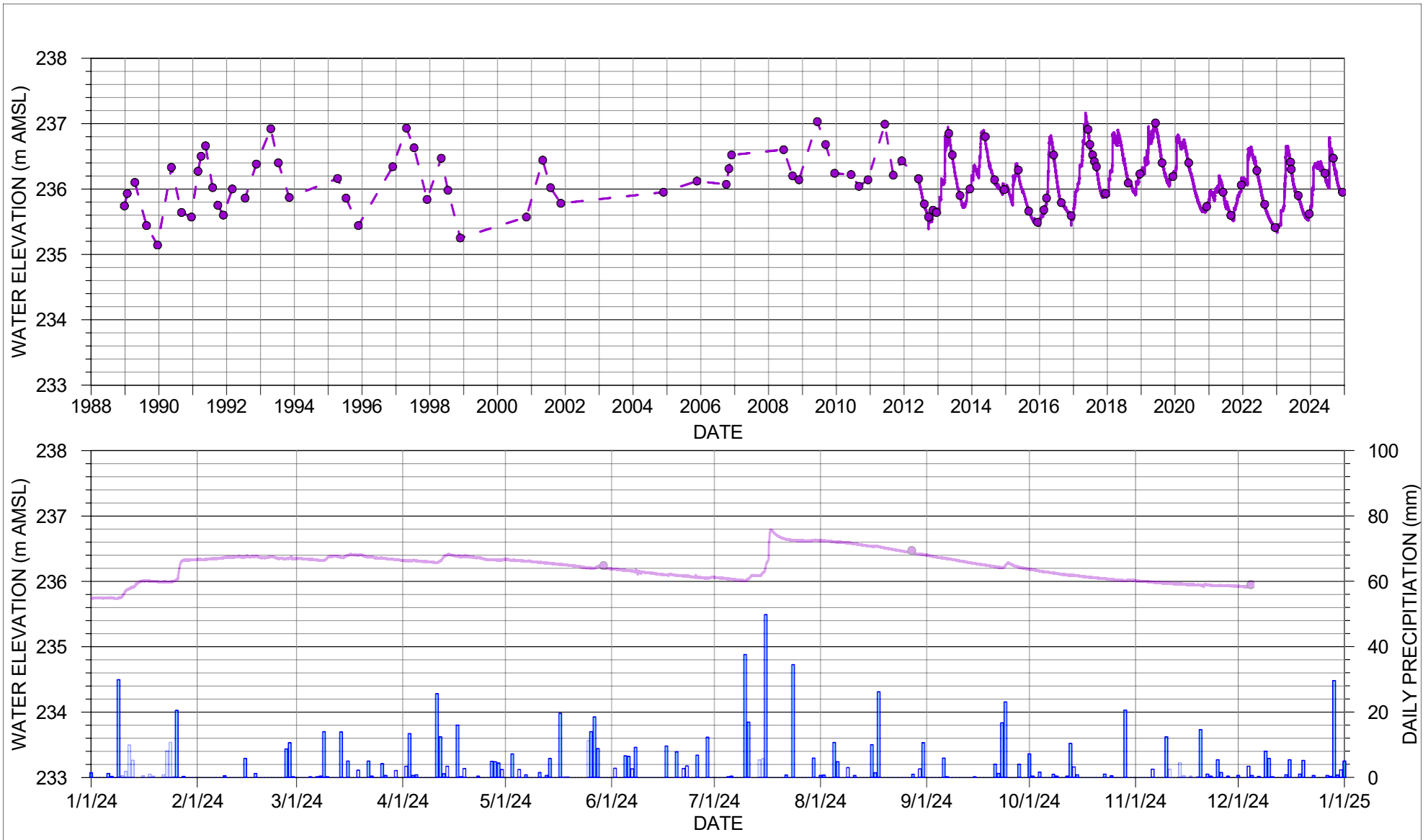


LEGEND

BH88-6-I Daily Precipitation

GHD

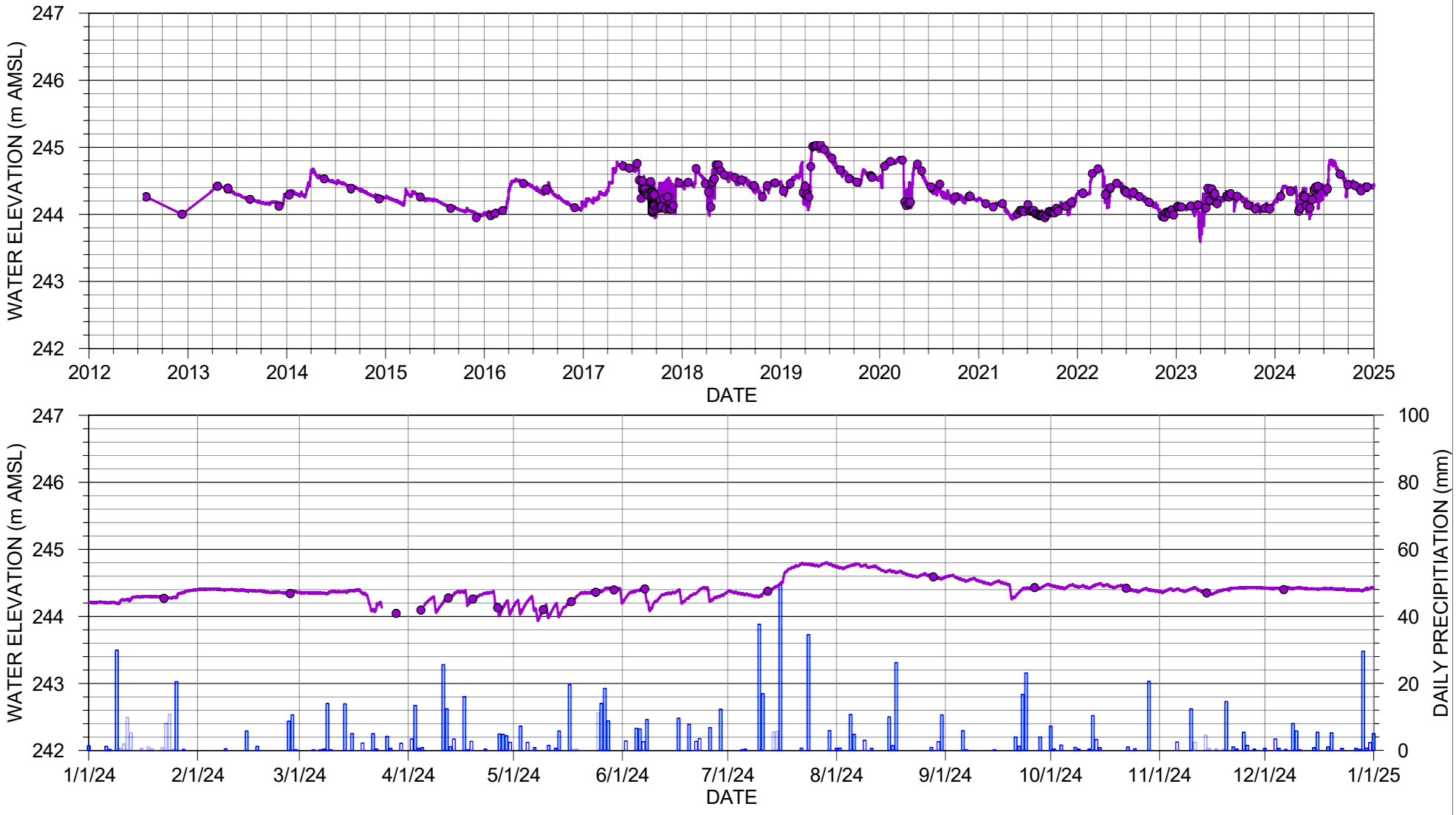
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - BH88-6-I

FIGURE C.5

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\BH88-6-I.grf



LEGEND

MW1-12 — Daily Precipitation

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW1-12

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.6

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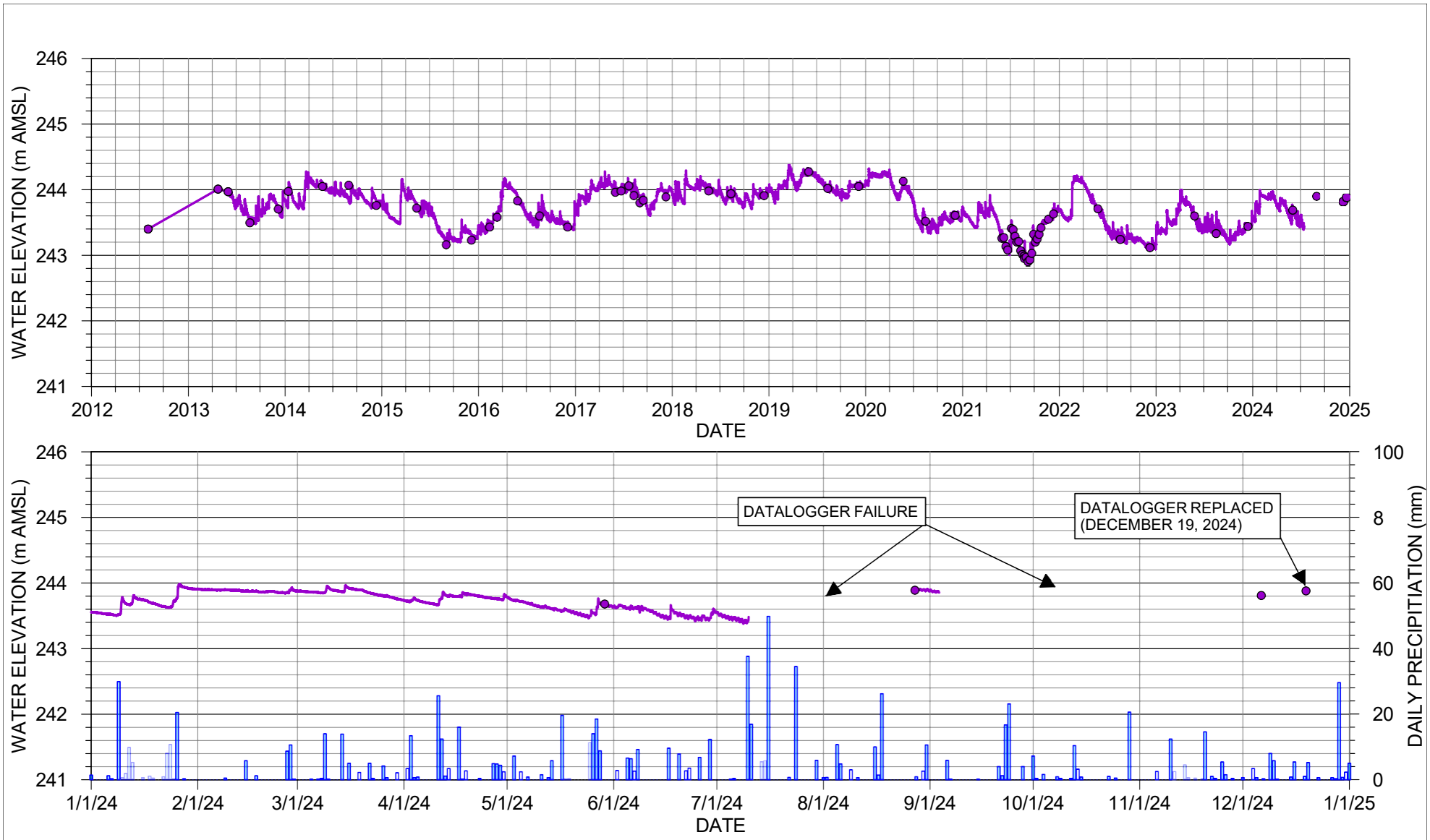

LEGEND

MW2-12 — Daily Precipitation

GHD

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW2-12

Project No. 078410-20
Date February 14, 2025

FIGURE C.7

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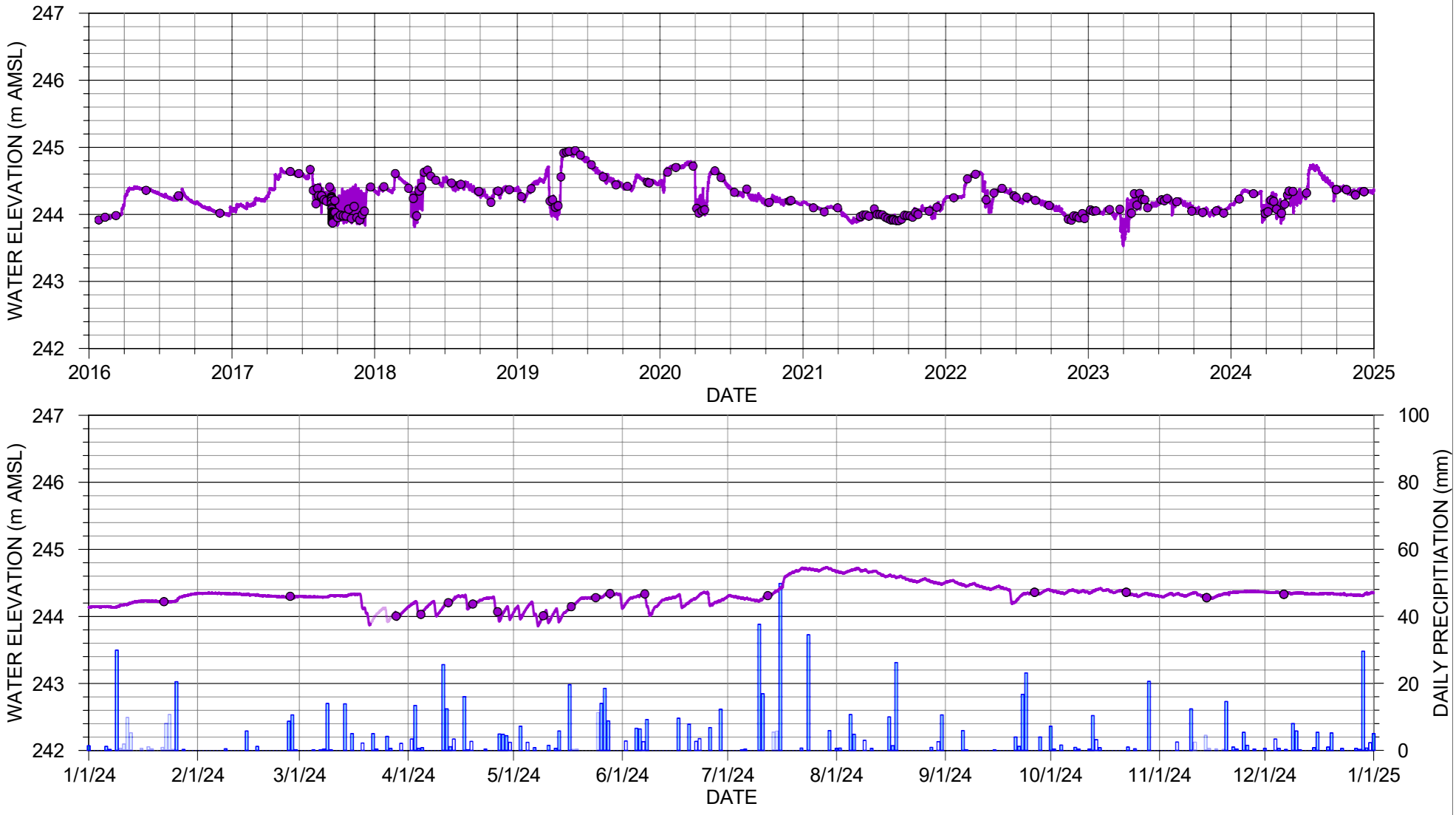

LEGEND

MW3-16 — Daily Precipitation

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW3-16

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.8

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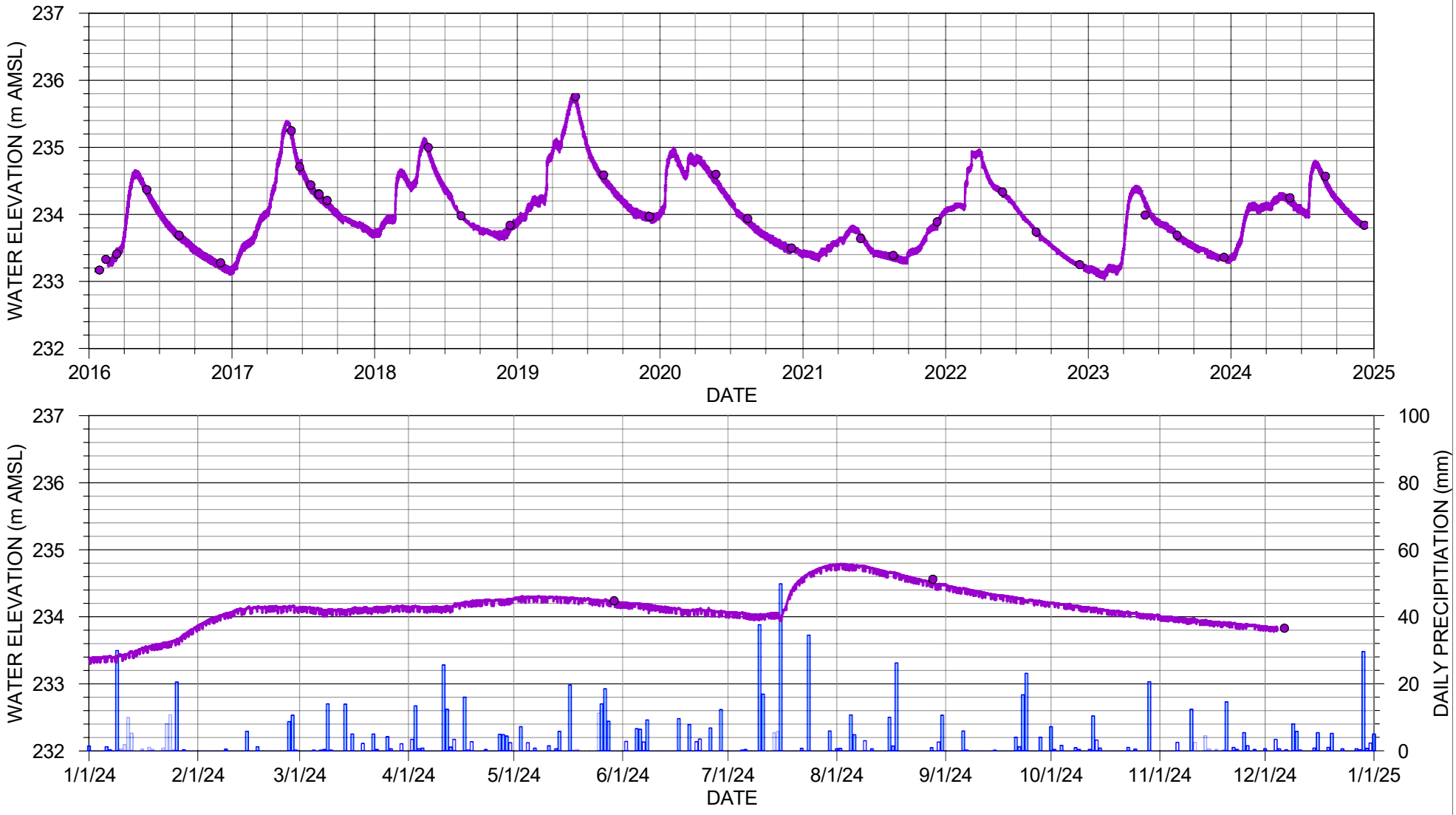


LEGEND

MW4-16 — Daily Precipitation

GHD

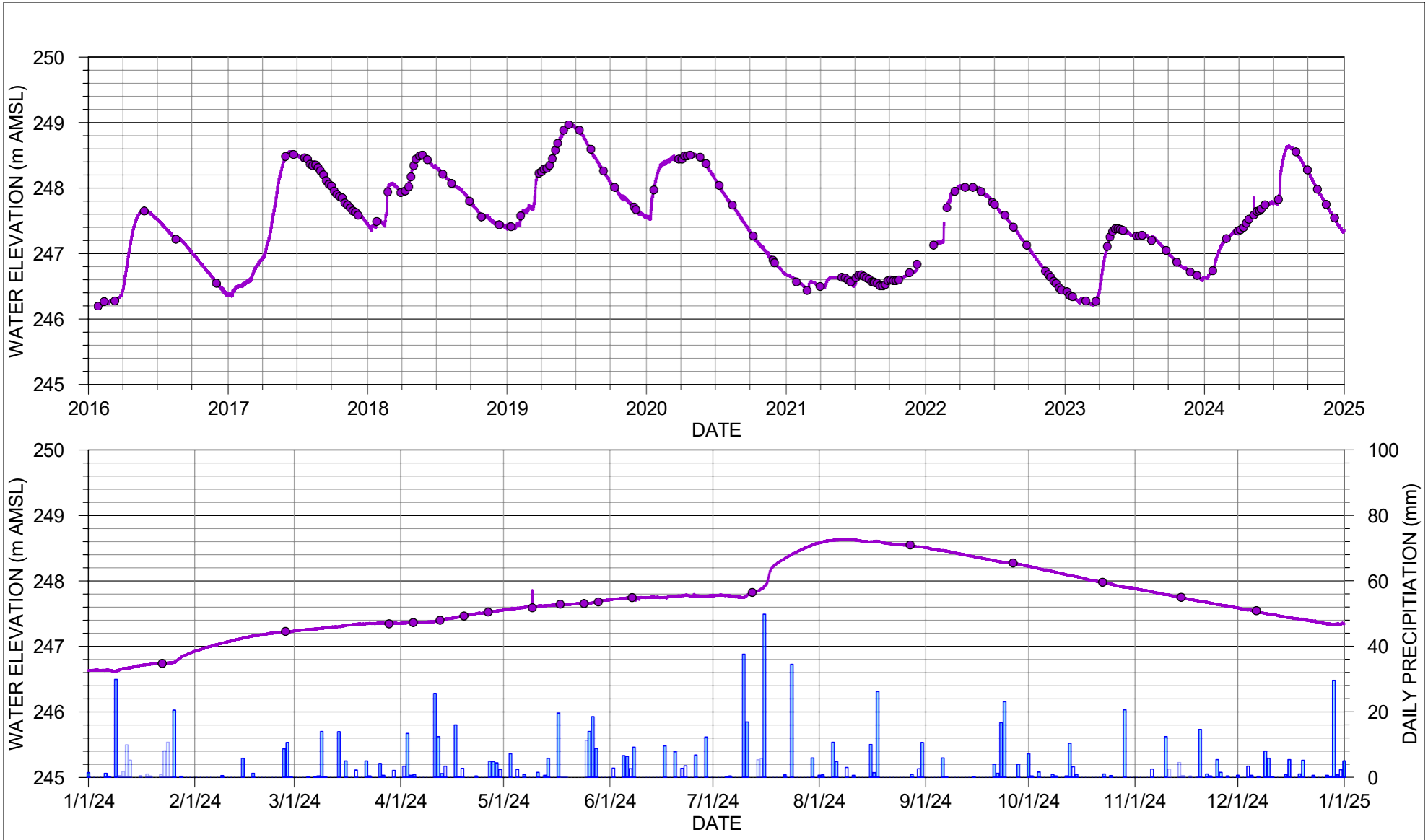
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW4-16

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.9

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW4-16.grf



LEGEND

MW5-16 — Daily Precipitation

GHD

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - MW5-16

FIGURE C.10

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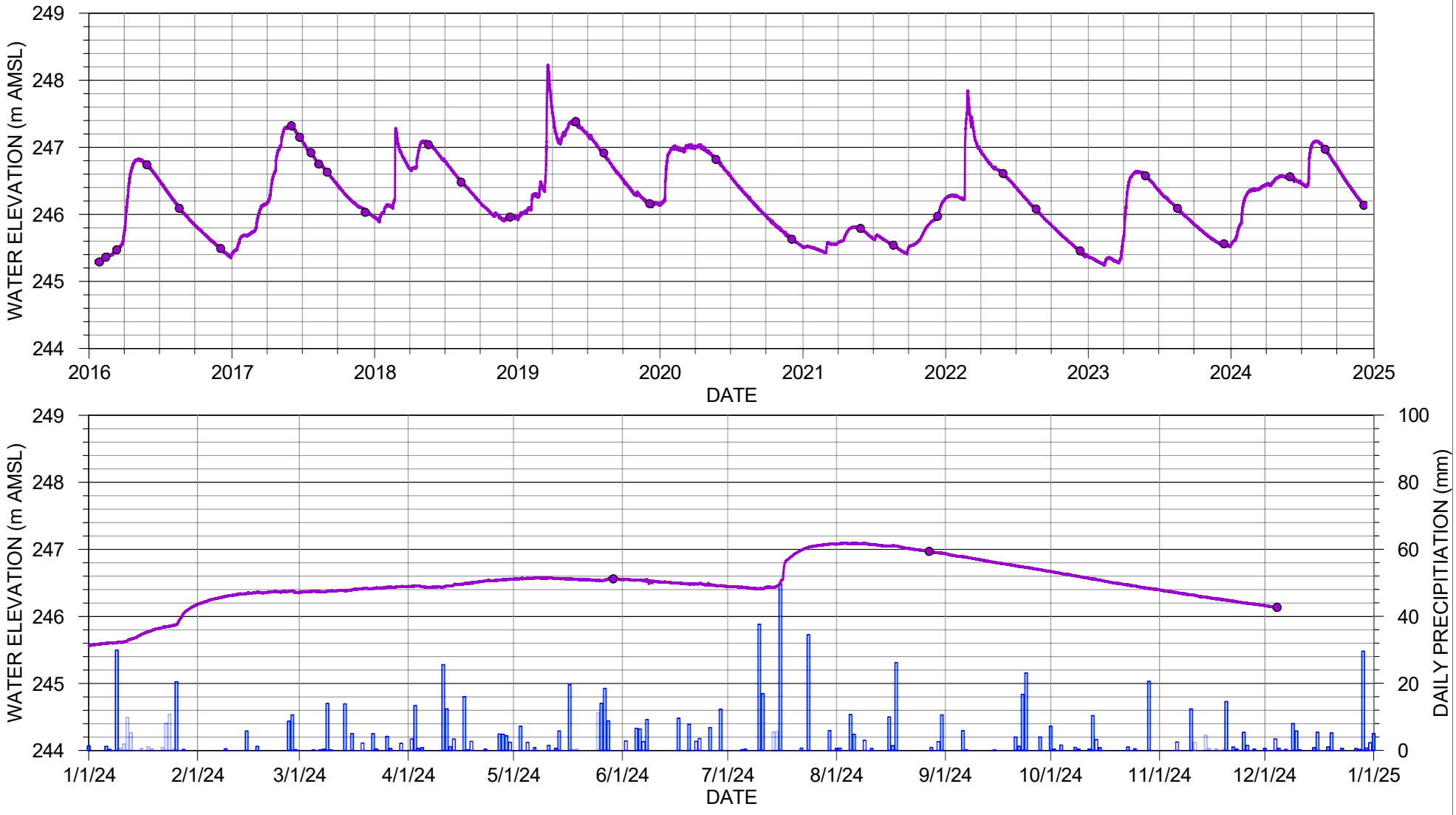


LEGEND

MW6-16 — Daily Precipitation

GHD

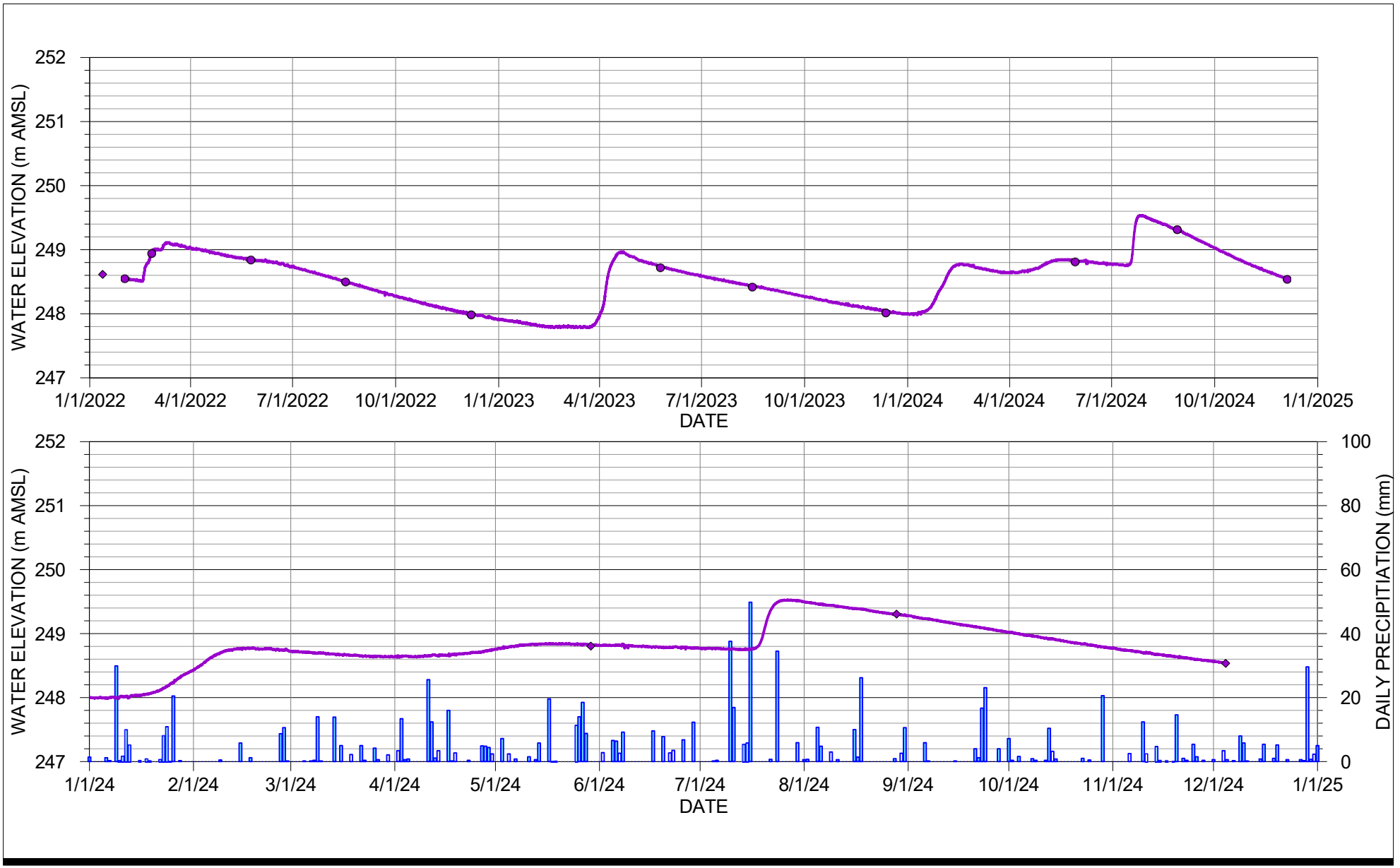
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - MW6-16

FIGURE C.11

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW6-16.grf



LEGEND

MW8-22 Daily Precipitation

GHD

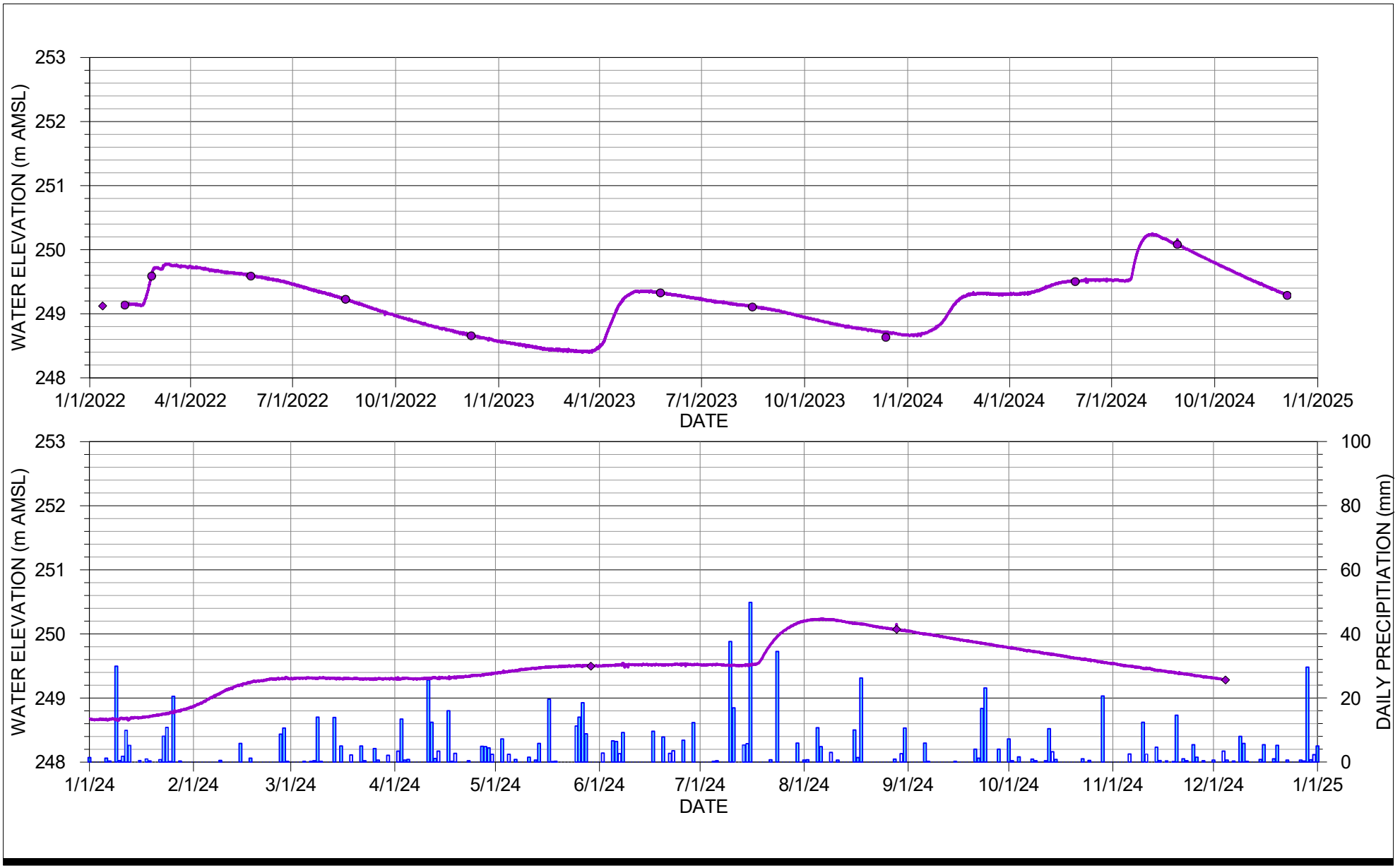
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW8-22

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.12

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW8-22.grf



LEGEND

MW9-22 — Daily Precipitation

GHD

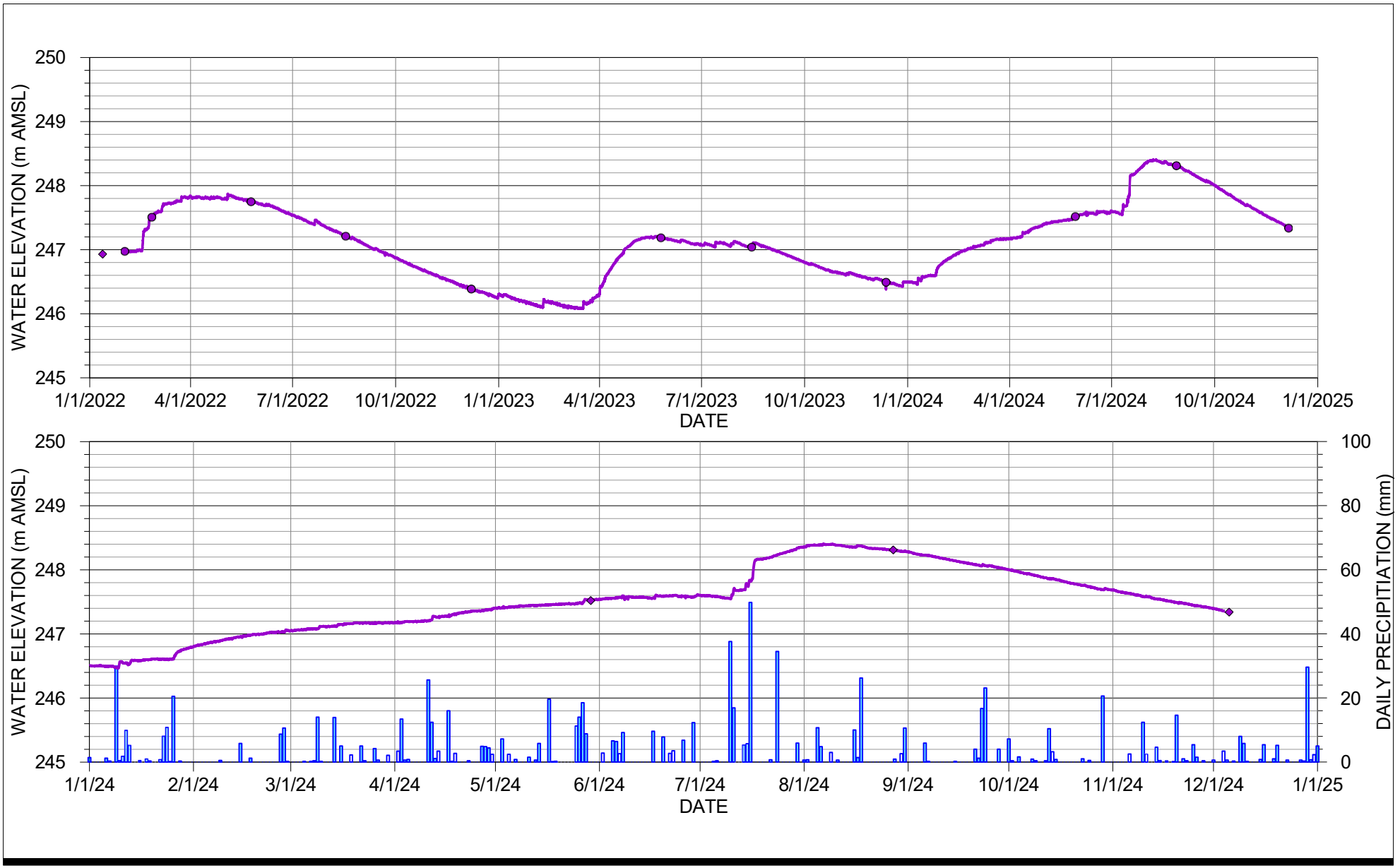
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
Date **February 14, 2025**

HYDROGRAPH - MW9-22

FIGURE C.13

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW9-22.grf



LEGEND

MW10-22 — Daily Precipitation

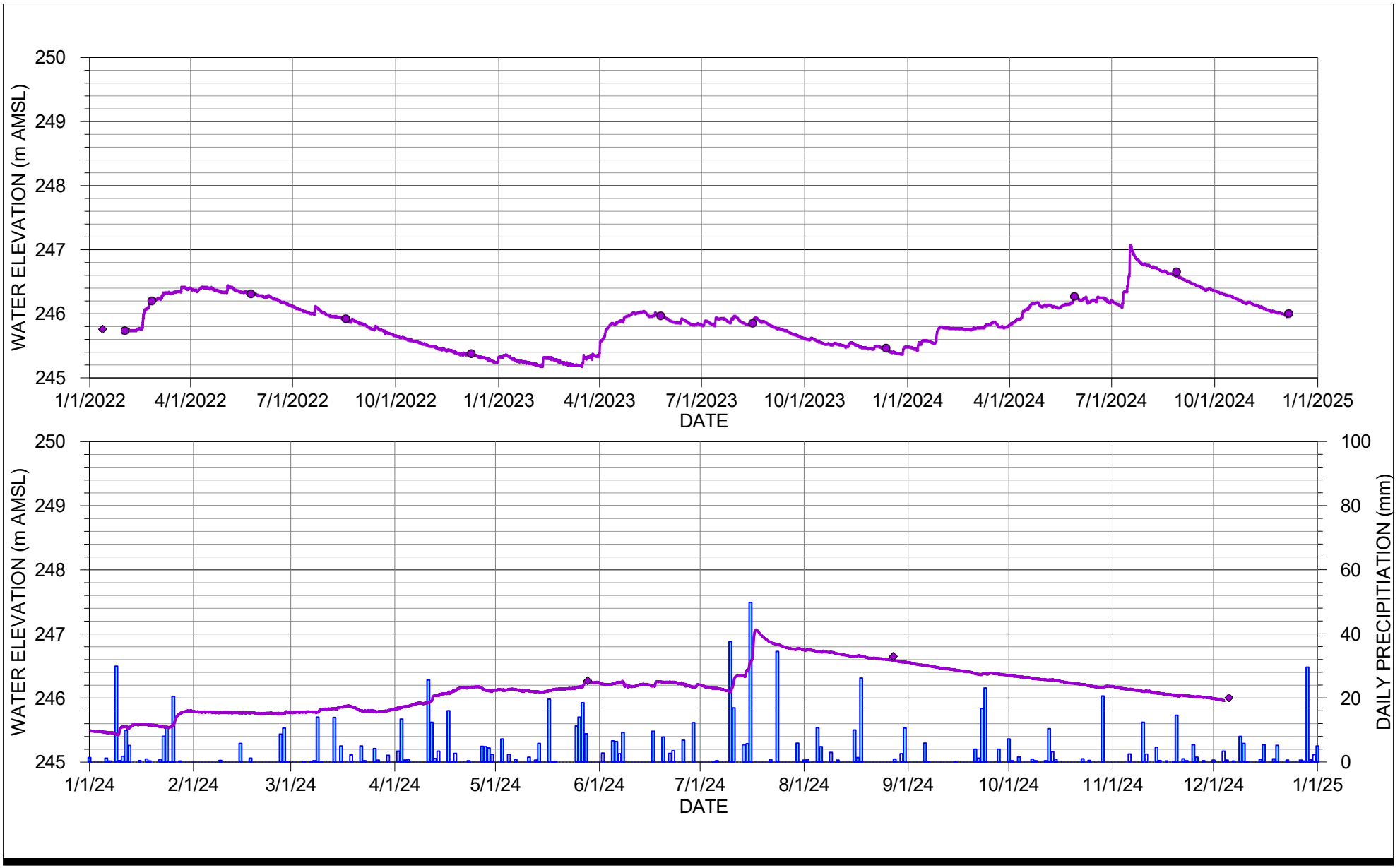
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW10-22

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.14

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW10-22.grf



LEGEND

MW11-22 — Daily Precipitation

GHD

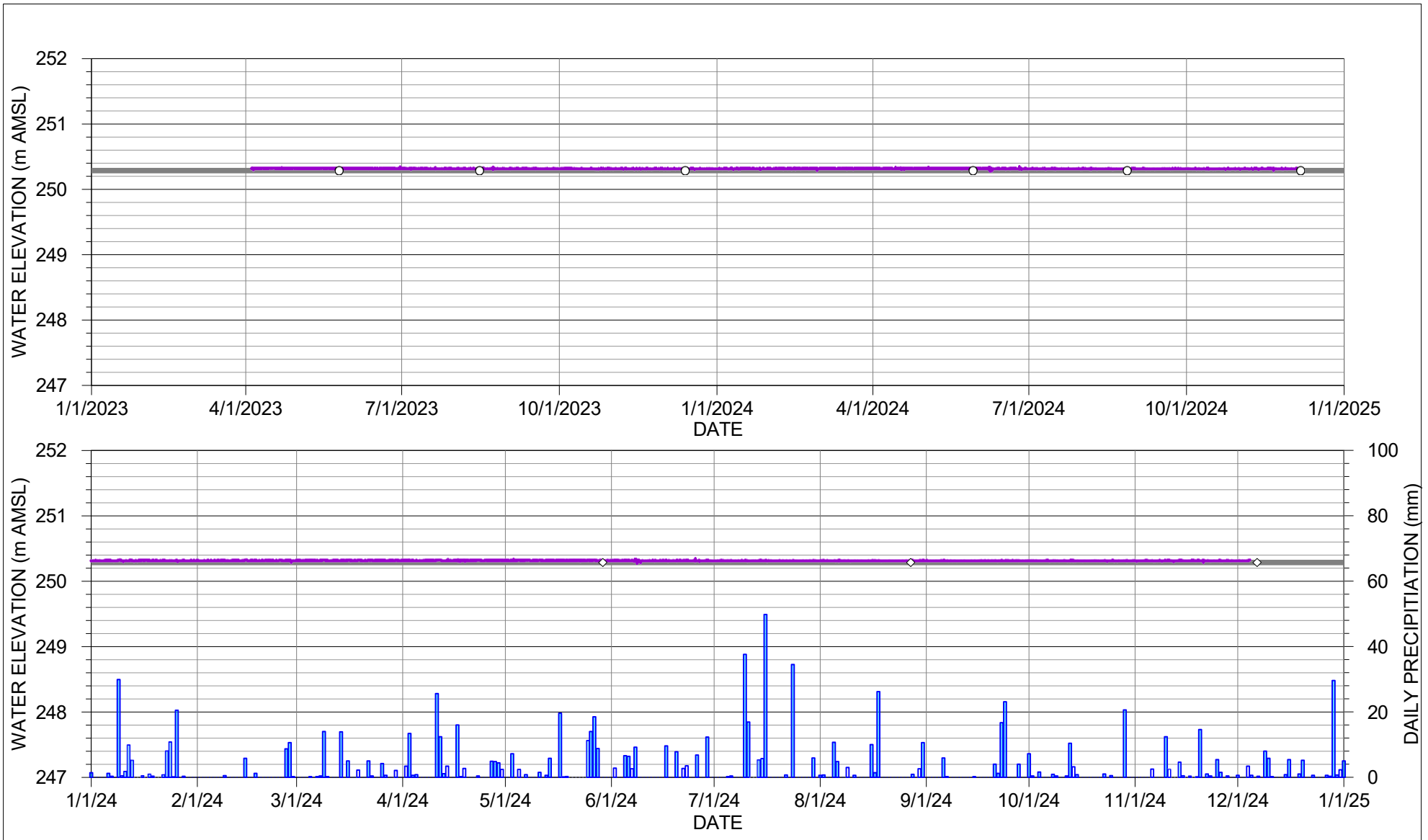
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - MW11-22

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.15

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW11-22.grf



Note: Open symbols denote a dry observation; bottom of well reported.

LEGEND

MW12-23

Bottom of Well

Daily Precipitation

GHD

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

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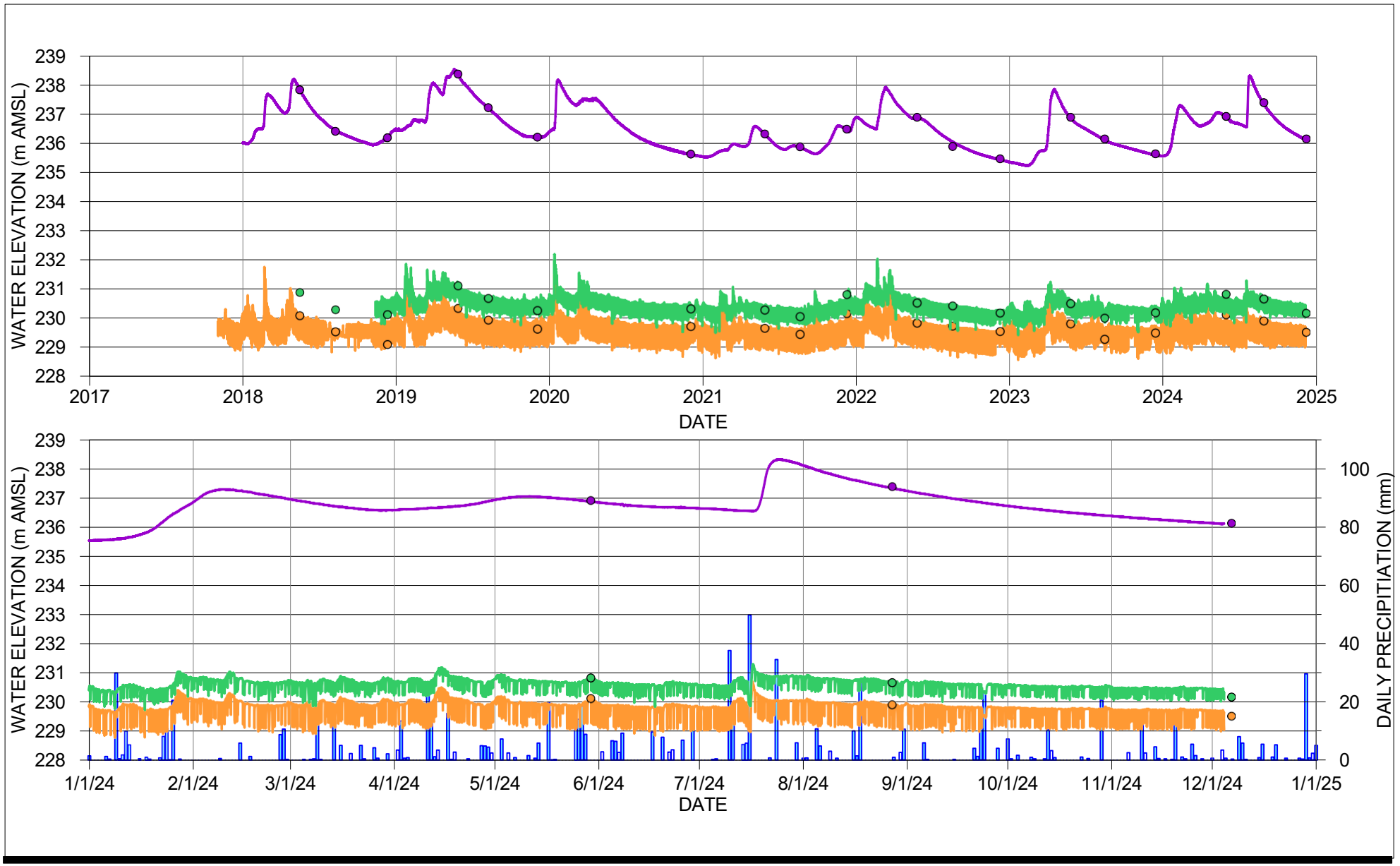
HYDROGRAPH - MW12-23

FIGURE C.16

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MW12-23.grf



LEGEND

Daily Precipitation

OW1-96A

OW1-96B

OW1-96C

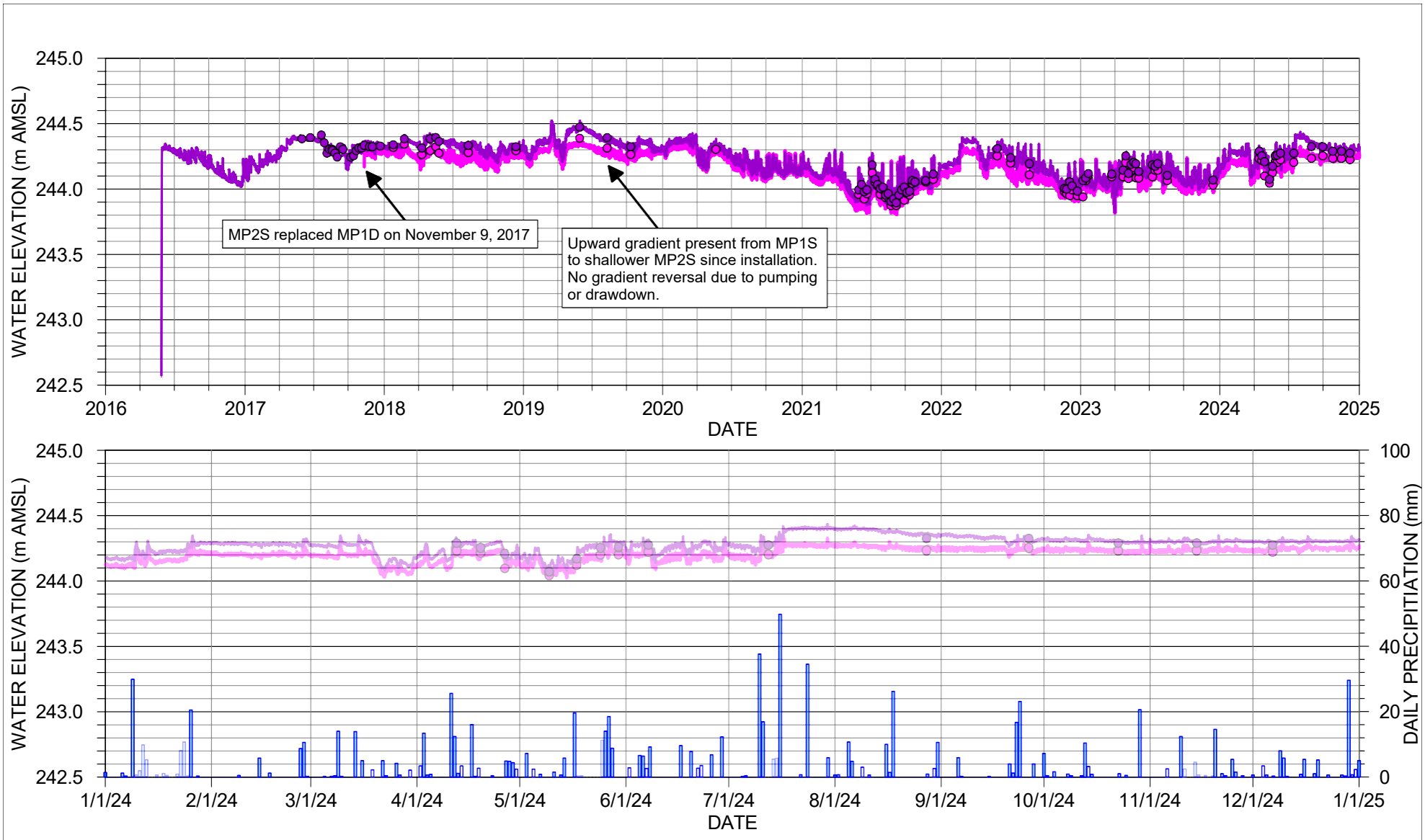
DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH - OW1-96 NEST

Project No. **078410-20**
Date **February 14, 2025**

FIGURE C.17

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\OW1-96.grf



LEGEND

MP1S

MP2S

Daily Precipitation

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

HYDROGRAPH
MULTI-LEVEL PIEZOMETER

Project No. **078410-20**
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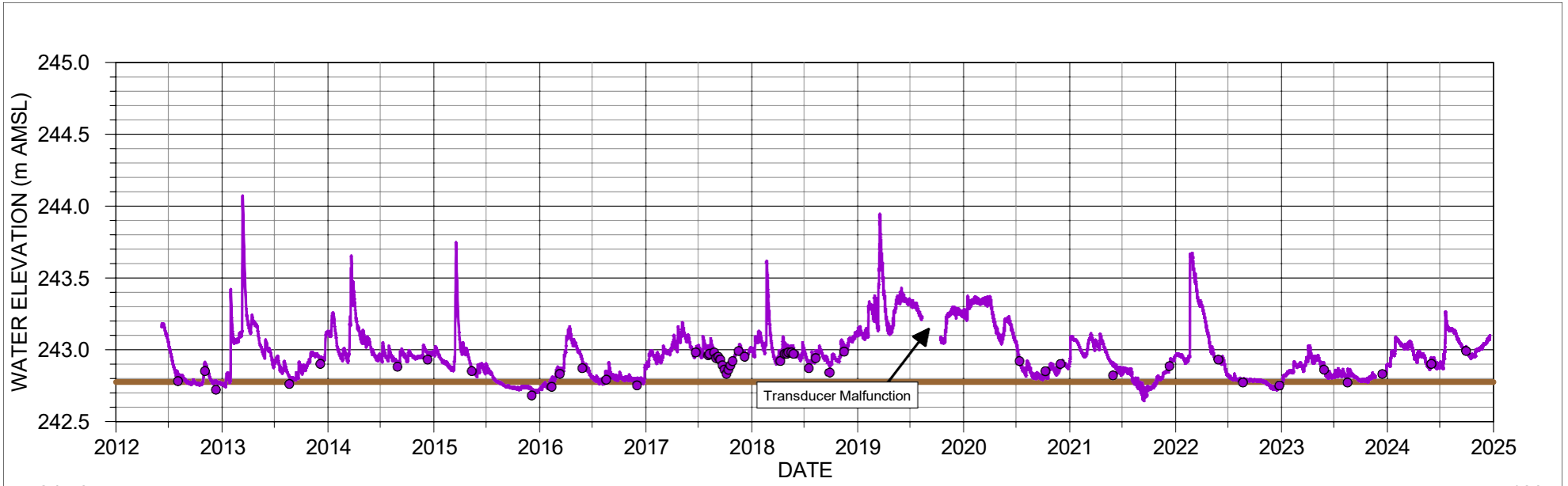
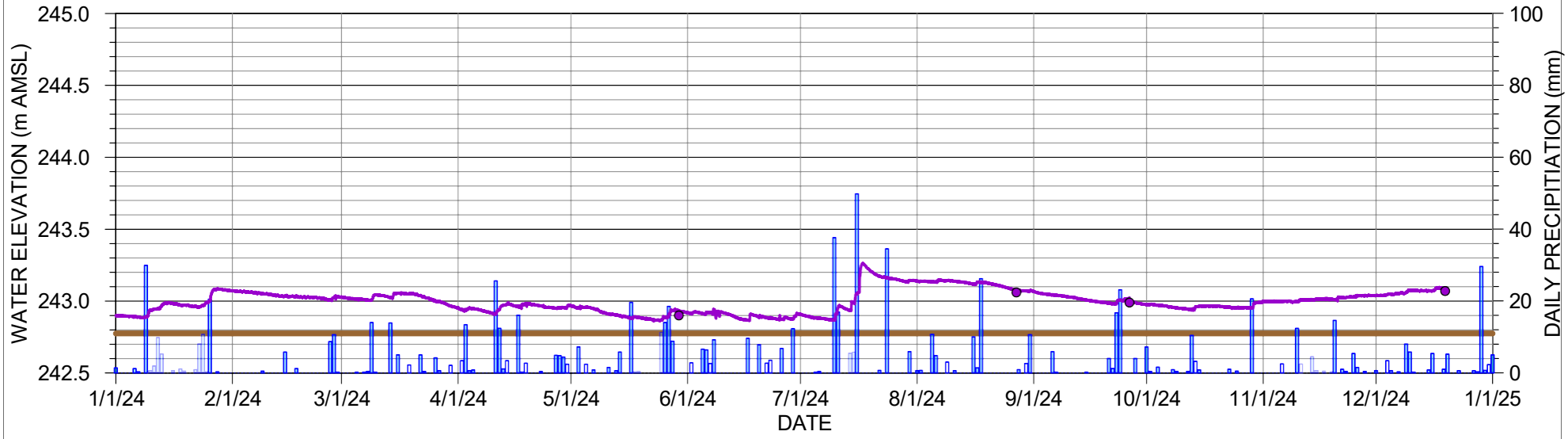
FIGURE C.18

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\MP1.grf





LEGEND

SW1A

Approximate Ground Surface

Daily Precipitation

GHD

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
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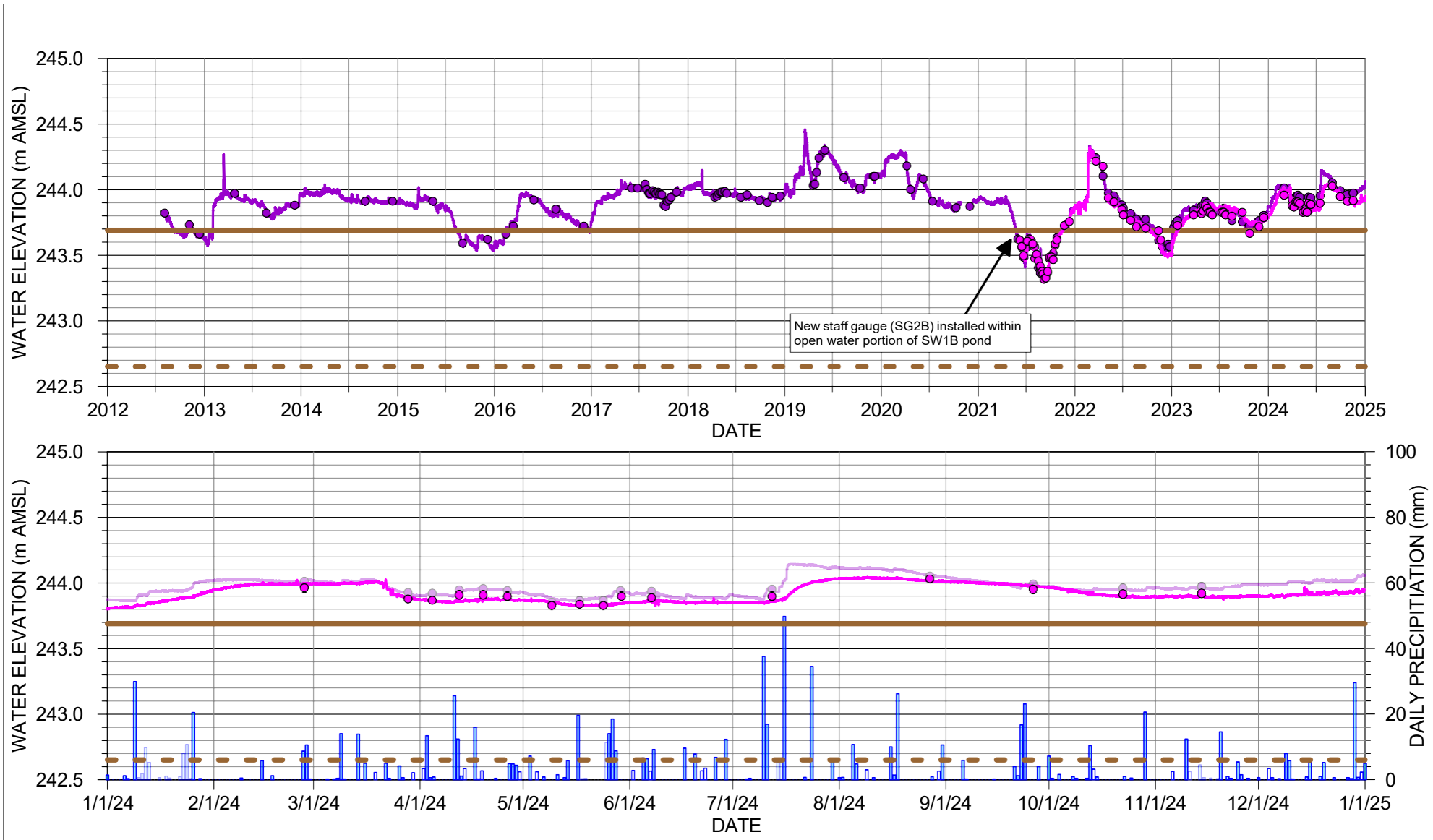
HYDROGRAPH - SW1A

FIGURE C.19

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\SW1A.grf



LEGEND

- SW1B
- SG2B
- Daily Precipitation
- Approximate Ground Surface at SW1B
- Approximate Ground Surface at SG2B

DUFFERIN AGGREGATES - PARIS PIT
COUNTY OF BRANT, ONTARIO

Project No. **078410-20**
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HYDROGRAPH - SW1B

FIGURE C.20

HEG file: N:\CA\Waterloo\HEG\HEG\78410\GRAPHER\AMR\2024\APPD\SW1B.grf