MTE Consultants
1016 Sutton Dr., Unit A, Burlington, Ontario L7L 6B8

October 15, 2025
MTE File No.: 62524_002

Tribal Partners Canada Inc, and
its management arm TDMSI
201 – 2700 Steeles Avenue West
Vaughan, Ontario L4K 3C8

RE: Addendum – Supplemental Hydrogeological Information
12506 & 12698 Heart Lake Rd., Caledon, Ontario (Site)

MTE Consultants Inc. (MTE) was retained by Tribal Partners (Client) to complete hydrogeological assessment in support of proposed industrial development at the above referenced project Site. This addendum is to be read in conjunction with the following document, which has been submitted under separate cover:

- *Envision Consultants Ltd (Envision), Preliminary Hydrogeological Report, 12506 Heart Lake Road, Caledon, ON, Project # 24-0825, dated January 10, 2025.*

The following sections present the results of ongoing seasonal groundwater monitoring, the site-specific pre- and post-development water balance, and the next steps for the hydrogeological assessment.

Seasonal Groundwater Monitoring (Dec 2024 – Sept 2025)

MTE utilized the existing six monitoring wells (BH24-1, BH24-3, BH24-7, BH24-9, BH24-14 and BH24-15) installed by Envision during the preliminary hydrogeological investigations in November 2024. In addition, MTE installed a nested piezometer–staff gauge pair (MP101-25/SG101-25) within the unevaluated wetland area located to the north of the Site along Campbells Cross Creek. The locations of the monitoring stations are shown in **Figure 1**

The water level measurements were recorded manually in accessible on-site monitoring stations at seven separate monitoring events between December 2024 and September 2025 and summarized in appended **Table 1**.

In addition to this, to evaluate seasonal groundwater levels, Envision installed dedicated pressure transducers (data loggers) in three monitoring wells (BH24-1, BH24-9, and BH24-14) in December 2024, which were removed in June 2025. Following this, in June 2025, MTE installed data loggers in five monitoring wells (BH24-1, BH24-3, BH24-7, BH24-14, and BH24-15) as well as in piezometer MP101-25 and collected data through September 2025. A barologger was also installed to allow for atmospheric pressure compensation of groundwater levels recorded by data loggers.

Hydrographs presenting seasonal monitoring data for each station are included in **Appendix A**. Precipitation data obtained from Environment Canada's Historical Data online database for the weather station Toronto International Airport (Climate ID No. 6158731) was also plotted on the Hydrographs to assess seasonal fluctuations in context of precipitation events

Based on the monitoring results collected from December 2024 to September 2025, the seasonal high groundwater levels ranged from approximately 272.0 meters above mean sea level (m amsl) at BH24-14 to 266.9m amsl at BH24-1 corresponding to about 0.8 metres below

ground surface (m bgs) to 5.0m bgs respectively. It is noted that corresponding Hydrographs observe temporary increases in water level response to precipitation events.

Groundwater measurements collected on September 15, 2025, indicate that local groundwater flow is generally directed westward, with an average horizontal hydraulic gradient of 0.01 m/m. The interpreted flow direction is presented on **Figure 1**.

Furthermore, water level data from piezometer station MP101-25, indicate that groundwater levels remained above the surveyed ground surface elevation throughout the monitoring period (June 2025 – September 2025). This suggests hydraulic connection of groundwater to wetland feature. The manual surface water measurements at stream staff gauge SG101-25 align closely with the piezometer water levels. However, the current data set represents only a short seasonal snapshot. Year-round monitoring is required to establish the groundwater-surface water interaction.

The conditions may vary from those described herein due to seasonal and inter-annual fluctuations, particularly in response to significant precipitation events. Additionally, variations in groundwater elevations and flow direction may occur where the monitoring wells are installed within stratified fine-grained soils (such as tills and interbedded silts/clays). As such, caution should be exercised when interpreting the groundwater data. The monitoring program is ongoing, and additional results will be incorporated into the hydrogeological assessment report.

Water Balance Assessment

A site-specific average annual water balance was prepared to assess the distribution of rainfall, runoff, and infiltration for pre-development and post-development conditions. Following the Thornthwaite and Mather (1957) approach, the basic water balance for a particular area can be expressed as:

$$\boldsymbol{P = R + ET/E + I + \Delta S}$$

Where:

P = Precipitation
R = Runoff
ET/E = Evapotranspiration and/or Evaporation
I = Infiltration
ΔS = Change in groundwater storage

The components of the water balance exhibit spatial and temporal variations, influenced by climatic factors, soil composition, and land cover conditions (such as rainfall intensity, land slope, soil hydraulic conductivity, and vegetation). For water balance calculations, the Toronto and Region Conservation Authority (TRSPA) Water Balance Tool was used to estimate the average annual precipitation (P) and evapotranspiration (ET), which were estimated as 869mm/year and 679mm/year, respectively.

The difference between precipitation and evapotranspiration is the water surplus available for infiltration (I) and runoff (R) i.e., 200mm/year. A portion of the excess water flows over the soil surface as surface or overland runoff, while the remaining portion seeps into the top layer of the soil through infiltration. The water surplus is used to estimate infiltration by applying an infiltration factor which is estimated as 0.4 for pre and post development conditions, considering the rolling topography (0.2), tight impervious clay soil type (0.1) and cultivated cover (0.1) (Table 3.1, Ministry of the Environment, 2003).

Although there are groundwater storage gains and losses on a short-term basis, the net change in groundwater storage on a long-term basis is assumed to be zero. Furthermore, it is assumed that 10% of precipitation will be allocated to evaporation in impermeable areas, while the remaining 90% will contribute to runoff.

The pre and post development site statistics and annual water balance calculations are provided in **Appendix B Table B.1**.

Below table summarizes the comparison of pre and post development annual water balance of the Site assuming no mitigation measures are in place:

Table 1: Summary of Pre- and Post Development Annual Water Balance (No Mitigation)

Parameter	Pre-Development [m^3/year]	Post-Development (Unmitigated) [m^3/year]	Difference [m^3/year]
Precipitation (P)	315,921	315,921	0
Evaporation (E)	386	25,929	25,543
Evapotranspiration (ET)	241,061	43,748	-197,312
Infiltration (I)	28,402	5,154	-23,247
Runoff (R)	46,073	241,089	195,017

Notes:
1. Negative value indicates a decrease following development.

The above calculations suggest that, without mitigation, the proposed development will reduce the infiltration by 23,247m^3/year (82%) and increase the runoff by 195,017m^3/year. The calculations for the Site are indicative of the post-development infiltration being at a level of about 18% of the pre-development infiltration. The calculations also suggest that approximately 125,126m^3/year of clean roof run-off should be available post-development. Therefore, the management of pre-development recharge at the Site is recommended where it is feasible.

The runoff from the proposed development should conform to the stormwater management design for the Site. The management of post development recharge at the Site is recommended where it is feasible and should be designed using a Best Management Practice (BMP) approach ensuring that pre development infiltration (recharge) is maintained.

Please refer to the proposed stormwater management design submitted under separate cover for details related to proposed stormwater management and water balance strategies.

Next Steps & Ongoing Activities

The following outlines the key next steps and ongoing activities:

1. Seasonal monitoring to be continued at the Site;
2. Additional boreholes and monitoring wells to be advanced as a part of the Geotechnical Investigation program to assess soil and groundwater conditions;
3. In-situ infiltration testing to be conducted to estimate infiltrate rates of native soils and support stormwater management design; and
4. Comprehensive hydrogeological investigation report to prepared including the results of monitoring program, water quality assessment, dewatering requirements and hydrogeological impact assessment.

Closing

We trust that the information provided in this addendum is suitable for your requirements. Please feel free to reach out to us if you have any questions.

Yours truly,

MTE Consultants Inc.

Usman Arshad, M.Eng., P.Eng., PMP
Project Manager - Hydrogeology
905-639-2552 ext. 2448
uarshad@mte85.com

UMA:
https://mte85.sharepoint.com/sites/62524_002/Shared Documents/03- Reports/Addendum/62524_002_2025-10-15_Hydrog Addendum_12506 Heart Lake Rd, Caledon.docx

Encl.

Figure 1 – Site Plan
Table 1 – Manual Groundwater Elevations (m AMSL)
Appendix A – Hydrographs
Appendix B – Water Balance Calculations

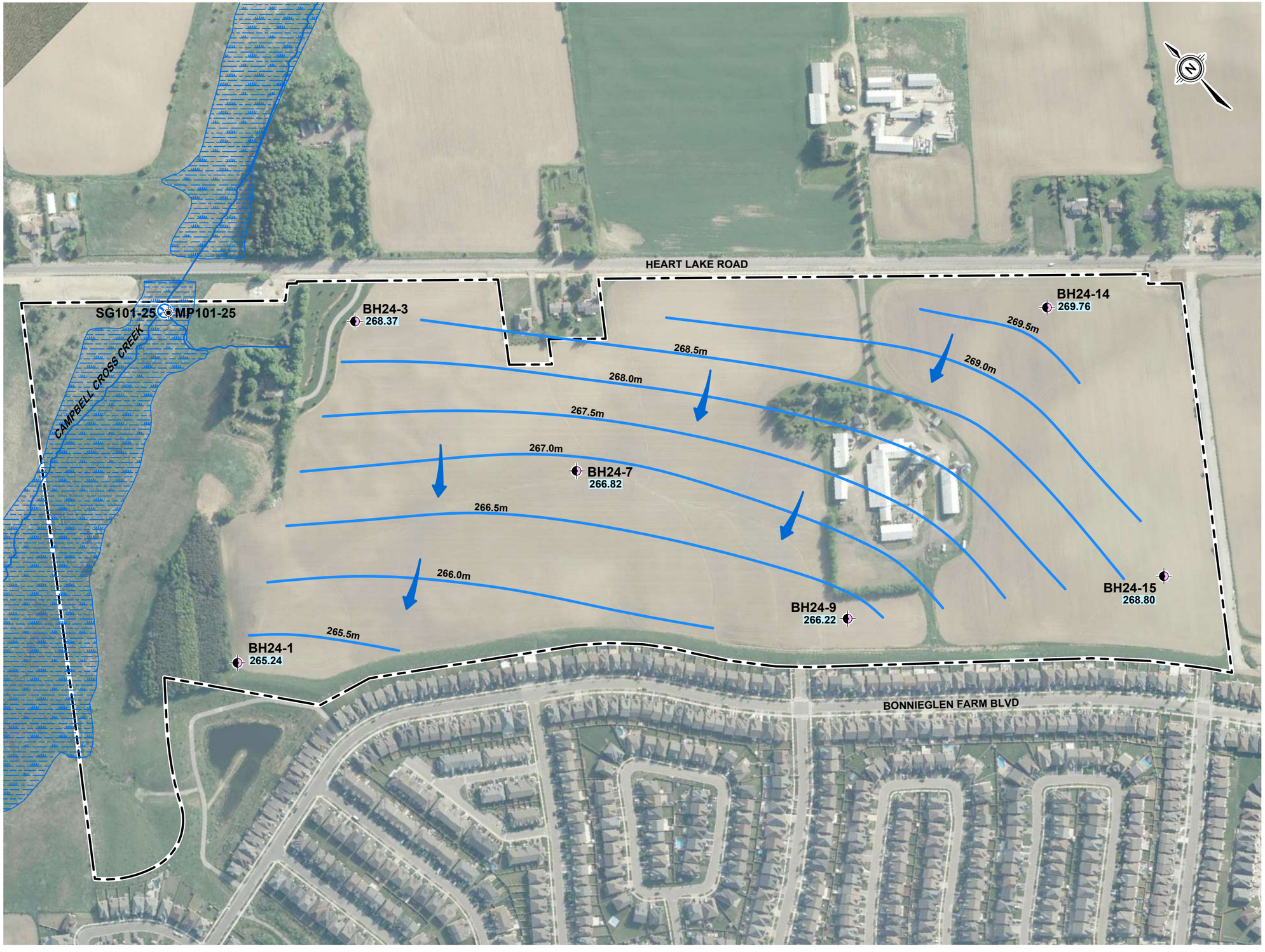
References

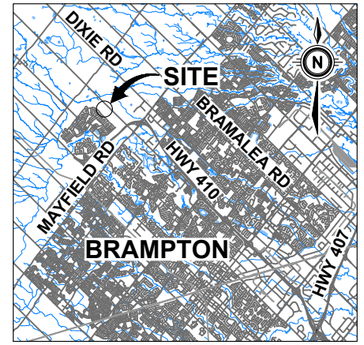
Envision Consultants Ltd (Envision), Preliminary Hydrogeological Report, 12506 Heart Lake Road, Caledon, ON, Project # 24-0825, dated January 10, 2025

Ministry of Environment, Conservation and Parks (2003). Stormwater Management Planning and Design Manual

Toronto and Region Conservation Authority TRSPA Water Balance Tool https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/

Figures





KEY PLAN (nts)

LEGEND

- SITE
- MONITORING PIEZOMETER (MTE)
- STAFF GAUGE (MTE)
- MONITORING WELL (Envision)
- 266.82 MEASURED WATER LEVEL SEPTEMBER 15 - 2025 (m AMSL)
- 267.0m INTERPRETED WATER TABLE ELEVATION (m AMSL)
- INFERRED GROUNDWATER FLOW DIRECTION
- UNEVALUATED WETLAND

REFERENCES

2020 AERIAL IMAGE, WATERCOURSE DATA, REGION OF PEEL;
ARMSTRONG PLANNING, SITE PLAN, OCTOBER 3 - 2025; AND
GEOSPATIAL ONTARIO, ROAD AND WATER NETWORK, WETLANDS, © KING'S PRINTER FOR ONTARIO, 2025.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

0 40 80 120 160 200m

MTE
Engineers, Scientists, Surveyors

PROJECT
HYDROGEOLOGICAL INVESTIGATION
12506 HEART LAKE ROAD
CALEDON, ONTARIO

TITLE
SITE PLAN

Drawn DCH	Scale 1:4,000	Figure 1
Checked	Project No. 62524_001	
Date 2025-10-08	Rev No. 0	

Tables

Table 1: Manual Groundwater Elevations (mAMSL)

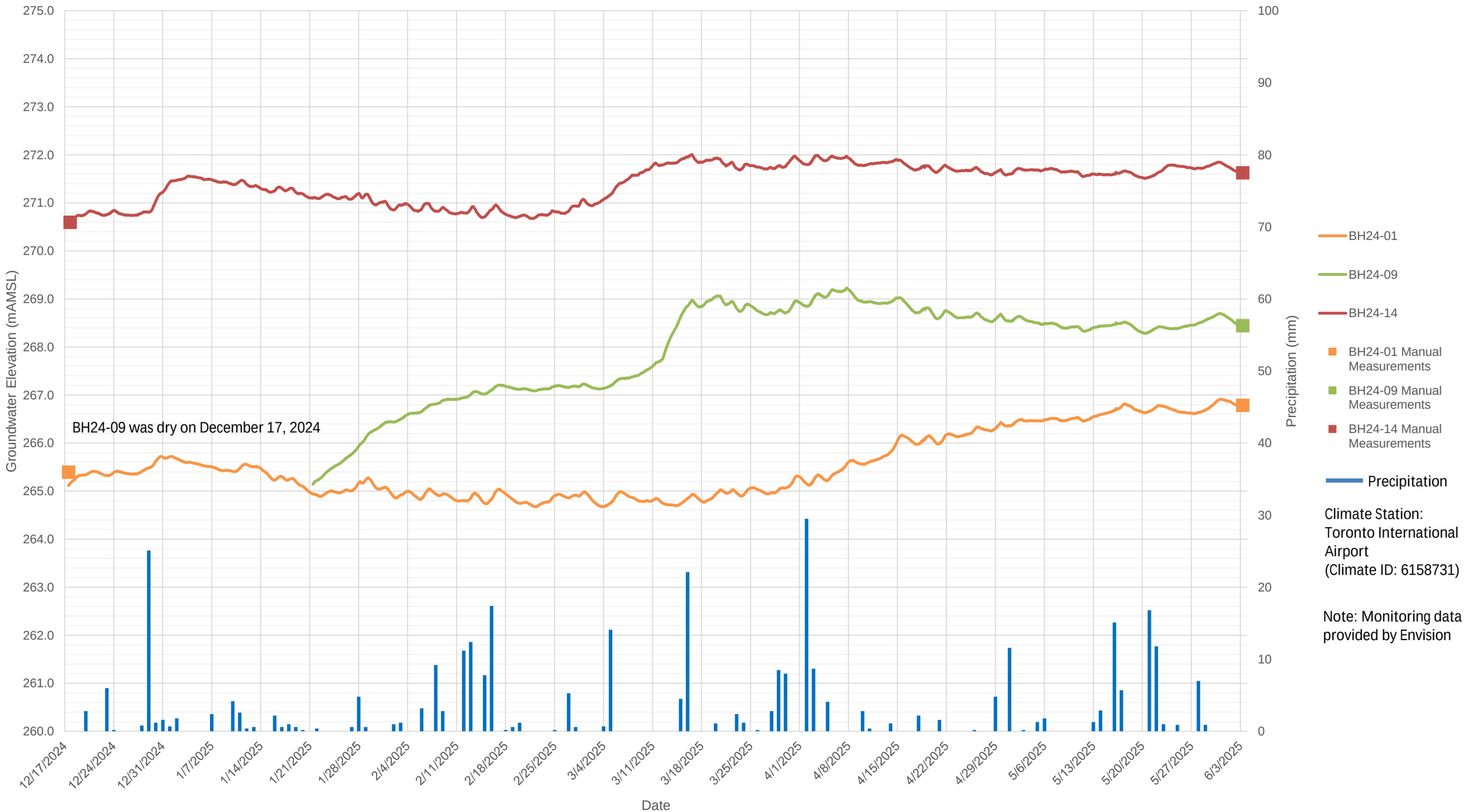
Date	BH24-1	BH24-3	BH24-7	BH24-9	BH24-14	BH24-15	MP101-25	SG101-25
TOC Elevation	272.70	271.52	271.97	272.00	273.62	272.05	263.11	263.42
2024-12-13	265.60	267.76	266.78	-	270.35	269.03	-	-
2024-12-17	265.39	268.77	266.00	dry	270.59	269.05	-	-
2025-06-03	266.78	-	-	268.44	271.62	-	-	-
2025-06-06	266.78	269.62	268.80	268.42	271.98	270.03	-	-
2025-06-13	266.73	269.49	268.77	-	271.41	270.29	-	-
2025-06-18	-	-	-	-	-	-	262.30	262.24
2025-09-15	265.24	268.37	266.82	266.22	269.76	268.80	262.35	262.34

Notes: *TOC = Top of Casing Elevation*

Appendix A

Hydrographs

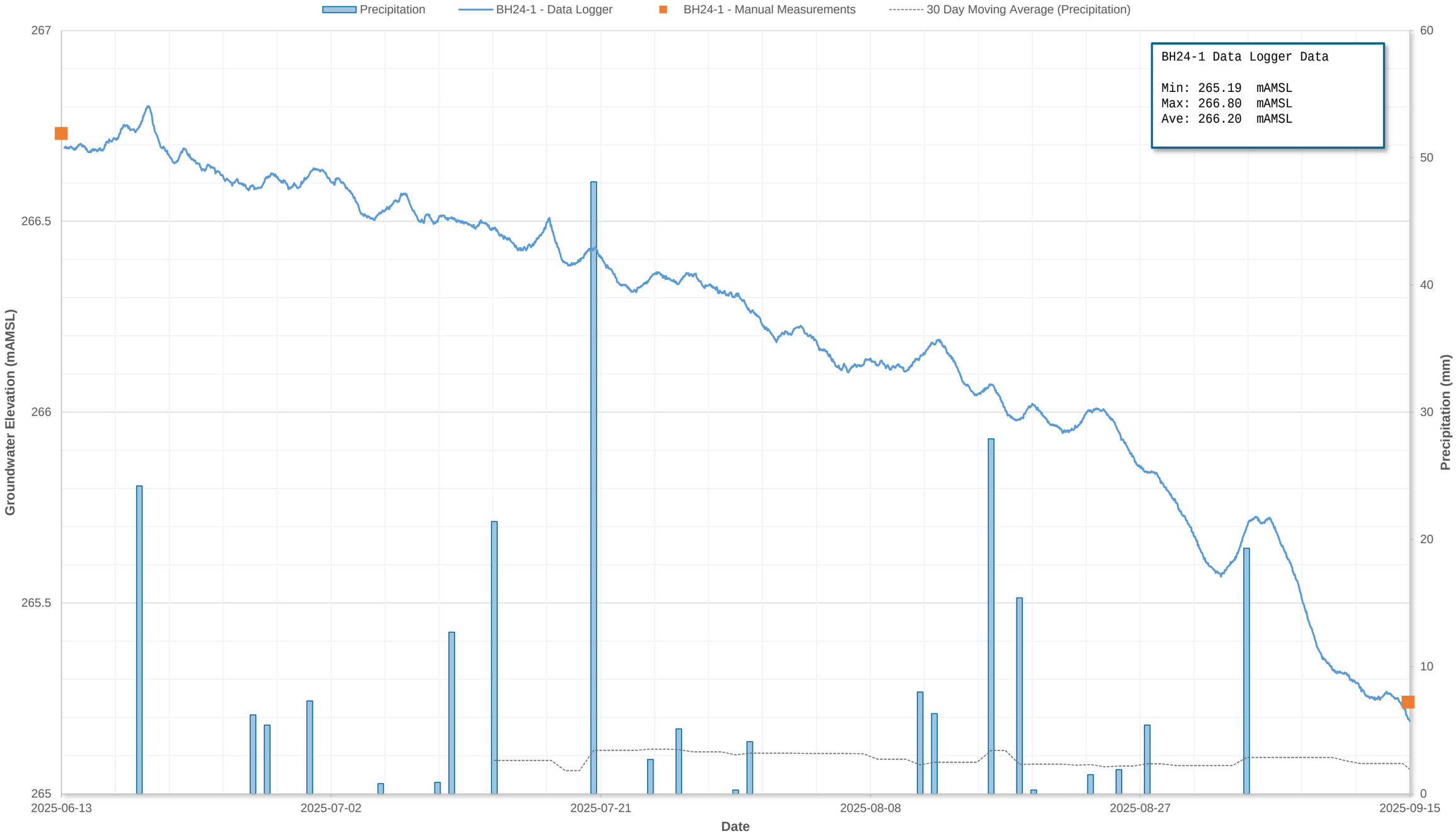
Hydrograph - 12506 Heart Lake Road, Caledon, ON



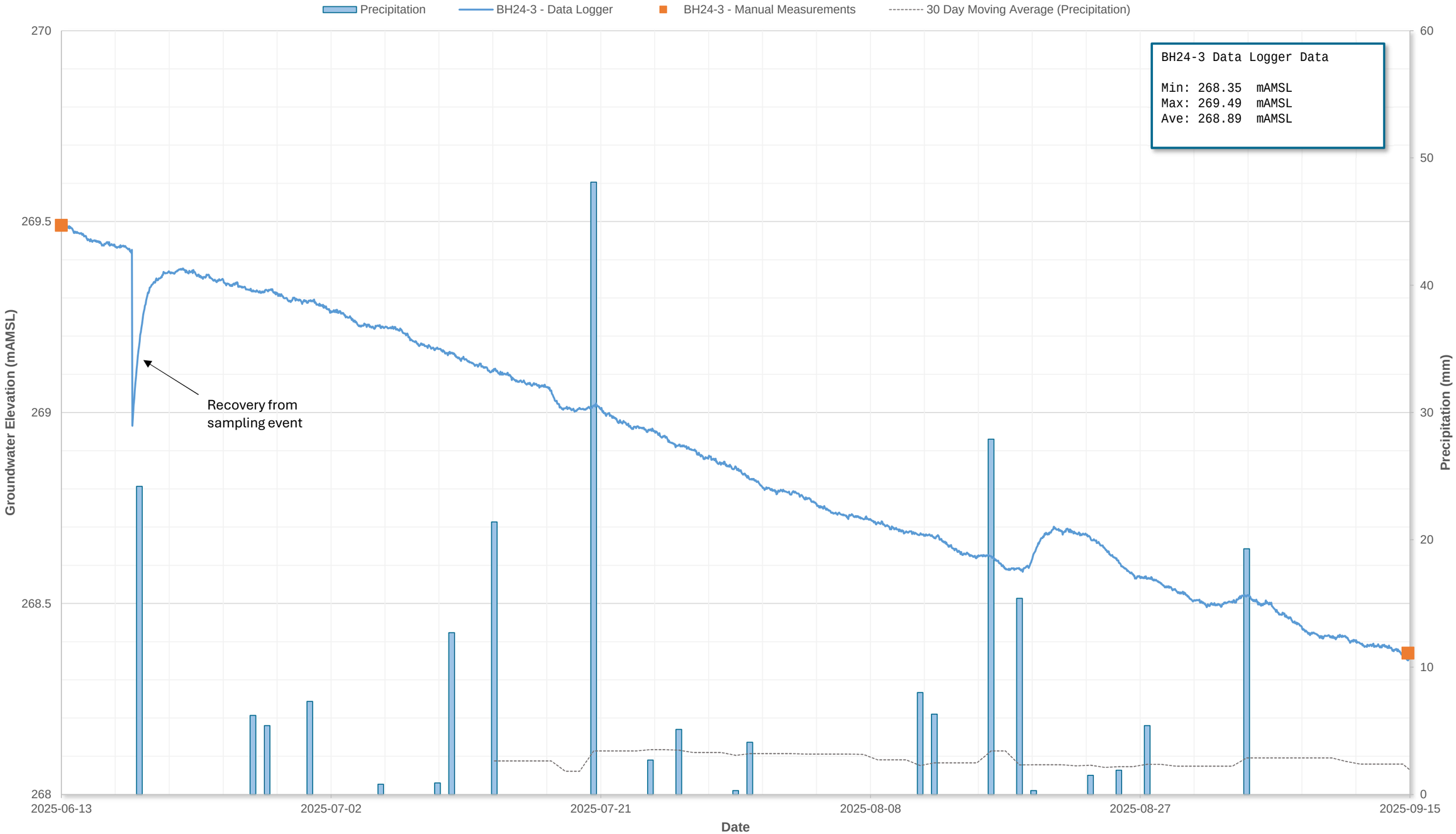
Climate Station:
Toronto International Airport
(Climate ID: 6158731)

Note: Monitoring data provided by Envision

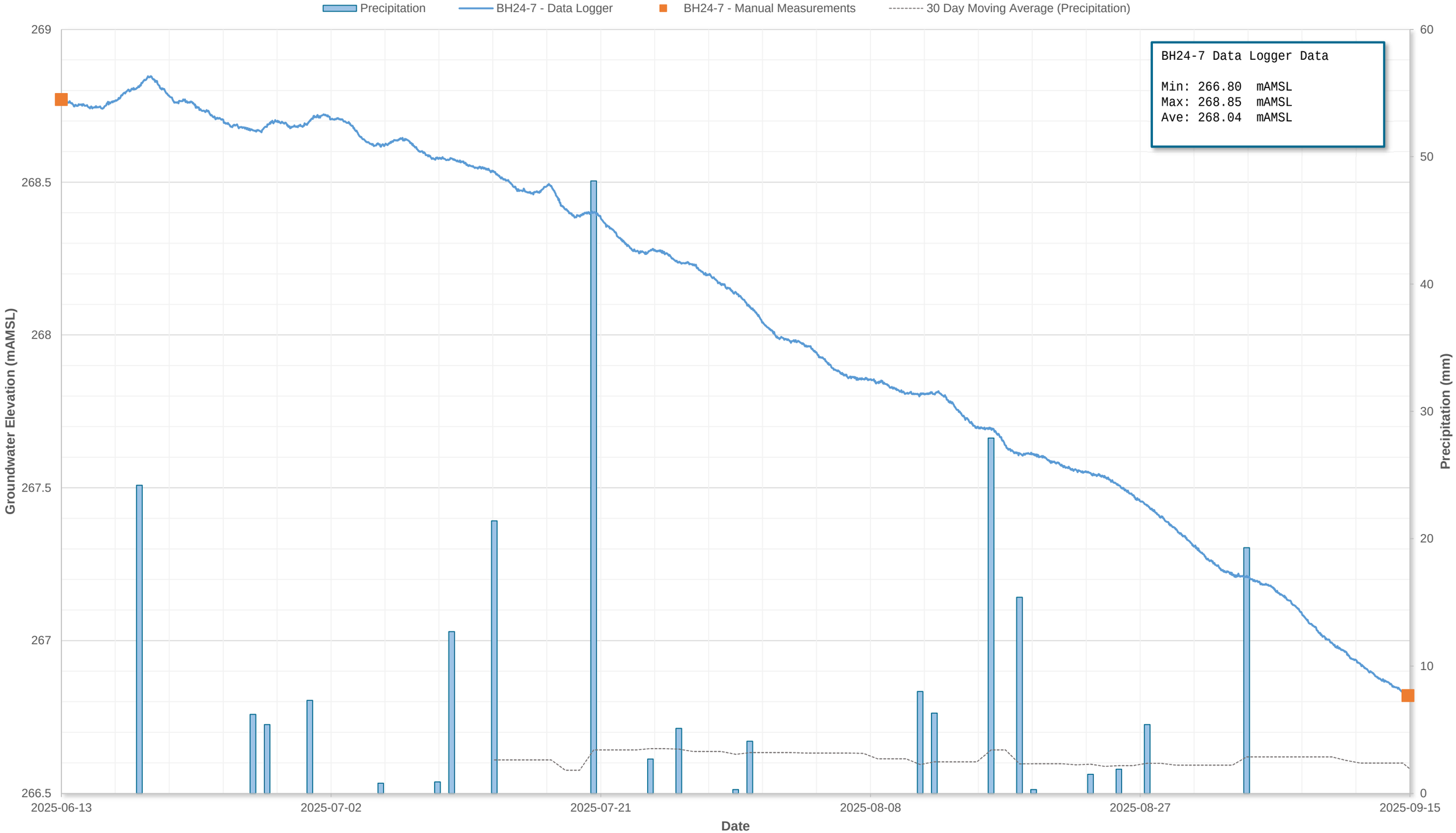
Hydrograph 1: Groundwater Elevations (mAMSL) - BH24-1



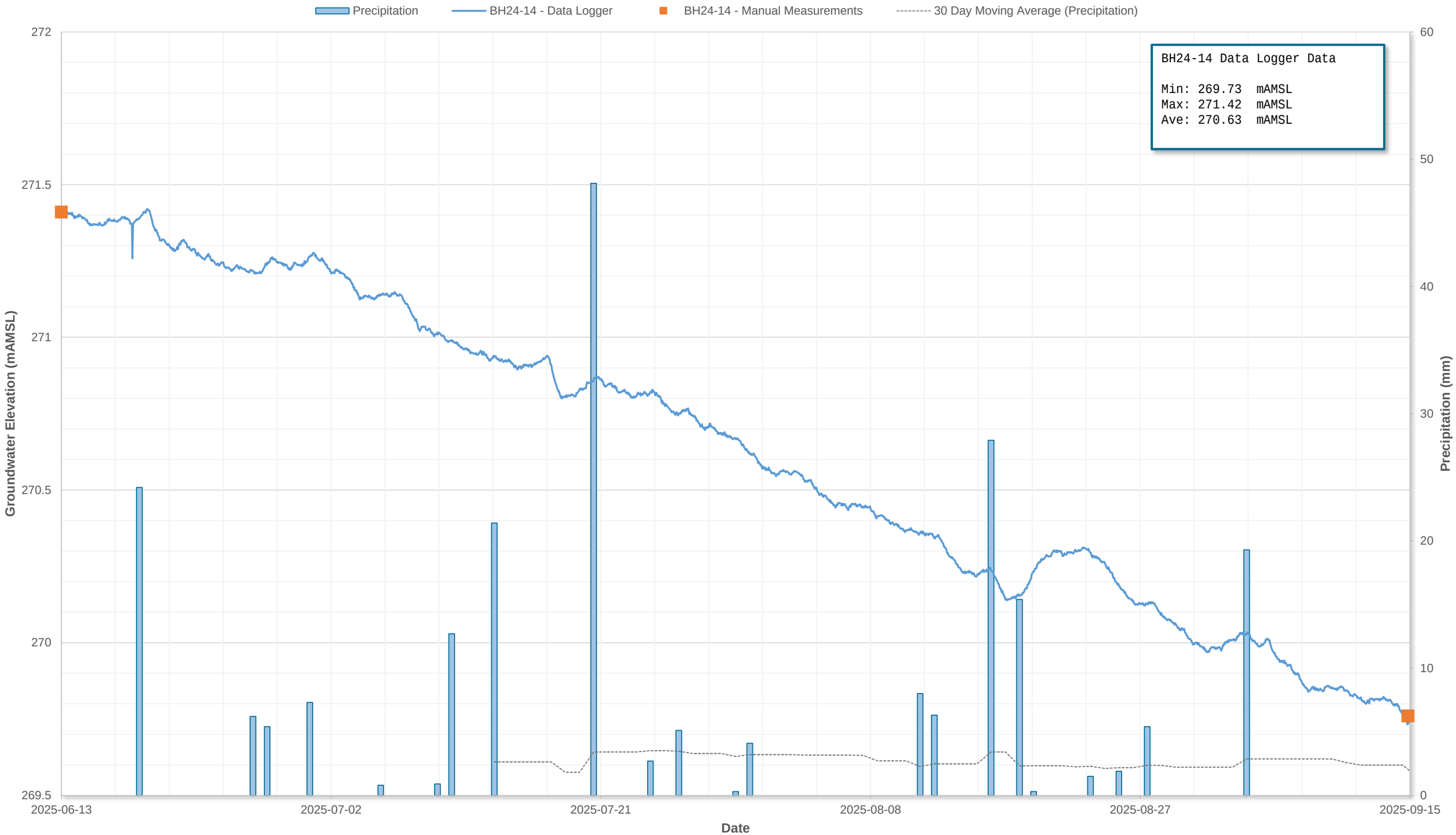
Hydrograph 2: Groundwater Elevations (mAMSL) - BH24-3



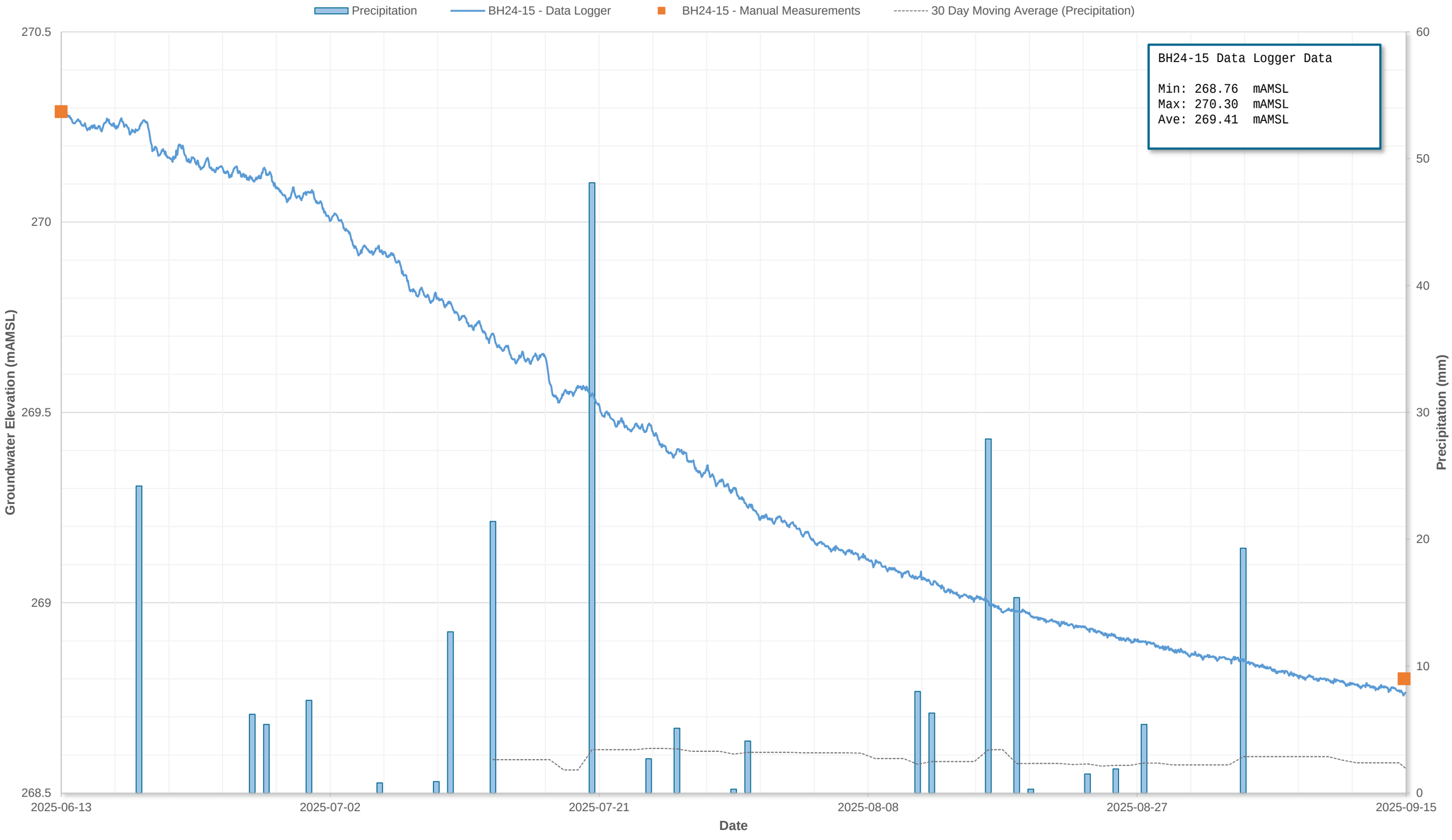
Hydrograph 3: Groundwater Elevations (mAMSL) - BH24-7



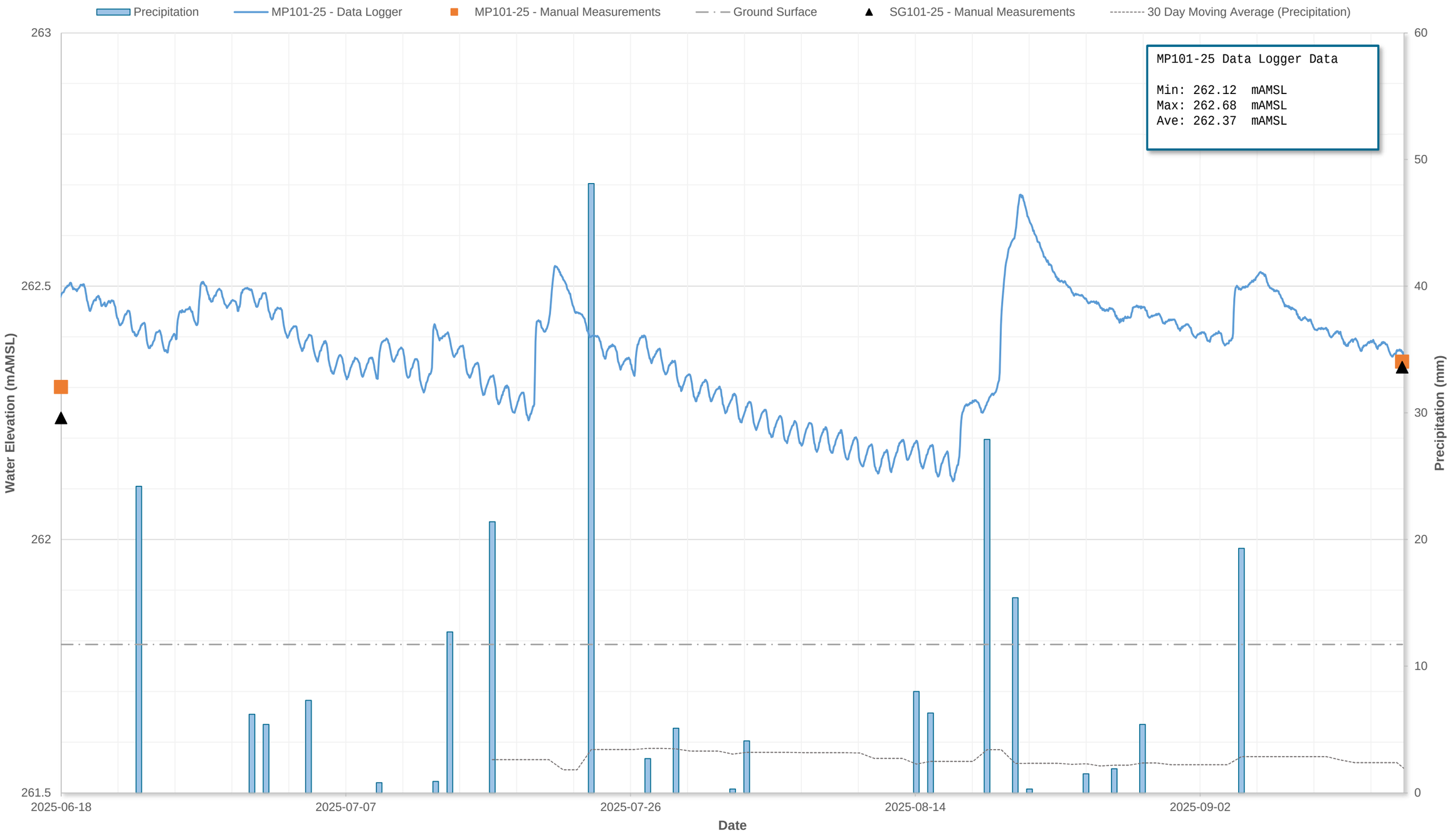
Hydrograph 4: Groundwater Elevations (mAMSL) - BH24-14



Hydrograph 5: Groundwater Elevations (mAMSL) - BH24-15



Hydrograph 6: Water Elevations (mAMSL) - MP101-25/SG101-25



Appendix B

Water Balance Calculations

Parameter	Units	Pre-Development		Post-Development (Unmitigated)		
Area	m^2	359409		359409		
Average Annual Precipitation P	mm	879		879		
Annual Evapotranspiration ET	mm	679		679		
Surface/ Ground Cover	-	Impervious Hardscape (Including Buidling Footprint and Hardsurfaces)	Pervious Softscape (Excluding Greenbelt)	Impervious Hardscape	Building Footprint	Pervious Softscape (Excluding Greenbelt and Non-construction Area)
Area	m^2	4,386	355,023	136,811	158,167	64,431
Precipitation, P	m/year	0.879	0.879	0.879	0.879	0.879
Evaporation E	m/year	0.088	0.000	0.088	0.088	0.000
Evapotranspiration, ET	m/year	0.000	0.679	0.000	0.000	0.679
Water Surplus, WS	m/year	0.791	0.200	0.791	0.791	0.200
Topography Factor (Rolling Land)	-	-	0.20	-	-	0.20
Soils Factor (tight impervious clay)		-	0.10	-	-	0.10
Ground Cover Factor (Cultivated)	-	-	0.10	-	-	0.10
Infiltration Factor (Sum)	-	0.00	0.40	0.00	0.00	0.40
Infiltration, I	m/year	0.000	0.080	0.000	0.000	0.080
Runoff, Ro	m/year	0.791	0.120	0.791	0.791	0.120
Annual Volumes						
Precipitation, P	m^3/year	3,855	312,065	120,257	139,029	56,635
Evaporation, E	m^3/year	386	0	12,026	13,903	0
Evapotranspiration, ET	m^3/year	0	241,061	0	0	43,748
Infiltration, I	m^3/year	0	28,402	0	0	5,154
Runoff, Ro	m^3/year	3,470	42,603	108,231	125,126	7,732
Site Totals						
Precipitation, P	m^3/year	315,921		315,921		
Evaporation, E	m^3/year	386		25,929		
Evapotranspiration, ET	m^3/year	241,061		43,748		
Infiltration, I	m^3/year	28,402		5,154		
Runoff, Ro	m^3/year	46,073		241,089		