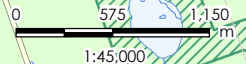
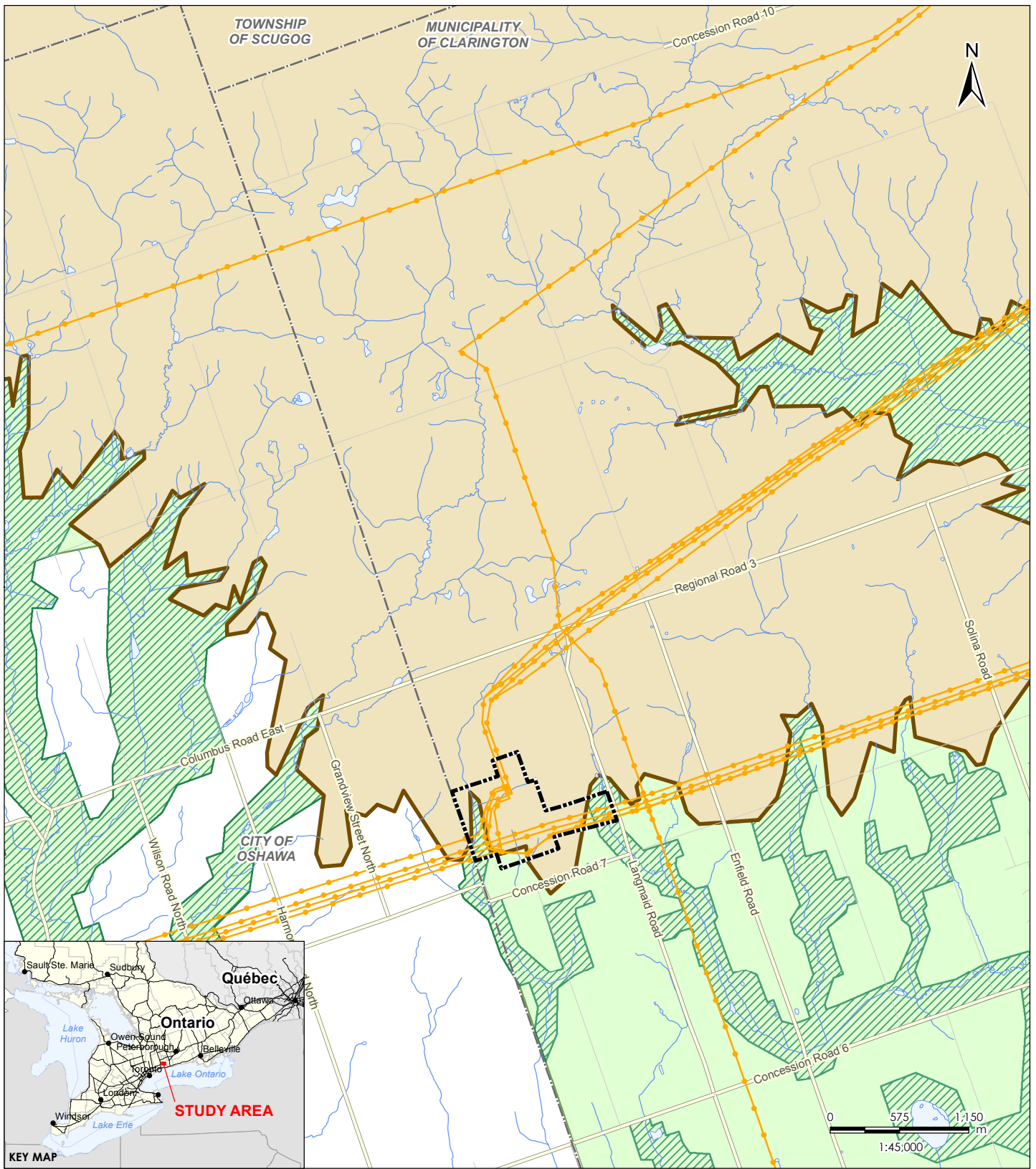


APPENDIX A: FIGURES

\\C:\01004-01\01\609\active\160900764\Planning\drawing\WXD\Hydrogeology_2017_MonitoringReport\160900764_2017MonRepl_Fig01_ProjectLocation.mxd
 Revised: 2017-11-21 By: pmoser



November 2017
160900764



- Legend**
- Project Area
 - Municipal Boundary
 - Utility Line
 - Major Road
 - Local Road
 - Waterbody
 - Watercourse
 - Oak Ridges Moraine
 - Greenbelt - Natural Heritage System
 - Greenbelt - Protected Countryside

Client/Project
 2017 Annual Groundwater and
 Surface Water Monitoring Report,
 Hydro One - Clarington
 Transformer Station

- Notes**
- Coordinate System: NAD 1983 UTM Zone 17N
 - Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.

Figure No.
1
 Title
Project Location



- Legend**
- Project Area
 - Station Site
 - Borehole (Stantec, 2015)
 - Monitoring Well (Stantec, 2013, 2015)
 - Piezometer (Stantec, 2013)
 - Piezometer (Stantec, 2017)
 - Test Pit (Stantec, 2013)
 - Surface Water Monitoring (Stantec, 2013)
 - Monitoring Well (EXP, 2012)
 - Monitoring Well (Inspec-Sol, 2012) - Abandoned
 - Borehole (Inspec-Sol, 2012)
 - Borehole (EXP, 2012)
 - Topographic Contour (mAMSL)
 - Previously Existing Infrastructure
 - Watercourse
 - Wetland

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
 3. Orthoimagery © First Base Solutions, 2017.
 4. Topography derived from the MNR Digital Elevation Model - Version 2.0.0 - Provincial Tiled Dataset (DEM) © Queen's Printer for Ontario, 2006.
 5. Wetland boundary as delineated by Stantec (Natural Heritage Existing Conditions Report, 2012).

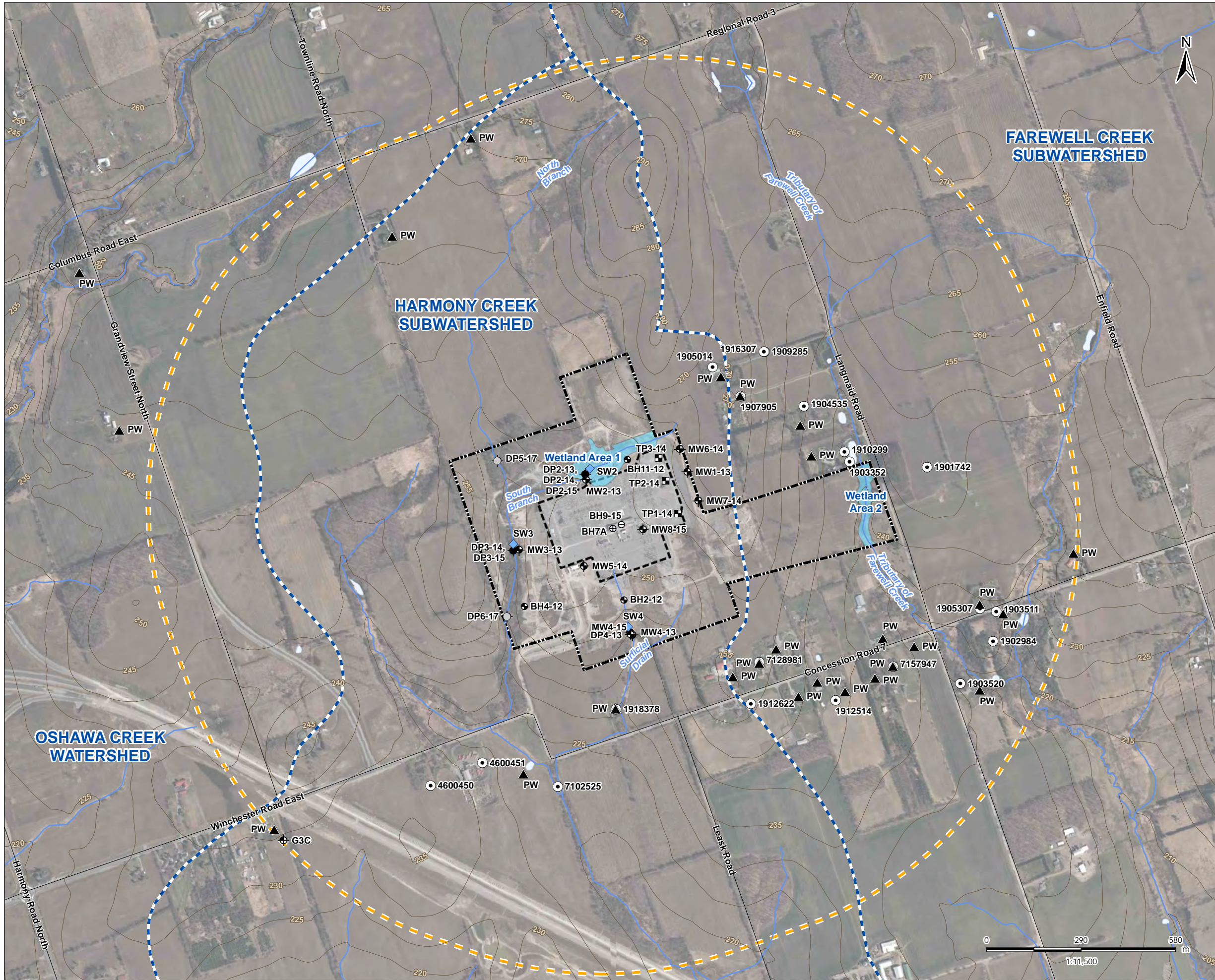
November 2017
160900764

Client/Project
2017 Annual Groundwater and
Surface Water Monitoring Report,
Hydro One - Clarington Transformer Station

Figure No.
2

Title
Project Site Plan

\\Ca1004-401\01609\active\160900764\Planning\drawing\MXD\Hydrogeology\2017_MonitoringReport\160900764_2017MonRept_Fig02_ProjectSitePlan.mxd
 Revised: 2017-11-21 By: pmoser



- Legend**
- Project Area
 - Station Site
 - Private Well Monitoring Area
 - Drainage Catchment
 - MOECC Water Well Record
 - Borehole (Stantec, 2015)
 - Monitoring Well (Stantec, 2013, 2015)
 - Piezometer (Stantec, 2013)
 - Piezometer (Stantec, 2017)
 - Test Pit (Stantec, 2013)
 - Surface Water Monitoring (Stantec, 2013)
 - Monitoring Well (EXP, 2012)
 - Monitoring Well (Inspec-Sol, 2012) - Abandoned
 - Monitoring Well (MTO, 2009)
 - Private Well
 - Topographic Contour (mAMSL)
 - Watercourse
 - Waterbody
 - Wetland

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
 3. Orthoimagery © First Base Solutions, 2017.
 4. MOECC Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.

November 2017
160900764

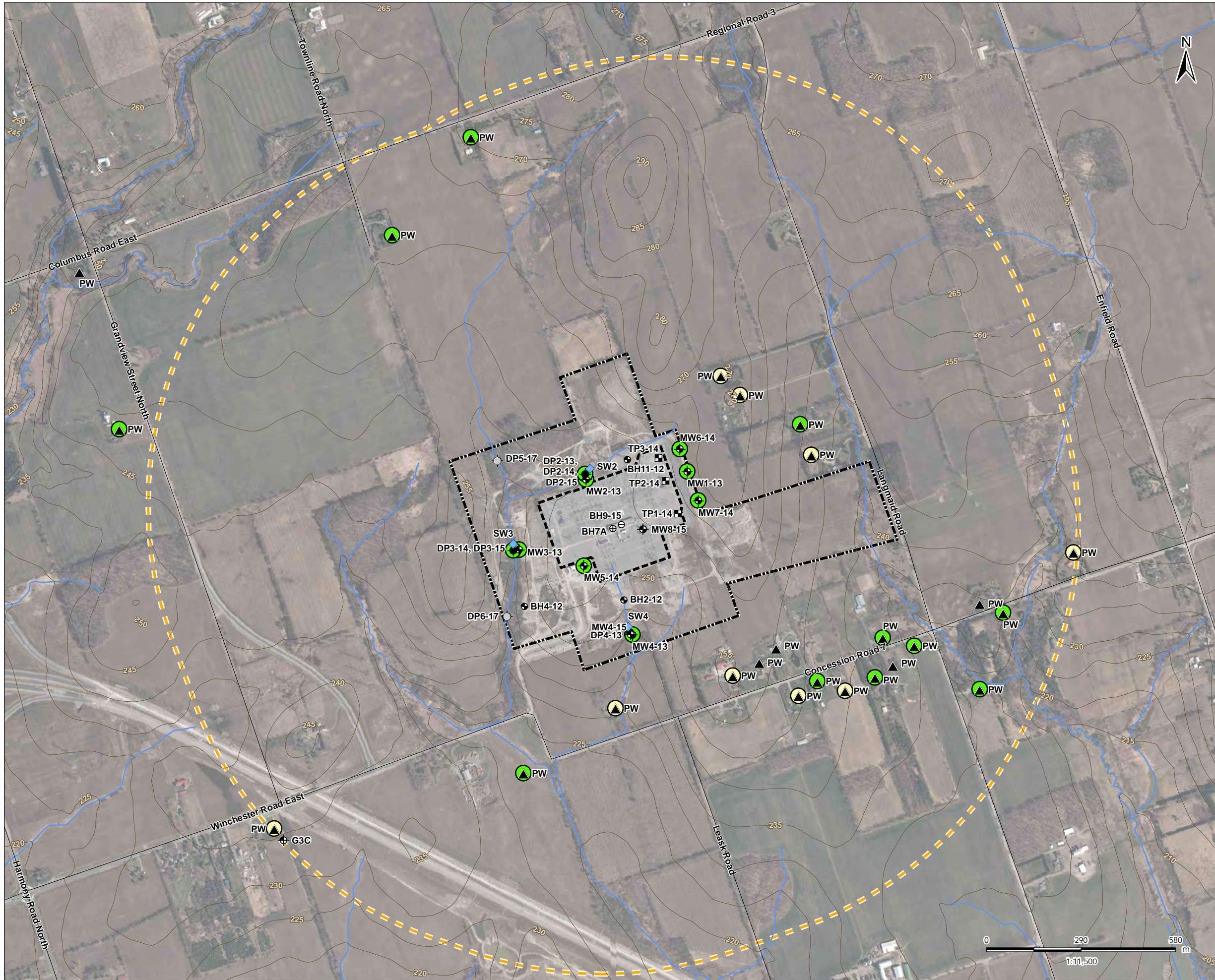
Client/Project
2017 Annual Groundwater and Surface Water Monitoring Report,
Hydro One - Clarington Transformer Station

Figure No.
3

Title
Site Setting

\\Cd1004-01\01609\active\160900764\Planning\Drawing\Drawing\160900764_Hydrogeology\2017_MonitoringReport\160900764_2017MonRept_Fig03_SiteSetting.mxd
 Revised: 2017-11-21 By: pmoser

- Legend**
- Project Area
 - Station Site
 - Private Well Monitoring Area
 - Borehole (Stantec, 2015)
 - Monitoring Well (Stantec, 2013, 2015)
 - Piezometer (Stantec, 2013)
 - Piezometer (Stantec, 2017)
 - Test Pit (Stantec, 2013)
 - Surface Water Monitoring (Stantec, 2013)
 - Monitoring Well (EXP, 2012)
 - Monitoring Well (Inspec-Sol, 2012)
 - Monitoring Well (MTO, 2009)
 - Private Well
 - Topographic Contour (mAMSL)
 - Watercourse
 - Well Screened within Thorncliffe Formation
 - Well Screened up to 16 m BGS



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
 3. Orthoimagery © First Base Solutions, 2017.
 4. MOECC Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.

November 2017
160900764

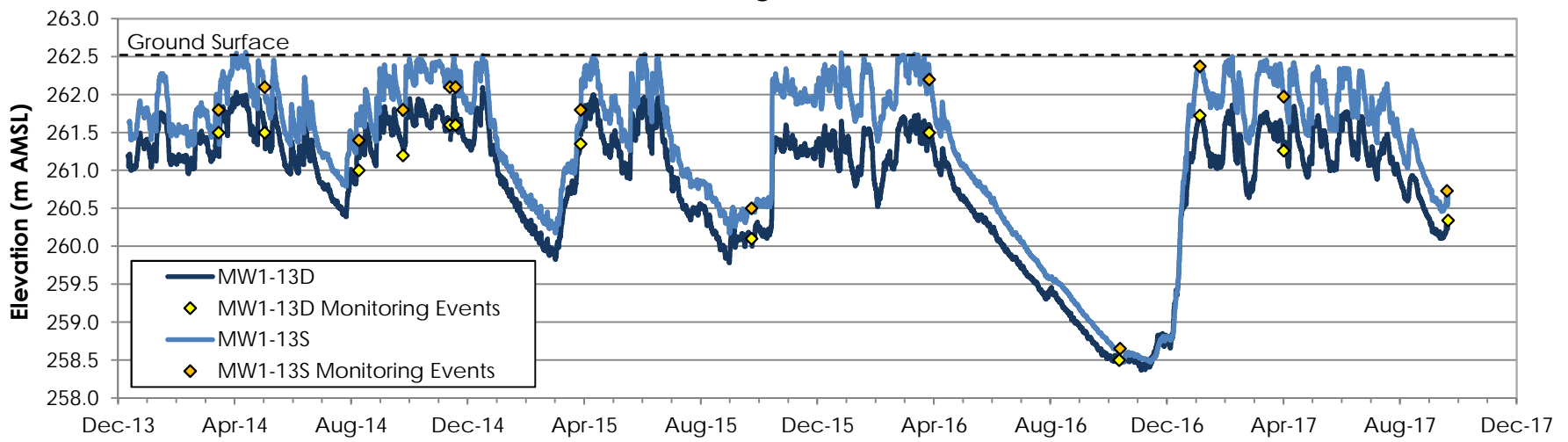
Client/Project
2017 Annual Groundwater and Surface Water Monitoring Report, Hydro One - Clarington Transformer Station

Figure No.
4

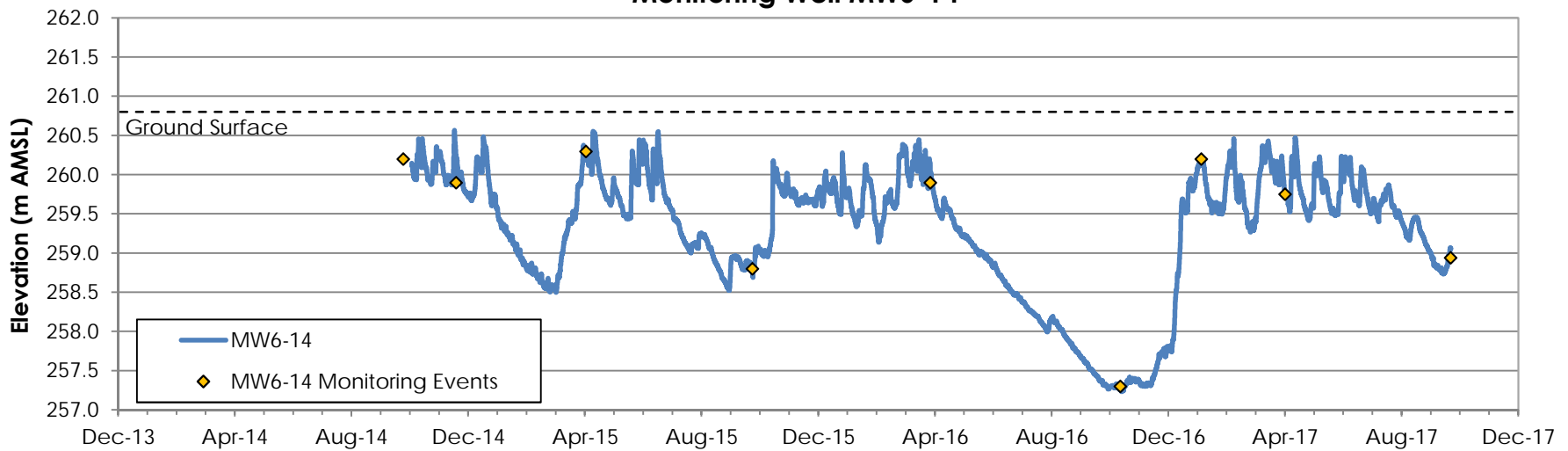
Title
Groundwater Monitoring Locations

\\Cd1004-01\01609\active\160900764\Planning\Drawing\XMD\Hydrogeology\2017_MonitoringReport\160900764_2017MonRep_Fig04_GWMonitoringLocs.mxd
 Revised: 2017-11-21 By: pmoser

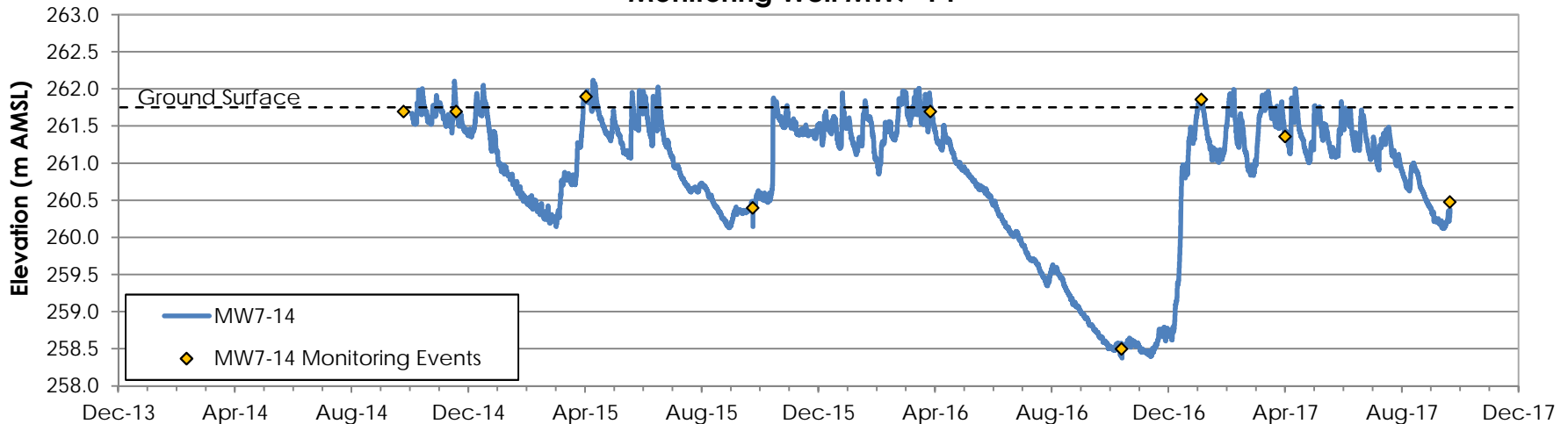
Monitoring Well MW1-13



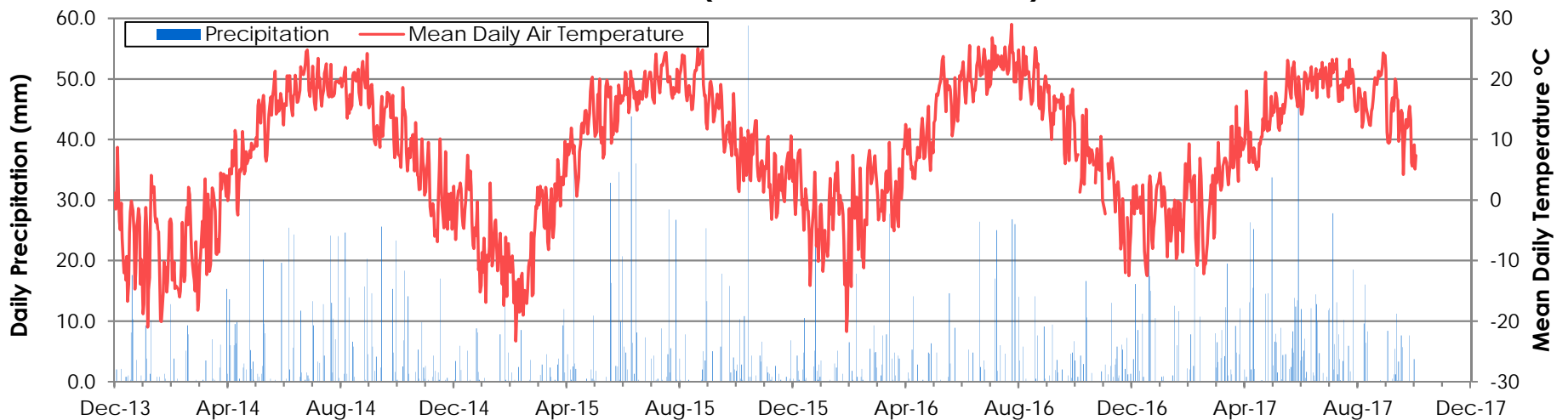
Monitoring Well MW6-14



Monitoring Well MW7-14



Climate Data (Oshawa Climate Station)



Notes:

Precipitation and temperature data were obtained from Environment Canada for the Oshawa Climate Station. Climate data gaps were filled using data from the Blackstock and Oshawa WPCP Climate Stations, as well as the Oshawa Airport data from the Weather Network website.

Client/Project

Hydro One Networks Inc.
2017 Annual Groundwater and Surface
Water Monitoring Report

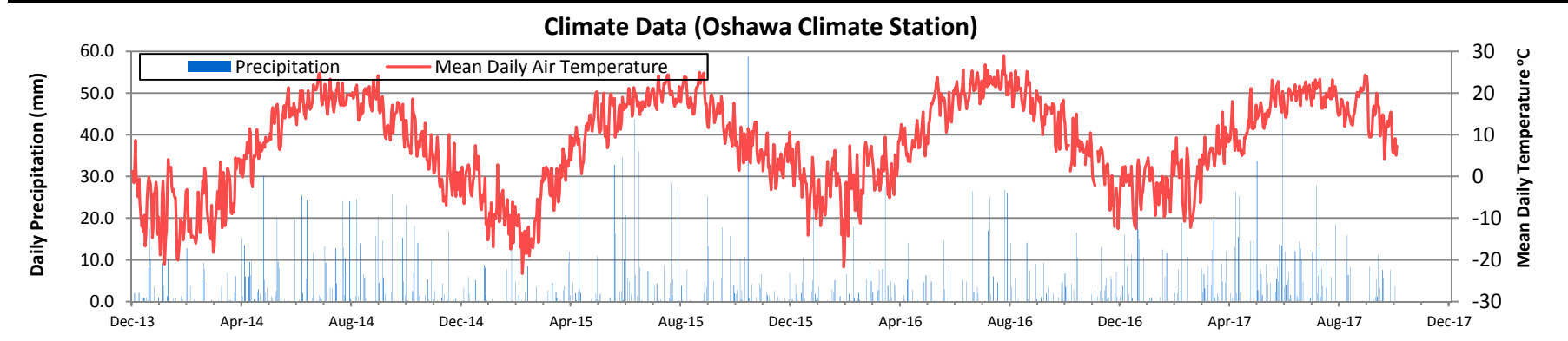
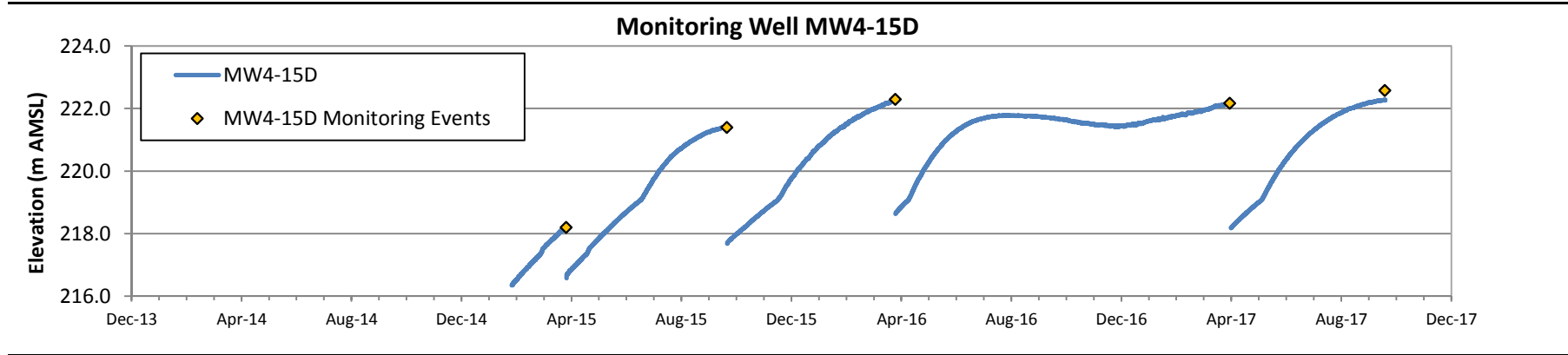
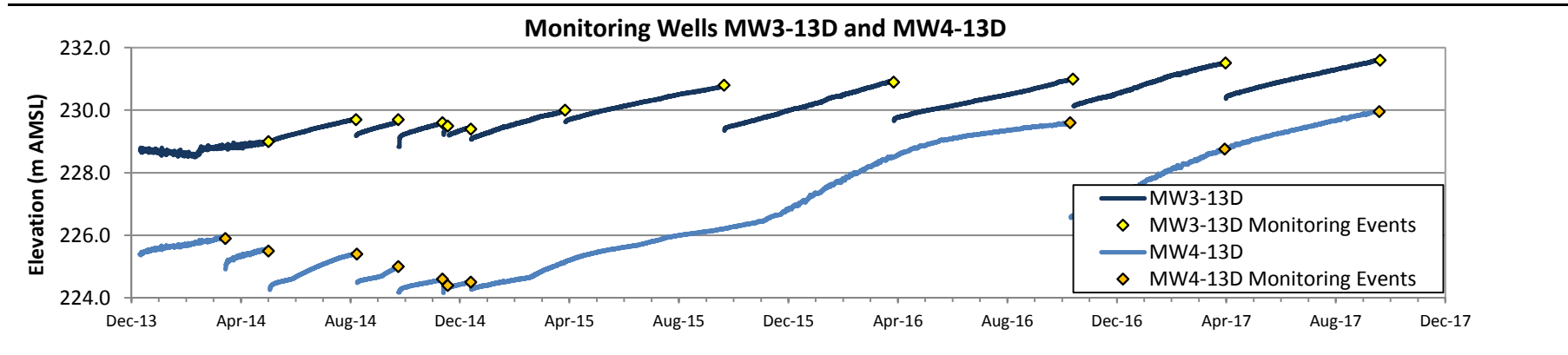
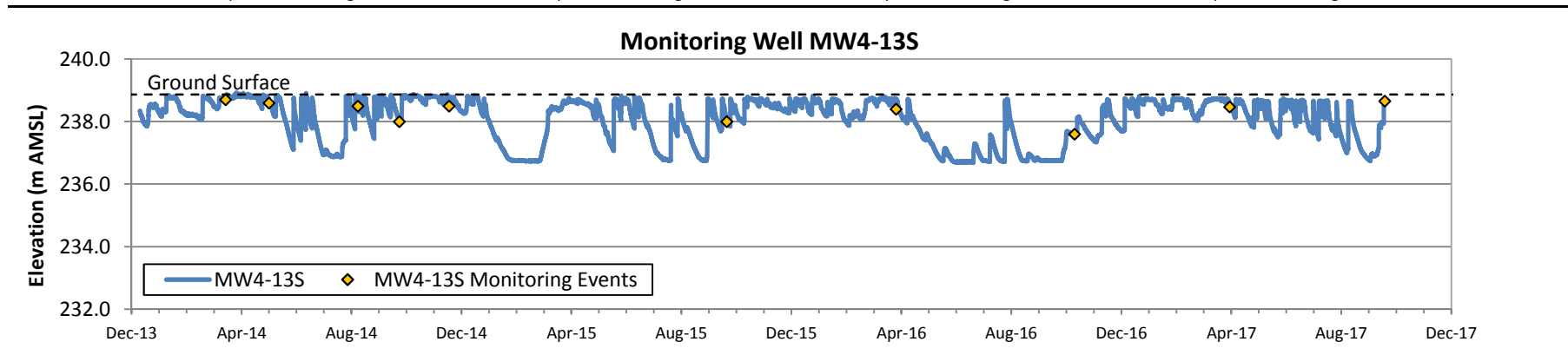
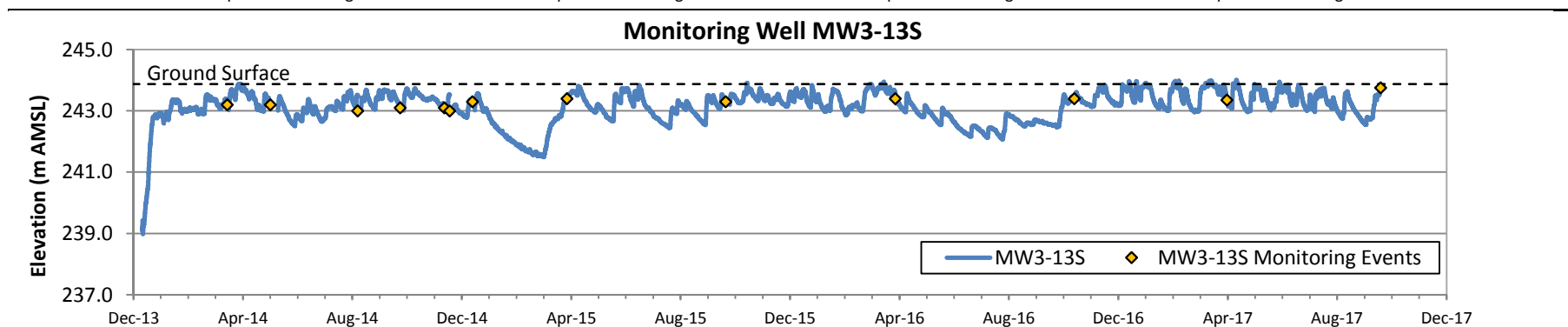
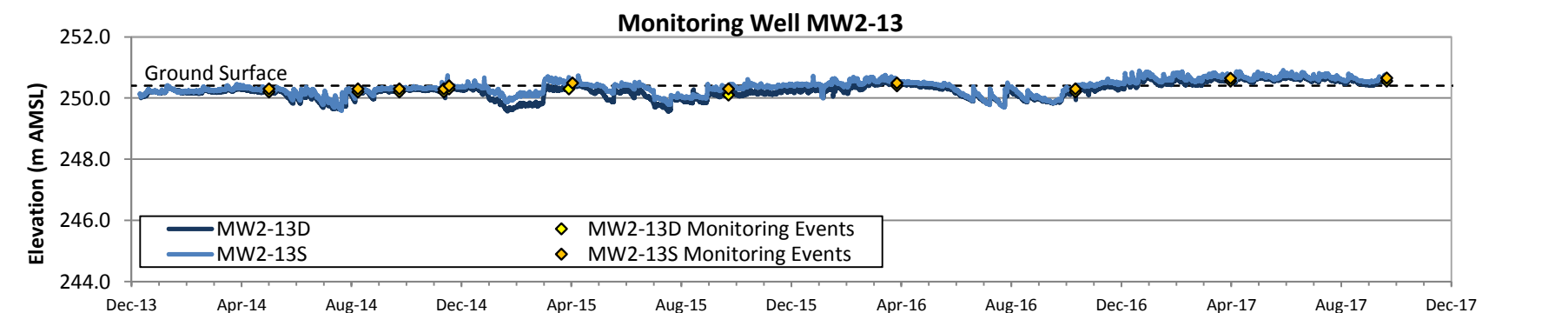
Figure No.

5

Title

**Hydrographs
Monitoring Wells MW1, MW6, and MW7**





Notes:

Precipitation and temperature data were obtained from Environment Canada for the Oshawa Climate Station. Climate data gaps were filled using data from the Blackstock and Oshawa WPCP Climate Stations, as well as the Oshawa Airport data from the Weather Network website.

Client/Project

Hydro One Networks Inc.
2017 Annual Groundwater and Surface Water
Monitoring Report

Figure No.

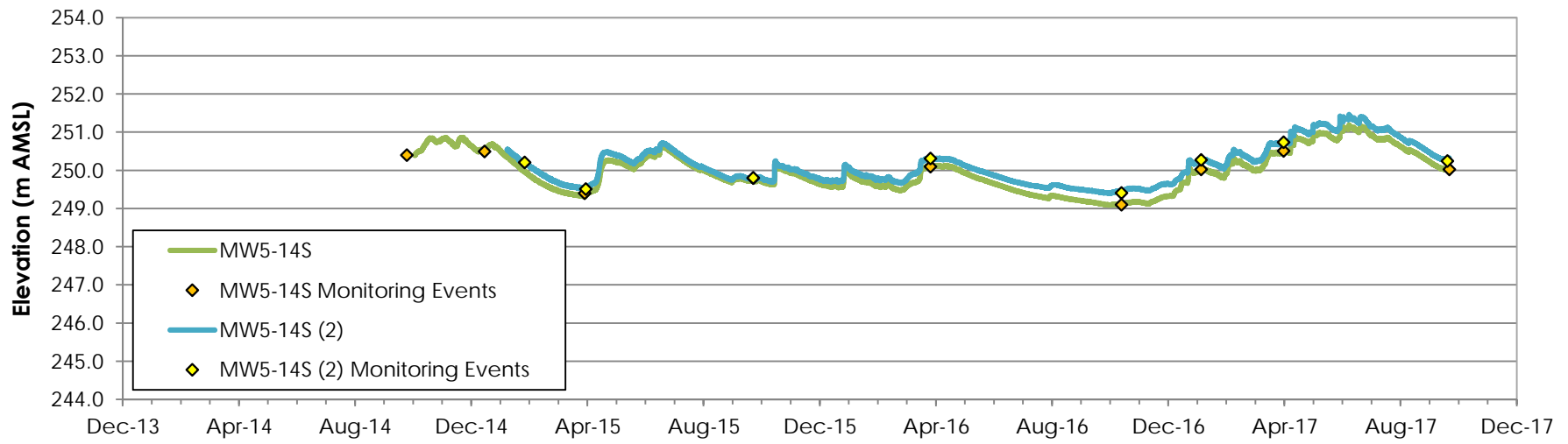
6

Title

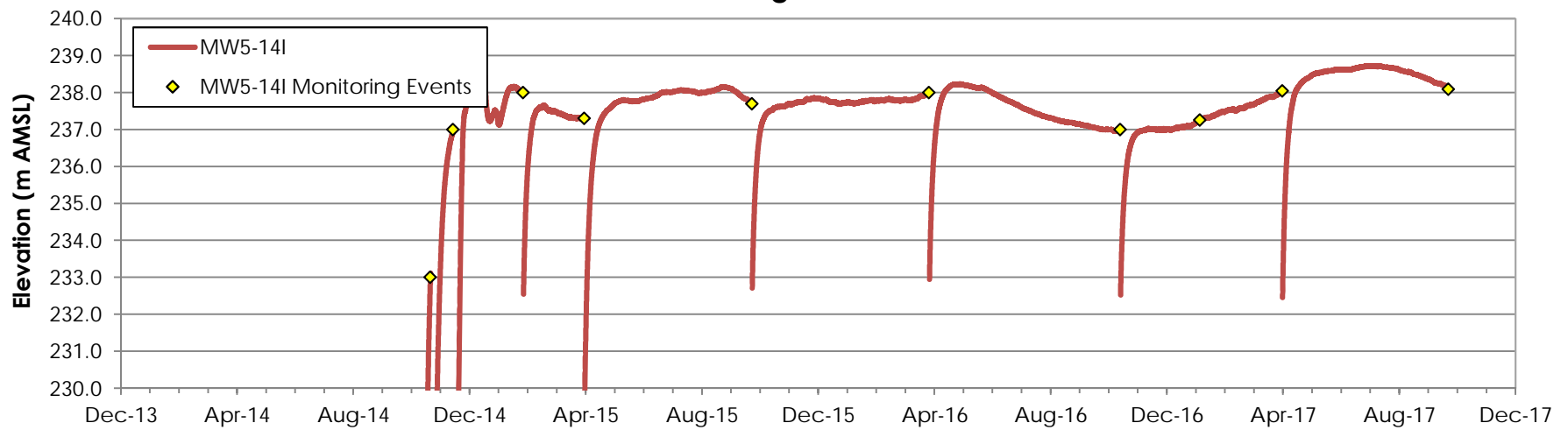
Hydrographs
Monitoring Wells MW2, MW3, and MW4



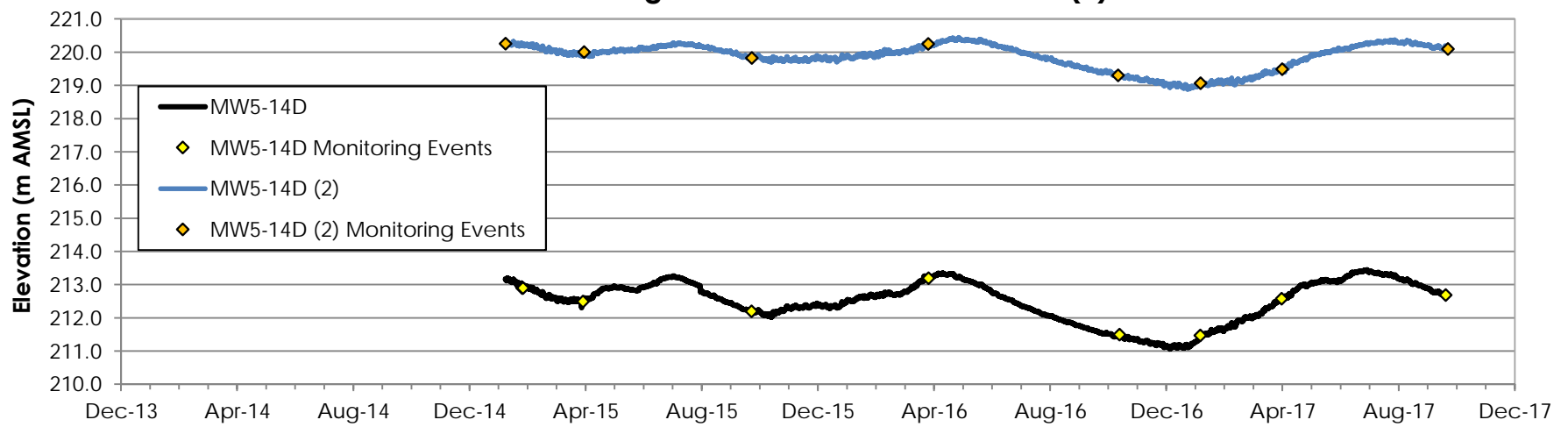
Monitoring Well MW5-14S and MW5-14S (2)



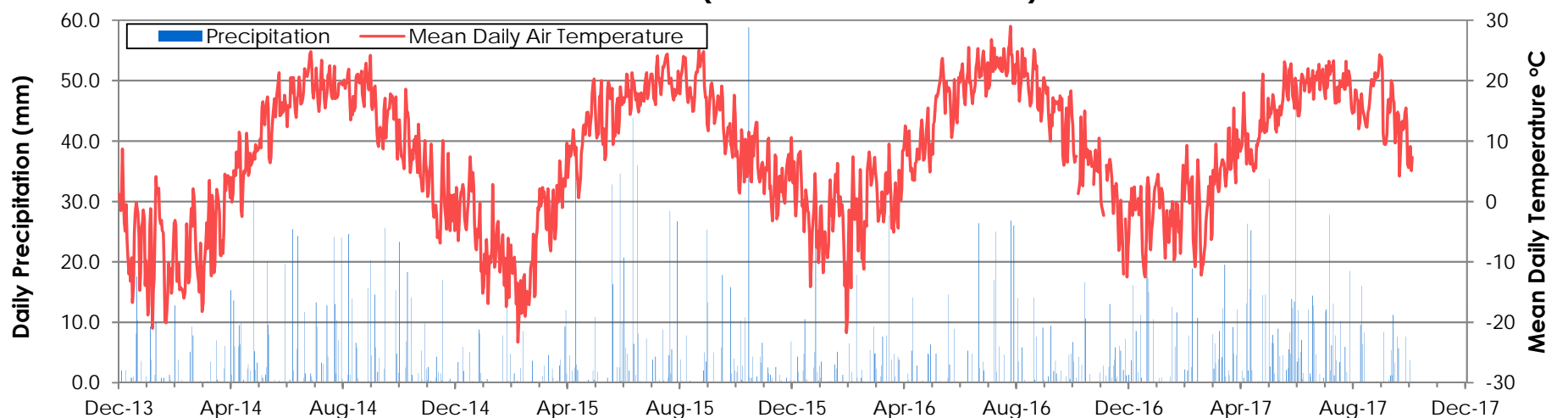
Monitoring Well MW5-14I



Monitoring Well MW5-14D and MW5-14D (2)



Climate Data (Oshawa Climate Station)



Notes:

Precipitation and temperature data were obtained from Environment Canada for the Oshawa Climate Station. Climate data gaps were filled using data from the Blackstock and Oshawa WPCP Climate Stations, as well as the Oshawa Airport data from the Weather Network website.

Client/Project

Hydro One Networks Inc.
2017 Annual Groundwater and Surface
Water Monitoring Report

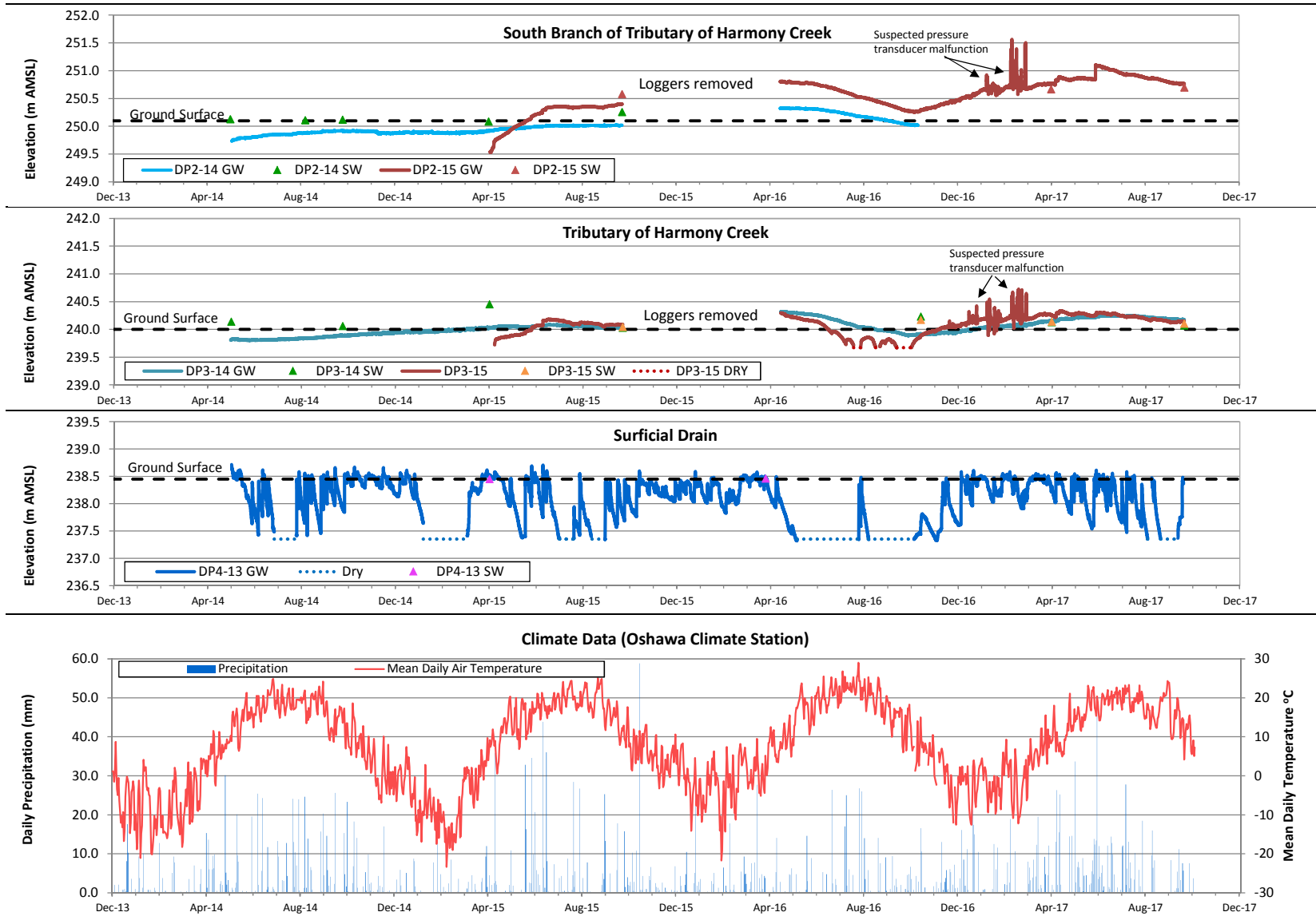
Figure No.

7

Title

**Hydrographs
Monitoring Well MW5**





Notes:

Precipitation and temperature data were obtained from Environment Canada for the Oshawa Climate Station. Climate data gaps were filled using data from the Blackstock and Oshawa WPCP Climate Stations, as well as the Oshawa Airport data from the Weather Network website.

Client/Project

Hydro One Networks Inc.
2017 Annual Groundwater and Surface Water Monitoring Report

Figure No.

8

Title

Hydrographs
Drivepoints



- Legend**
- Project Area
 - Station Site
 - Private Well Monitoring Area
 - 250.2** Groundwater Elevation (mAMSLS)
 - Private Well
 - Borehole (Stantec, 2015)
 - Monitoring Well (Stantec, 2013, 2015)
 - Piezometer (Stantec, 2013)
 - Piezometer (Stantec, 2017)
 - Test Pit (Stantec, 2013)
 - Surface Water Monitoring (Stantec, 2013)
 - Monitoring Well (EXP, 2012)
 - Monitoring Well (Inspec-Sol, 2012) - Abandoned
 - Borehole (Inspec-Sol, 2012)
 - Monitoring Well (MTO, 2009)
 - Private Well
 - Topographic Contour (mAMSLS)
 - Watercourse
 - Groundwater Flow Direction
 - Interpreted Shallow Groundwater Contour (mASL)
 - Watershed Divide
 - Wetland
 - Area Downgradient from Clarington TS Station Site

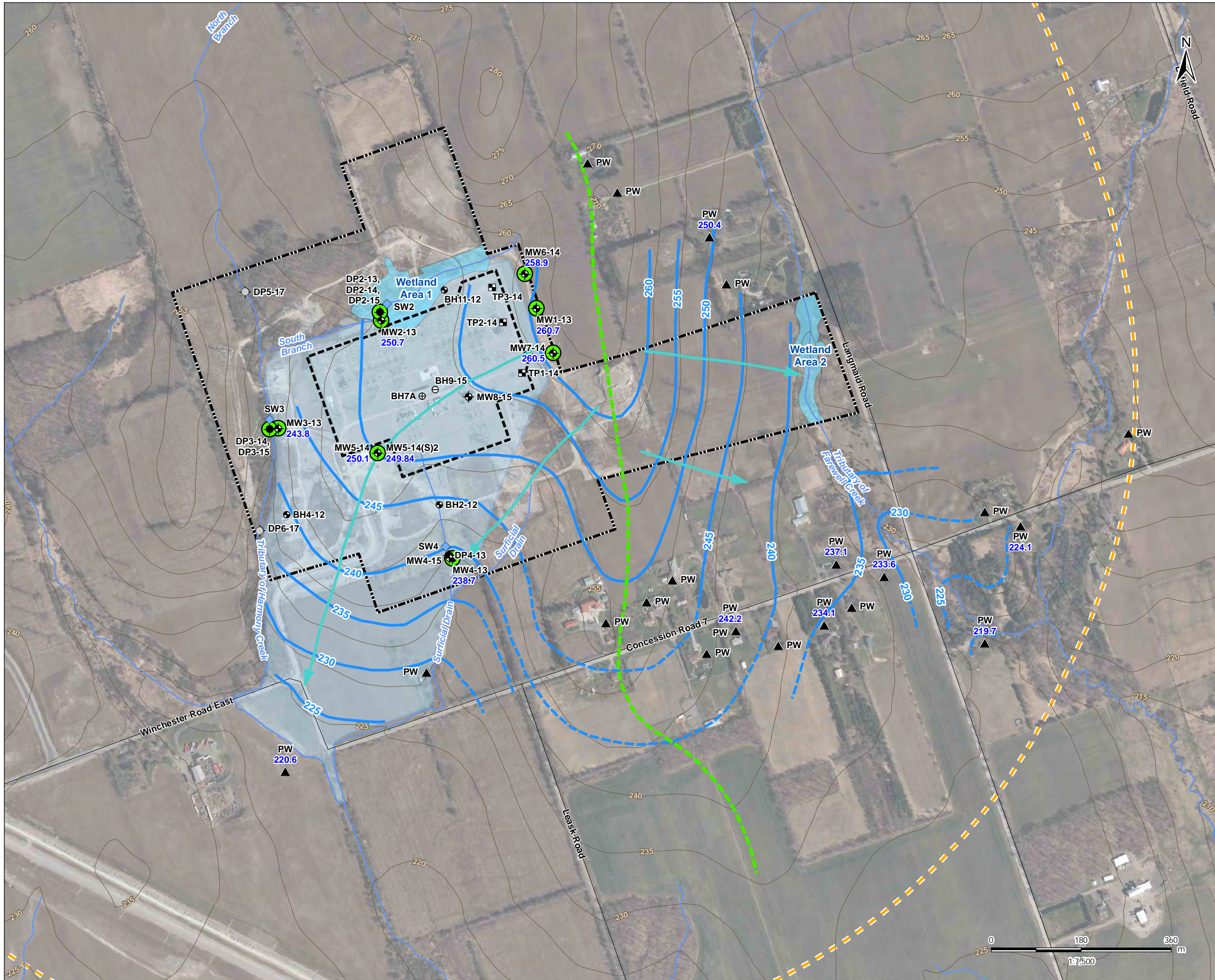
- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
 3. Orthoimagery © First Base Solutions, 2017.
 4. Water levels for wells are representative of levels between October 16 and October 18, 2017.

January 2018
160900764

Client/Project
2017 Annual Groundwater and Surface Water Monitoring Report, Hydro One - Clarington Transformer Station

Figure No.
9

Title
Groundwater Levels Shallow Overburden - October 2017



\\Cd1004-01\work_group\01609\active\160900764\Planning\drawing\MXD\Hydrogeology\2017_MonitoringReport\160900764_2017MonRep_Fig09_GW_ShallowOverburden_Oct2017.mxd
 Revised: 2018-01-03 By: pmoser

- Legend
- Project Area
 - Station Site
 - Private Well Monitoring Area
 - 250.1 Groundwater Elevation (mAMSL)
 - PW Private Well
 - Borehole (Stantec, 2015)
 - Monitoring Well (Stantec, 2013, 2015)
 - Piezometer (Stantec, 2013)
 - Piezometer (Stantec, 2017)
 - Test Pit (Stantec, 2013)
 - Surface Water Monitoring (Stantec, 2013)
 - Monitoring Well (EXP, 2012)
 - Monitoring Well (Inspec-Sol, 2012)
 - Borehole (Inspec-Sol, 2012)
 - Monitoring Well (MTO, 2009)
 - Private Well
 - Well Screened Within Thorncliffe Formation
 - Topographic Contour (mAMSL)
 - Watercourse
 - Waterbody



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
 3. Orthoimagery © First Base Solutions, 2017.
 4. Water levels for wells are representative of levels between October 16 and October 18, 2017.

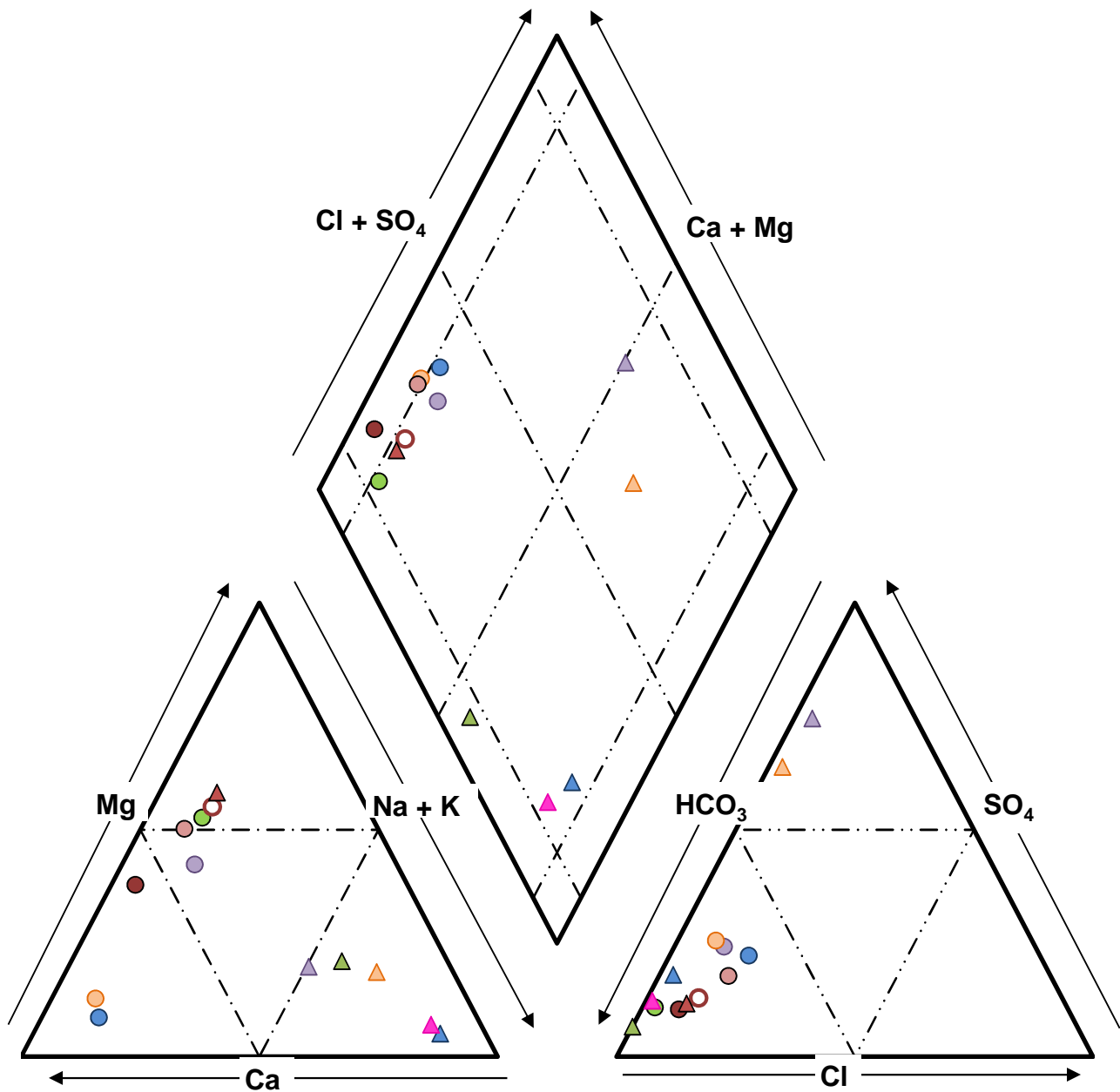
December 2017
160900764

Client/Project
2017 Annual Groundwater and Surface Water Monitoring Report, Hydro One - Clarington Transformer Station

Figure No.
10

Title
Groundwater Elevations
Thorncliffe Formation - October 2017

\\Cd1004-01\01609\active\160900764\Planning\Drawing\Drawing\MXD\Hydrogeology\2017_MonitoringReport\160900764_2017MonRep\Fig10_GW_Thorncliffe_Oct2017.mxd
 Revised: 2017-12-22 By: pmoser



- MW1-13S ● MW2-13S ● MW3-13S ● MW4-13S ● MW5-14S ● MW6-14 ● MW7-14
- ▲ MW1-13D ▲ MW2-13D ▲ MW3-13D ▲ MW4-13D ▲ MW5-14I ▲ MW5-14D

Water quality data from groundwater samples were collected on October 16, 2017 at MW4-13S/D, MW5-14S, October 17, 2017 at MW1-13S/D, MW3-13D, MW5-14I, MW7-14, October 18, 2017 at MW2-13S/D, MW3-13S, MW5-14D, October 19, 2017 at MW6-14.

Client/Project

Hydro One Networks Inc.
2017 Annual Groundwater and Surface Water Monitoring Report

Figure No.

11

Title

Water Chemistry - Piper Plot

