

JULY 21, 2022

PROJECT NO: 1923-5641

SENT VIA: EMAIL

2774476 Ontario Inc.
3976 Portage Road, Unit 2
Niagara Falls, ON L2J 2K9

Attention: Ryan Rebello

**RE: GROUNDWATER MONITORING REPORT
UNION STREET RESIDENTIAL DEVELOPMENT
MUNICIPALITY OF MEAFORD, GREY COUNTY**

Dear Ryan,

Please find attached the results of the groundwater monitoring program conducted over the past twelve months between April 2021 and April 2022. Included in the summary package are figures indicating the well locations, monitoring well hydrographs in relation to seasonal precipitation and the manual measurements collected as part of the periodic site visits for data logging device calibration. The RAW data files associated with the data logging devices are available for digital transfer upon request.

Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.



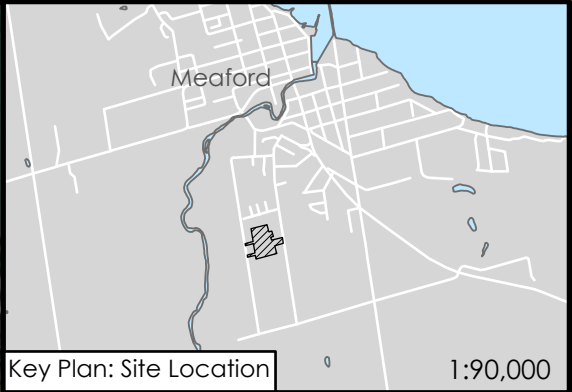
Evan Finbow, P.Geo.
Geoscientist
EF/

Enclosure

Figure 1 – Site Location Plan
Figure 2 – Monitoring Well Locations
Appendix A – Monitoring Well Hydrographs
Appendix B – Well Construction Logs
Appendix C – Manual Measurements

J:\1900\1923-Royal Lepage\5641-425 Union St\Reports\Hydrogeology\GW Monitoring Memo\2022.07.21 Groundwater Monitoring Letter.docx

FIGURES



Legend

- Property Limits
- Roads

DRAWING NOTES:
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THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION '

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project:

425 Union Street

Drawing:

Site Location Plan



Drawn: J.M	Design: J.M	Project No. 1923 - 5641	
Date: 2022-06-09	GCS: WSG 1984	Scale: 1:15,000	Dwg. FIG. 1



Basemap Sources: Maxar, Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRGan, Parks Canada



Legend

Wells

Property Limits

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Project:

425 Union Street

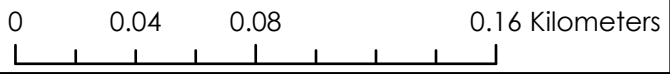
Drawing:

Well Locations

CROZIER
CONSULTING ENGINEERS

Drawn: J.M	Design: J.M	Project No. 1923 - 5641	
Date: 2022-06-09	GCS: WSG 1984	Scale: 1:2,500	Dwg. FIG. 2

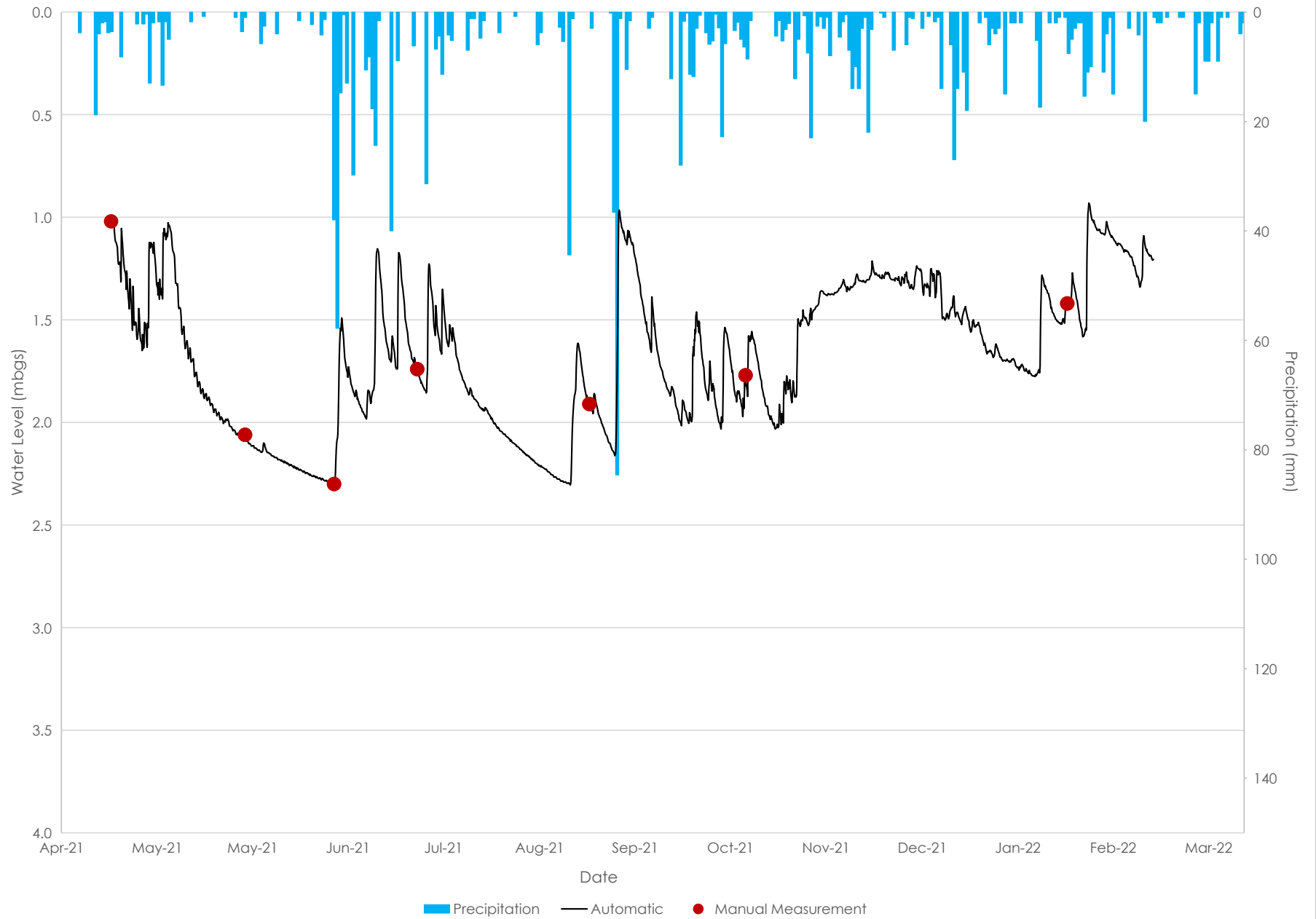
Basemap Sources: Maxar, Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



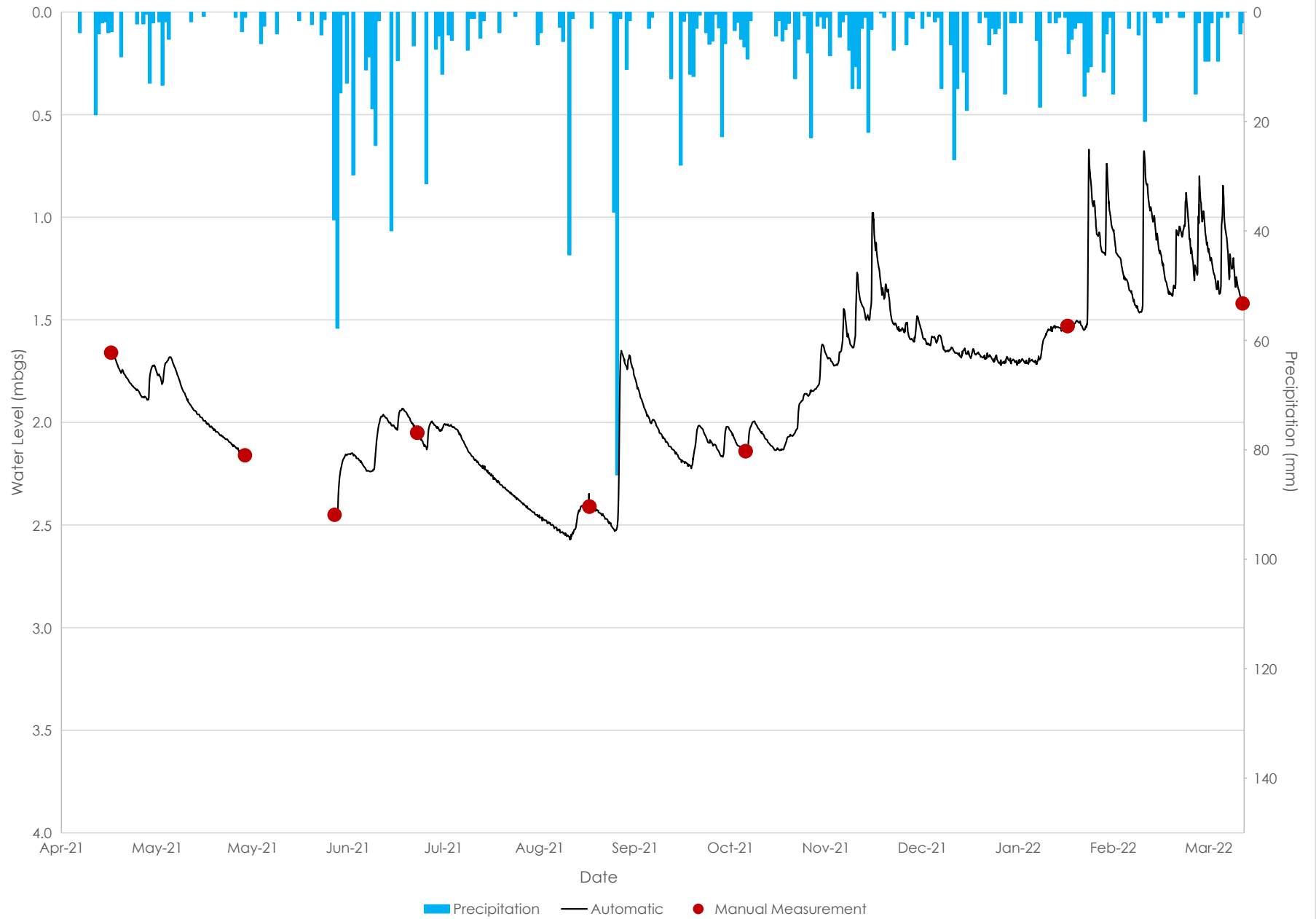
APPENDIX A

Monitoring Well Hydrographs

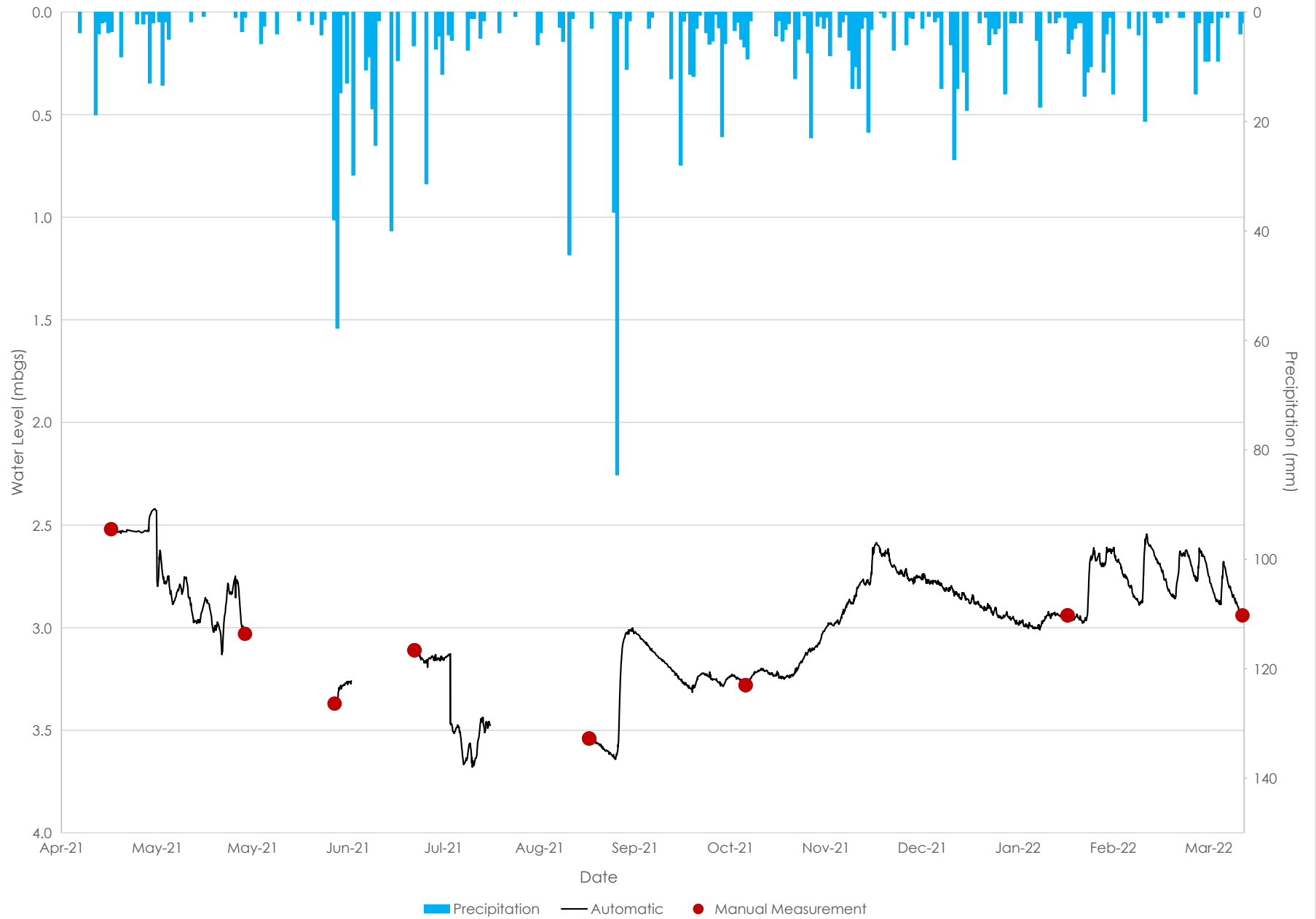
Meaford Union Street - Ground Water Monitoring Data (MW21-1)



Meaford Union Street - Ground Water Monitoring Data (MW21-4)



Meaford Union Street - Ground Water Monitoring Data (MW21-4)



APPENDIX B

Well Construction Logs



WELL CONSTRUCTION REPORT (WELL #21-1)

REPORT NO.: 3 of 3

PROJECT #: 1923-5641

PROJECT NAME: Meaford Union Street

WEATHER: 6°C, Cloudy

DATE: April 5, 2021

CONTRACTOR: Walker Drilling Ltd.

PHOTOS: No

LOCATION: Meaford, Ontario

ON SITE:

OFF SITE:

8:15 AM

4:30 PM

CFCA REPRESENTATIVE: Evan Finbow

WELL SPECIFIC

START:

END:

2:50 PM

4:00 PM

SITE VISITORS: Matt Zammitt, DS Consultants

EQUIPMENT & LABOUR ON SITE:	HOURS	EQUIPMENT & LABOUR ON SITE:	HOURS
Service Truck	7.75	Operator (1)	7.75
Drill Rig	7.75	Assistant (1)	7.75

WORK COMPLETED:

ITEM :	DESCRIPTION:	LOCATION:
Well #21-4	North East Corner of Site Groundwater Level	~130m S of Russett Drive C/L, ~150m W of Union Street C/L

MATERIAL USED:

ITEM:	QUANTITY:	ITEM:	QUANTITY:
Cone	1	J Plug	1
10 Foot Screen	1	Cement (Bag)	0
Riser (10ft)	1.2	Well Sand (50lbs Bag)	4
Well Cover	1	Bentonite (50lbs Bag)	1



GEOLOGY:

DEPTH:	SOIL CLASIFICATION:
0-2 ft.	SAND: Brown, moist, loose W/ trace silt and organics.
2-4 ft.	SAND: Brown, moist, loose W/ some silt.
5-7 ft.	SAND: Brown, fine-medium, moist, compact W/ some silt.
7-9 ft.	SILTY-SAND: Brown, wet, compact W/ trace gravel.
10-12 ft.	SILTY-SAND: Brown, wet, compact W/ trace gravel. SILTY-SAND: Grey, moist, dense W/ some gravel.
14-16 ft.	SILTY-SAND: Brown, wet, compact W/ trace gravel. SILTY-TILL: Grey, low moisture, dense, stiff W/ some sand and trace clay and gravel.
18-20 ft.	SILTY-TILL: Grey, low moisture, dense, stiff W/ some clay and trace sand and gravel.

REMARKS:

- Sand pack at 8 ft.
- Water noted in bottom of borehole upon completion at 20 ft.
- Screen (10 ft.) installed at 20 ft.

https://cfcrozier-my.sharepoint.com/personal/efinbow_cfcrozier_ca/Documents/Documents/Custom Office Templates/yyyy.mm.dd - Well Construction Log.docx



WELL CONSTRUCTION REPORT (WELL #21-4)

REPORT NO.: 2 of 3

PROJECT #: 1923-5641

PROJECT NAME: Meaford Union Street

WEATHER: 6°C, Cloudy

DATE: April 5, 2021

CONTRACTOR: Walker Drilling Ltd.

PHOTOS: No

LOCATION: Meaford, Ontario

ON SITE:

OFF SITE:

8:15 AM

4:30 PM

CFCA REPRESENTATIVE: Evan Finbow

WELL SPECIFIC

START:

END:

SITE VISITORS: Matt Zammitt, DS Consultants

8:30 AM

11:00 AM

EQUIPMENT & LABOUR ON SITE:	HOURS	EQUIPMENT & LABOUR ON SITE:	HOURS
Service Truck	7.75	Operator (1)	7.75
Drill Rig	7.75	Assistant (1)	7.75

WORK COMPLETED:

ITEM :	DESCRIPTION:	LOCATION:
Well #21-4	South West Corner of Site Groundwater Level	~115m E of Centre Street C/L, ~190m S of Northern Property Limit

MATERIAL USED:

ITEM:	QUANTITY:	ITEM:	QUANTITY:
Cone	1	J Plug	1
10 Foot Screen	1	Cement (Bag)	0
Riser (10ft)	1.2	Well Sand (50lbs Bag)	4
Well Cover	1	Bentonite (50lbs Bag)	2



GEOLOGY:

DEPTH:	SOIL CLASIFICATION:
0-2 ft.	SILTY-SAND: Brown, low moisture, loose W/ trace gravel and organics.
2-4 ft.	SILTY-SAND: Brown, moist, loose.
5-7 ft.	SILTY-SAND: Brown, wet, loose W/ trace gravel.
7-9 ft.	SILTY-SAND: Brown, wet, loose W/ trace gravel. Layer > GRAVELLY-SAND: Brown, medium to coarse.
10-12 ft.	SILTY-SAND: Brown, wet, loose W/ some gravel. SILTY-SAND: Grey, moist, dense W/ some gravel.
14-16 ft.	SILTY-SAND: Grey, moist, dense W/ some gravel.
18-20 ft.	SANDY-GRAVEL: Grey, wet, loose. SILTY-TILL: Grey, low moisture, dense, stiff W/ some sand and gravel, trace clay.

REMARKS:

- Sand pack at 8 ft.
- Water noted in bottom of borehole upon completion at 20 ft.
- Screen (10 ft.) installed at 20 ft.

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WELL CONSTRUCTION REPORT (WELL #21-7)

REPORT NO.: 1 of 3

PROJECT #: 1923-5641

PROJECT NAME: Meaford Union Street

WEATHER: -6°C, Light Snow

DATE: April 1, 2021

CONTRACTOR: Walker Drilling Ltd.

PHOTOS: No

LOCATION: Meaford, Ontario

ON SITE:

OFF SITE:

8:15 AM

4:30 PM

CFCA REPRESENTATIVE: Evan Finbow

WELL SPECIFIC

START:

END:

SITE VISITORS: Matt Zammitt, DS Consultants

9:30 AM

10:45 AM

EQUIPMENT & LABOUR ON SITE:	HOURS	EQUIPMENT & LABOUR ON SITE:	HOURS
Service Truck	7.75	Operator (1)	7.75
Drill Rig	7.75	Assistant (1)	7.75

WORK COMPLETED:

ITEM :	DESCRIPTION:	LOCATION:
Well #21-7	SWM Pond Groundwater Level	~25m W of Union Street C/L, Situated in Approximate Centre of Proposed SWM Block

MATERIAL USED:

ITEM:	QUANTITY:	ITEM:	QUANTITY:
Cone	1	J Plug	1
10 Foot Screen	1	Cement (Bag)	0
Riser (10ft)	1.2	Well Sand (50lbs Bag)	6
Well Cover	1	Bentonite (50lbs Bag)	2



GEOLOGY:

DEPTH:	SOIL CLASIFICATION:
0-2 ft.	TOPSOIL. SILTY-SAND: Brown, low moisture, loose W/ trace organics.
2-4 ft.	SILTY-SAND: Brown, low moisture, loose.
5-7 ft.	SILTY-SAND: Brown, wet, loose.
7-9 ft.	SILTY-SAND: Brown, wet, loose W/ trace gravel.
10-12 ft.	SILTY-SAND: Brown, wet, loose W/ some gravel. Layer > GRAVELLY-SAND: Brown, medium to coarse.
14-16 ft.	SILTY-SAND: Brown, wet, loose W/ some gravel.
18-20 ft.	SANDY-GRAVEL: Brown, wet, loose.

REMARKS:

- Sand pack at 8 ft.
- Water noted in bottom of borehole upon completion at 20 ft.
- Screen (10 ft.) installed at 20 ft.

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APPENDIX C

Manual Measurements

Project Name Union Street Residential Development
 Project Number 1923-5641
 Install Date 4-16-2021

Monitoring Well	Logger Serial	4-16-2021	5-28-2021	6-25-2021	7-21-2021	9-13-2021	11-01-2021	2-10-2022	4-06-2022
		W/L (mbgl)	W/L (mbgl)	W/L (mbgl)	W/L (mbgl)	W/L (mbgl)	W/L (mbgl)	W/L (mbgl)	W/L (mbgl)
21-B	2115105								
21-1	2118364	0.18	1.22	1.46	0.90	1.07	0.93	0.58	0.58
21-4	2129305	0.92	1.42	1.71	1.31	1.67	1.4	0.79	0.79
21-7	2127999	1.63	2.14	2.48	2.22	2.65	2.39	2.05	2.05