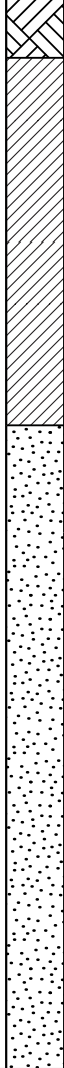
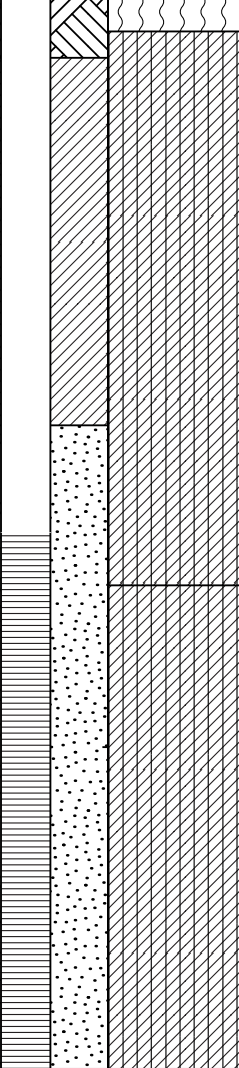


<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598001 4861283
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 265 masl
<b>ADDRESS</b> 14601 Duffy's Lane	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 1.01 m
<b>DRILLING DATE</b> 21/11/10	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/10	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** In between two iron posts northeast corner of the property

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, medium dense, minor gravel	Moist	Loose	264.5
1		SS 2.5 - 4.5ft	SS						Medium	264
1.5										263.5
2		SS 5.0 - 7.0ft	SS							263
2.5										262.5
3		SS 7.5 - 9.5ft	SS							262
3.5										261.5
4										261
4.5		SS 15.0 - 17.0ft	SS							260.5
5										260
5.5					259.5					
6					259					
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			258.5
7										258
7.5										257.5



**MONITORING WELL MW1-21**

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0601388 4861570
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 265 masl
<b>ADDRESS</b> 9948 Columbia Way, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.81 m
<b>DRILLING DATE</b> 21/11/01	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/01	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Columbia Way parcel, near 'Columbia Way' Sign

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5							TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	264.5
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt seams, minor gravel		Very Stiff	264
1.5										263.5
2		SS 5.0 - 7.0ft	SS							263
2.5							CLAYEY SILT TILL: Brown, clayey silt till to silty clay till, minor gravel, dense, moist		Hard	262.5
3		SS 7.5 - 9.5ft	SS							262
3.5										261.5
4										261
4.5		SS 10.0 - 12.0ft	SS							260.5
5										260
5.5		SS 15.0 - 17.0ft	SS				SILTY CLAY: Grey, silty clay, moist, dense, minor gravel, seam		Very Stiff	259.5
6										259
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at:6.10 m			258.5
7	AU									258
7.5										257.5



### MONITORING WELL MW2-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0601218 4861366
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 263 masl
<b>ADDRESS</b> 9948 Columbia Way, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.89 m
<b>DRILLING DATE</b> 21/11/01	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/01	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Corner of Columbia Way and Mount Hope Road

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5							TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	262.5
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt seams, minor gravel, @3.05m grey silty clay		Very Stiff	262
1.5										261.5
2		SS 5.0 - 7.0ft	SS							261
2.5										260.5
3		SS 7.5 - 9.5ft	SS							260
3.5										259.5
4										259
4.5		SS 15.0 - 17.0ft	SS				CLAYEY SILT TILL: Grey, clayey silt till to silty clay till, minor gravel, dense, moist			258.5
5										258
5.5							SILTY CLAY: Grey, silty clay, moist, dense, grey clay seam @6.10m		Stiff	257.5
6										257
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at:6.10 m			256.5
7	AU									256
7.5										255.5

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.



### MONITORING WELL MW3-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0600800 4861761
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 265 masl
<b>ADDRESS</b> Mount Hope Road, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.91 m
<b>DRILLING DATE</b> 21/11/02	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/02	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Behind "No Trespassing" Sign

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU	SS 2.5 - 4.5ft	SS	∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	264.5
1							SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt seams, minor gravel	Very Stiff	264	
1.5		SS 5.0 - 7.0ft	SS				263.5			
2		SS 7.5 - 9.5ft	SS				263			
2.5							262.5			
3		SS 10.0 - 12.0ft	SS				262			
3.5	SS 15.0 - 17.0ft	SS	∇			SILTY CLAY: Grey, silty clay, moist, dense, grey clay seams	Wet	Stiff	261.5	
4									261	
4.5									260.5	
5									260	
5.5	SS 20.0 - 22.0ft	SS	∇			Termination Depth at: 6.10 m			259.5	
6									259	
6.5									258.5	
7									258	
7.5										257.5



### MONITORING WELL MW4-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0600161 4861208
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 261 masl
<b>ADDRESS</b> Lot 12, Concession 7, Albion	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.99 m
<b>DRILLING DATE</b> 21/11/11	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/10	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Near tree line, mid field near stream

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)		
0.5	AU			∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	260.5		
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, medium dense, minor gravel		Medium	260		
1.5												259.5
2		SS 5.0 - 7.0ft	SS				SILTY SAND: Brown, silty sand, saturated	Wet		259		
2.5												258.5
3		SS 7.5 - 9.5ft	SS				SILTY CLAY: Brown, silty clay, grey silty clay seams, medium dense, moist, trace gravel	Moist		258		
3.5												257.5
4		SS 10.0 - 12.0ft	SS				SILTY SAND: Brown, silty sand, saturated	Wet		257		
4.5												256.5
5		SS 15.0 - 17.0ft	SS				SILTY CLAY: Grey, silty clay, trace gravel	Moist		256		
5.5								255.5				
6								255				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			254.5		
7										254		
7.5										253.5		



### MONITORING WELL MW5-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0600122 4861032
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 264 masl
<b>ADDRESS</b> Lot 12, Concession 7, Albion	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.97 m
<b>DRILLING DATE</b> 21/11/02	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/02	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Near High School scoreboard, North of fence

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU			∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	263.5
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt seams, minor gravel		Very Stiff	263
1.5										262.5
2		SS 5.0 - 7.0ft	SS							262
2.5		SS 7.5 - 9.5ft	SS							261.5
3		SS 10.0 - 12.0ft	SS							261
3.5						260.5				
4						SILT: Grey, silt, minor sand, saturated, 1.2 m seam	Wet	Medium	260	
4.5									259.5	
5	SS 15.0 - 17.0ft	SS				SILTY CLAY: Grey, silty clay, stone poor, moist	Moist	Stiff	259	
5.5									258.5	
6									258	
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			257.5
7									257	
7.5									256.5	



### MONITORING WELL MW6-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599914 4860896
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 264 masl
<b>ADDRESS</b> Lot 12, Concession 7, Albion	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.98 m
<b>DRILLING DATE</b> 21/11/02	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/02	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** North edge of field behind autoshop

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	263.5
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt seams, minor gravel		Very Stiff	263
1.5										262.5
2		SS 5.0 - 7.0ft	SS							262
2.5										261.5
3		SS 7.5 - 9.5ft	SS							261
3.5							SILT: Grey, silt, minor sand, saturated, approximately 0.60 m seam	Wet	Medium	260.5
4							SILTY CLAY: Grey, silty clay, stone poor, moist	Moist	Very Stiff	260
4.5										259.5
5		SS 15.0 - 17.0ft	SS	▽						259
5.5										258.5
6										258
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			257.5
7										257
7.5										256.5



### MONITORING WELL MW7-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599802 4861249
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 268 masl
<b>ADDRESS</b> 14337 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/03	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/03	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Garden centre field along fence line

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)	
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	267.5	
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt, minor clay seams, minor gravel		Very Stiff	267	
1.5										266.5	
2		SS 5.0 - 7.0ft	SS					SANDY SILT: Grey, sandy silt, saturated, approximately 0.60 m seam	Wet	Medium	266
2.5										265.5	
3		SS 7.5 - 9.5ft	SS					SILTY CLAY: Grey, silty clay, stone poor, moist	Moist	Stiff	265
3.5										264.5	
4		SS 10.0 - 12.0ft	SS					SILT: Grey, silt minor sand, saturated	Wet	Medium	264
4.5										263.5	
5		SS 15.0 - 17.0ft	SS							263	
5.5							SILTY CLAY: Grey, silty clay, dense, moist	Moist	Stiff	262.5	
6									262		
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			261.5	
7										261	
7.5										260.5	

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.





### MONITORING WELL MW8-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599628 4861023
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 266 masl
<b>ADDRESS</b> 14337 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/03	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/03	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Northwest corner of field near garden centre

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)			
0.5	AU			▽			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose Very Stiff	265.5			
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt, minor gravel			265			
1.5													264.5
2		SS 5.0 - 7.0ft	SS					SANDY SILT: Grey, sandy silt, saturated, approximately 0.40 m seam	Wet	Soft - Medium	264		
2.5													263.5
3		SS 7.5 - 9.5ft	SS					SILTY CLAY: Grey, silty clay, stone poor, moist	Moist	Very Stiff	263		
3.5													262.5
4													262
4.5		SS 15.0 - 17.0ft	SS					SILT: Grey, silt minor sand, saturated, approximately 0.30 m seam	Wet	Medium	261.5		
5													261
5.5									260.5				
6									260				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			259.5			
7										259			
7.5										258.5			



### MONITORING WELL MW9-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599496 4861220
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 270 masl
<b>ADDRESS</b> 14475 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/04	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/04	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** By existing barn, north edge of field

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)			
0.5	AU			∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose Very Stiff	269.5			
1		SS 2.5 - 4.5ft	SS				269						
1.5										SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt, minor gravel			268.5
2		SS 5.0 - 7.0ft	SS				268						
2.5													267.5
3		SS 7.5 - 9.5ft	SS				267						
3.5		SS 10.0 - 12.0ft	SS				266.5						
4										SILTY CLAY: Grey, silty clay, dense, moist			266
4.5									265.5				
5	SS 15.0 - 17.0ft	SS	265										
5.5							SILT: Grey, silt minor sand, saturated, approximately 0.30 m seam	Wet	Soft - Medium	265			
6							SILTY CLAY: Grey, silty clay, dense, moist	Moist	Very Stiff	264.5			
6.5	SS 20.0 - 22.0ft	SS					Termination Depth at: 6.10 m			263.5			
7										263			
7.5										262.5			



### MONITORING WELL MW10-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599679 4861517
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 263 masl
<b>ADDRESS</b> 14475 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/04	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/04	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** South bank of pond in middle of property

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU	SS 2.5 - 4.5ft	SS	∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets SILTY CLAY: Brown, silty clay, moist, dense, interbedded grey silt, minor gravel	Moist	Loose Very Stiff	262.5
1										262
1.5		SS 5.0 - 7.0ft	SS				261.5			
2		SS 7.5 - 9.5ft	SS				261			
2.5							260.5			
3		SS 10.0 - 12.0ft	SS				260			
3.5	SS 15.0 - 17.0ft	SS	259.5							
4			259							
4.5			258.5							
5			258							
5.5	SS 20.0 - 22.0ft	SS	257.5							
6			257							
6.5			Termination Depth at: 6.10 m	256.5						
7				256						
7.5				255.5						



### MONITORING WELL MW11-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599248 4861525
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 270 masl
<b>ADDRESS</b> 14475 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/04	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/04	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Northwest corner of property along fence line

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)			
0.5	AU	SS 2.5 - 4.5ft	SS	▽			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	267.5			
							Very Stiff						
1										SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel, trace sand			267
1.5			SS 5.0 - 7.0ft				SS						266.5
2													266
2.5			SS 7.5 - 9.5ft				SS						265.5
3													265
3.5			SS 10.0 - 12.0ft				SS						264.5
4													264
4.5			SS 15.0 - 17.0ft				SS				SILTY CLAY: Grey, silty clay, dense, moist, trace gravel		
5									263				
5.5							SANDY SILT: Grey, silt minor sand, saturated, approximately 0.80 m seam	Wet	Soft - Medium	262.5			
6									262				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			261.5			
7									261				
7.5									260.5				



### MONITORING WELL MW12-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599417 4861745
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 268 masl
<b>ADDRESS</b> 14475 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/04	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/04	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Edge of field, NE parcel, along fence line

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)			
0.5	AU			▽			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose Very Stiff	267.5			
1		SS 2.5 - 4.5ft	SS				267						
1.5										SILTY CLAY: Brown, silty clay, moist, dense, minor gravel, trace sand			266.5
2		SS 5.0 - 7.0ft	SS				266						
2.5													265.5
3		SS 7.5 - 9.5ft	SS				265						
3.5		SS 10.0 - 12.0ft	SS				264.5						
4										SANDY SILT: Grey, silt minor sand, saturated, approximately 0.80 m seam	Wet	Soft - Medium	264
4.5										SILTY CLAY: Grey, silty clay, dense, moist, trace gravel	Moist	Very Stiff	263.5
5		SS 15.0 - 17.0ft	SS				263						
5.5						SILT: Brown to grey, silt, saturated	Wet	Medium	262.5				
6						SILTY CLAY: Grey, silty clay, dense, moist, stone poor	Moist	Stiff	262				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			261.5			
7										261			
7.5										260.5			



**MONITORING WELL MW13-21**

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599098 4861591
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 270 masl
<b>ADDRESS</b> 14685 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/08	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/08	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Near farm silos

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU	SS 2.5 - 4.5ft	SS	▽			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	269.5
1							SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel, trace sand		Very Stiff	269
1.5		SS 5.0 - 7.0ft	SS				268.5			
2							268			
2.5		SS 7.5 - 9.5ft	SS				267.5			
3		SS 10.0 - 12.0ft	SS				267			
3.5							SILTY CLAY: Grey, silty clay, grey silty clay seams, dense, moist, trace gravel			266.5
4										266
4.5		SS 15.0 - 17.0ft	SS							265.5
5							SANDY SILT: Grey, silty sand to sandy silt, saturated, approximately 0.60 m seam	Wet	Medium	265
5.5							SILTY CLAY: Grey, silty clay to clay, dense, moist, trace gravel	Moist	Stiff	264.5
6										264
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			263.5
7										263
7.5										262.5



### MONITORING WELL MW14-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0599114 4862349
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 269 masl
<b>ADDRESS</b> 14685 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/05	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

**COMPLETION** 21/11/05      **CASING** PVC      **SCREEN** PVC

**COMMENTS** Northeast corner of parcel along fence by woodlot and east cornfield

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)				
0.5	AU	SS 2.5 - 4.5ft	SS	iv			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	268.5				
							SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel, trace sand		Very Stiff					
1													268	
1.5			SS 5.0 - 7.0ft				SS							267.5
2														267
2.5			SS 7.5 - 9.5ft				SS				SANDY SILT: Brown, silty sand to sandy silt, saturated, approximately 0.50 m seam	Wet	Medium	266.5
3			SS 10.0 - 12.0ft				SS				SILTY CLAY: Brown, silty clay, dense, moist, trace gravel	Moist	Stiff	266
3.5														265.5
4											SANDY SILT: Brown, sandy silt, saturated, approximately 1 m	Wet	Medium	265
4.5			SS 15.0 - 17.0ft				SS							264.5
5							SILTY CLAY: Grey, silty clay to clay, dense, moist, trace gravel	Moist	Stiff	264				
5.5										263.5				
6										263				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			262.5				
7										262				
7.5										261.5				



### MONITORING WELL MW15-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598811 4861951
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 271 masl
<b>ADDRESS</b> 14685 Highway 50, Bolton	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/05	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/05	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Northwest corner of the property, behind red brick

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)			
0.5	AU			∇			TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose Very Stiff	270.5			
1		SS 2.5 - 4.5ft	SS				270						
1.5										SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel, trace sand			269.5
2		SS 5.0 - 7.0ft	SS				269						
2.5		SS 7.5 - 9.5ft	SS				268.5						
3		SS 10.0 - 12.0ft	SS				268						
3.5						SANDY SILT: Brown, silty sand to sandy silt, saturated, approximately 0.50 m seam	Wet	Medium	267.5				
4						SILTY CLAY: Brown, silty clay, grey silty clay seams, dense, moist, trace gravel	Moist	Stiff	267				
4.5						SANDY SILT: Brown, sandy silt, saturated, approximately 0.2 m	Wet	Medium	266.5				
5	SS 15.0 - 17.0ft	SS	266										
5.5						SILTY CLAY: Grey, silty clay to clay, dense, moist, trace gravel	Moist	Stiff	265.5				
6									265				
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			264.5			
7									264				
7.5									263.5				

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.





### MONITORING WELL MW16-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598956 4861168
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 268 masl
<b>ADDRESS</b> Hwy 50 and Hwy 150 Parcel	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b>
<b>DRILLING DATE</b> 21/11/08	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/08	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Southwest corner of field by treeline

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose Very Stiff	267.5
1		SS 2.5 - 4.5ft	SS				SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel			267
1.5										266.5
2		SS 5.0 - 7.0ft	SS							266
2.5		SS 7.5 - 9.5ft	SS							265.5
3		SS 10.0 - 12.0ft	SS							265
3.5								264.5		
4								264		
4.5								263.5		
5		SS 15.0 - 17.0ft	SS				SILTY CLAY: Grey, silty clay, grey silty clay seams, dense, moist, trace gravel			263
5.5									262.5	
6									262	
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			261.5
7									261	
7.5									260.5	

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.



### MONITORING WELL MW17-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598998 4861490
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 269 masl
<b>ADDRESS</b> Hwy 50 and Hwy 150 Parcel	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 1.03 m
<b>DRILLING DATE</b> 21/11/09	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/09	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** North of roundabout, northeast corner of property

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)		
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	268.5		
1		SS 2.5 - 4.5ft	SS					SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, dense, minor gravel		Very Stiff	268	
1.5												267.5
2		SS 5.0 - 7.0ft	SS						SANDY SILT: Brown, sandy silt to silt, minor clay, saturated	Wet	Medium	267
2.5												266.5
3		SS 7.5 - 9.5ft	SS						SILTY CLAY: Brown, silty clay, grey silty clay to silt seams, moist, dense, minor gravel	Moist	Stiff	266.5
3.5												266
4		SS 10.0 - 12.0ft	SS						SILTY CLAY: Grey, silty clay, grey silty clay seams, dense, moist, trace gravel			266
4.5												265.5
5		SS 15.0 - 17.0ft	SS									265
5.5									264.5			
6									264			
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			263.5		
7									263			
7.5									262.5			

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.



### MONITORING WELL MW18-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598210 4860598
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 261 masl
<b>ADDRESS</b> 14601 Duffy's Lane	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 1.03 m
<b>DRILLING DATE</b> 21/11/09	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

<b>COMPLETION</b> 21/11/09	<b>CASING</b> PVC	<b>SCREEN</b> PVC
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**COMMENTS** Behind gravel area, willow farm

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)
0.5	AU	SS 2.5 - 4.5ft	SS				TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets	Moist	Loose	260.5
1							SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, medium dense, minor gravel		Medium	260
1.5		SS 5.0 - 7.0ft	SS				259.5			
2		SS 7.5 - 9.5ft	SS				259			
2.5							CLAY: Grey clay, trace gravel, iron staining, moist, medium dense	258.5		
3		SS 10.0 - 12.0ft	SS				258			
3.5		SS 15.0 - 17.0ft	SS				SILTY CLAY: Grey, silty clay, grey silty clay seams, dense, moist, trace gravel	Stiff	257.5	
4							257			
4.5							256.5			
5							256			
5.5	255.5									
6									255	
6.5	SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m				254.5
7										254
7.5										253.5



### MONITORING WELL MW19-21

<b>PROJECT NUMBER</b> 0708 - 3446	<b>DRILLING COMPANY</b> ACE Environmental Drilling	<b>COORDINATES</b> 17T 0598395 4861011
<b>PROJECT NAME</b> Bolton North Hill	<b>DRILLER</b> John/Nick	<b>COORD SYS</b> UTM
<b>CLIENT</b> Bolton North Hill Landowner Group	<b>DRILL RIG</b> GT3126 Geoprobe	<b>SURFACE ELEVATION</b> 262 masl
<b>ADDRESS</b> 14601 Duffy's Lane	<b>DRILLING METHOD</b> Augering Hollow Flight	<b>WELL TOC</b> 0.95 m
<b>DRILLING DATE</b> 21/11/10	<b>TOTAL DEPTH</b> 6.1 m	<b>LOGGED BY</b> CM
<b>LICENCE NO.</b> 7725	<b>DIAMETER</b> 51 mm	<b>CHECKED BY</b> CG

**COMPLETION** 21/11/10      **CASING** PVC      **SCREEN** PVC

**COMMENTS** South field, east fence at the start of south treeline

Depth (m)	Drilling Method	Samples	Sample Type	Water	Well Installation	Graphic Log	Material Description	Moisture	Consistency	Elevation (m)	
0.5	AU						TOPSOIL: Dark brown, silty to clay silt, organic, abundant rootlets SILTY CLAY: Brown, silty clay, grey silty clay seams, moist, medium dense, minor gravel	Moist	Loose Medium	261.5	
1		SS 2.5 - 4.5ft	SS							261	
1.5										260.5	
2		SS 5.0 - 7.0ft	SS							260	
2.5										259.5	
3		SS 7.5 - 9.5ft	SS							259	
3.5										258.5	
4										258	
4.5		SS 10.0 - 12.0ft	SS					SILTY CLAY: Grey, silty clay, grey silty clay seams, medium dense, moist, trace gravel			257.5
5										257	
5.5									256.5		
6									256		
6.5		SS 20.0 - 22.0ft	SS				Termination Depth at: 6.10 m			255.5	
7										255	
7.5										254.5	

**MECP WATER WELL RECORD SUMMARY TABLE**

Project Number: 708-3446  
Prepared by: MD

Address:  
Date completed:

Bolton North Hill Lands  
2022-02-01

Key Number	Well ID	Diameter (mm)	Depth (m)	Static Level (m)	Material(s)	Aquifer <sup>1</sup>	Location <sup>2</sup>	Use	Notes
1	4900332	762	29.9	26.2	sand/sandy clay	OB	W of Highway 50	commercial	
2	7286178	51	12.2	-	sand/silt/clay	OB	W of Caledon King Townline	monitoring	
3	4904789	152	52.7	13.7	gravel/sand/clay	OB	E of Duffy's Lane	domestic	
4	4900283	168	47.5	21.3	sand/silt/clay	OB	W of Duffy's Lane	domestic/livestock	
5	4900477	127	54.9	40.8	sand/silt/clay	OB	W of Caledon King Townline	domestic	
6	4905726	127	55.5	18.3	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
7	7194829	159	48.8	24.1	sand/silt/clay	OB	S of Castlederg Side Rd	-	water supply
8	4910321	63	161.0	80.2	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
9	7224081	51	5.5	-	sand/silt	OB	E of Highway 50	monitoring	test hole
10	4905679	152	45.1	21.0	gravel/sand/clay	OB	E of Highway 50	domestic	
11	4910352	50	5.8	-	sand/silt/clay	OB	E of Mt Hope Rd	-	test hole
12	4906519	127	33.5	17.7	gravel/sand/silt/clay	OB	S of Mount Hope Rd	domestic	
13	4908660	152	52.7	21.3	gravel/sand/clay	OB	E of Mt Hope Rd	domestic	
14	4907928	203	59.4	14.6	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
15	4903434	762	10.4	4.3	sand/clay	OB	E of Humber Station Rd	domestic	
16	7104790	159	47.5	25.2	sand/silt/clay	OB	E of Highway 50	domestic/livestock	
17	4908023	152	43.0	22.9	sand/clay	OB	W of Highway 50	domestic	
18	4906535	127	54.3	25.3	sand/clay	OB	N of Castlederg Side Rd	domestic	
19	7264367	150	51.8	-	-	-	S of Castlederg Side Rd	-	abandoned
20	4900390	762	10.1	7.3	sand/clay	OB	S of Castlederg Side Rd	domestic	
21	4904464	127	47.2	19.8	sand/silt/clay	OB	W of Highway 50	domestic	
22	4909470	216	65.2	7.4	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
23	4909893	152	42.7	21.9	sand/clay	OB	W of Mt Hope Rd	domestic	
24	7172324	25	45.7	-	sand/clay	OB	W of Emily Kolb Pkwy	monitoring	test hole/cluster
25	4905187	152	34.1	16.1	sand/clay	OB	N of Castlederg Side Rd	monitoring	
26	4905297	127	33.5	22.6	gravel/sand/clay	OB	S of Columbia Way	domestic	
27	4907617	152	62.5	35.0	sand/silt/clay	OB	W of Caledon King Townline	domestic	
28	4900395	157	80.8	29.9	sand/clay	OB	N of Castlederg Side Rd	domestic	
29	4900388	102	64.0	24.4	sand/clay	OB	W of Mt Hope Rd	domestic/livestock	
30	4907963	152	57.3	25.6	sand/clay	OB	N of Castlederg Side Rd	domestic	
31	4904698	152	42.7	14.6	sand/clay	OB	W of Duffy's Lane	domestic	
32	4906317	152	49.1	25.9	gravel/sand/clay	OB	W of Highway 50	domestic/irrigation	
33	4905630	127	56.4	20.7	sand/clay	OB	W of Mt Hope Rd	domestic	
34	4904788	152	80.2	13.7	gravel/sand/clay	OB	E of Duffy's Lane	domestic	
35	4904097	127	52.1	25.6	sand/clay	OB	W of Highway 50	livestock	
36	7225352	152	25.6	1.0	sand/clay/shale	OB	S of Columbia Way	domestic	
37	7177341	100	39.8	25.9	gravel/sand/clay	OB	N of Castlederg Side Rd	-	abandoned
38	4900456	914	4.3	0.9	gravel/sand/clay	OB	E of Mt Hope Rd	domestic	
39	4904083	762	11.6	3.0	sand/clay	OB	W of Mt Hope Rd	domestic	
40	7164920	46	6.7	-	sand/silt/clay	OB	S of Columbia Way	monitoring	
41	4900281	102	39.0	0.9	gravel/sand/clay	OB	N of Castlederg Side Rd	domestic	
42	4903054	762	9.1	4.3	sand/clay	OB	E of Duffy's Lane	domestic	
43	4905801	152	51.8	21.0	sand/clay	OB	S of Castlederg Side Rd	domestic	
44	7133392	51	10.7	-	silt	OB	N of Emily Kolb Pkwy	monitoring	
45	7040135	152	15.2	-	-	-	E of Mt Hope Rd	-	abandoned
46	4900393	610	7.3	6.1	sand/clay	OB	N of Castlederg Side Rd	domestic	
48	4907092	152	44.2	18.9	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
49	4907329	152	46.3	14.6	sand/clay	OB	E of Duffy's Lane	domestic	
50	4906738	152	50.3	17.7	sand/silt/clay	OB	E of Highway 50	domestic	
51	4907401	152	60.7	18.3	gravel/silt/clay	OB	N of Castlederg Side Rd	domestic	
52	4900285	102	46.6	18.2	gravel/silt/clay	OB	N of Castlederg Side Rd	domestic	
53	4900331	127	51.8	-	sand/clay	OB	W of Highway 50	domestic	
54	4908373	76	43.3	-	-	-	W of Highway 50	-	abandoned
56	4903668	127	52.4	28.0	sand/silt/clay	OB	W of Caledon King Townline	domestic	
57	7234751	159	50.9	23.8	sand/silt/clay	OB	S of Castlederg Side Rd	-	water supply
58	7267797	159	30.5	11.9	sand/clay	OB	W of Duffy's Lane	domestic	
59	4910340	159	54.2	25.2	sand/silt/clay	OB	W of Highway 50	domestic/livestock	
60	7328807	51	10.1	-	sand/silt/clay	OB	W of Caledon King Townline	monitoring	
61	4904790	152	60.4	13.7	sand/clay	OB	E of Duffy's Lane	domestic	
62	4907637	152	71.6	18.3	gravel/sand/clay	OB	S of Castlederg Side Rd	domestic	
63	4910341	159	25.9	14.6	sand/clay	OB	W of Duffy's Lane	domestic	
64	4903446	127	49.7	19.8	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
65	7224105	52	6.1	-	sand/silt	OB	E of Highway 50	monitoring	test hole
68	4903254	914	6.7	1.5	sand/clay	OB	N of Castlederg Side Rd	domestic	
69	4907148	168	33.5	-	sand/clay	OB	S of Castlederg Side Rd	-	unfinished
70	4906158	152	93.0	24.7	sand/clay/shale	BR	N of Columbia Way	domestic	
71	4906292	762	24.4	6.1	sand/clay	OB	W of The Gore Rd	domestic	
72	4908590	203	52.4	39.3	sand/clay	BR	W of Caledon King Townline	domestic	
73	4903756	914	17.1	13.4	sand/clay	OB	W of Highway 50	domestic	
74	4900473	127	54.3	41.1	sand/silt/clay	OB	W of Caledon King Townline	domestic	
75	4905782	127	52.7	14.3	sand/silt/clay	OB	W of Duffy's Lane	domestic	
77	4907307	152	48.2	38.7	sand/silt/clay	OB	W of Caledon King Townline	domestic	
78	4905731	762	15.2	10.4	sand/clay	OB	N of Columbia Way	domestic	
79	4903260	127	65.5	28.6	sand/clay	OB	N of Castlederg Side Rd	domestic	
80	4907120	152	40.2	16.8	gravel/sand/clay	OB	S of Castlederg Side Rd	domestic	
81	4900385	102	49.4	36.6	sand/clay	OB	E of Highway 50	domestic/livestock	
82	4905852	127	68.6	21.0	sand/silt/clay	OB	W of Mt Hope Rd	domestic	
83	4904036	127	47.2	18.0	sand/clay	OB	W of Caledon King Townline	domestic	
84	4900328	102	40.2	26.2	sand/clay	OB	W of Highway 50	domestic	
85	4903836	914	15.2	-	-	-	W of Mt Hope Rd	-	abandoned
86	4908423	152	54.9	28.0	-	-	S of Columbia Way	-	abandoned
87	4906009	152	52.4	25.6	sand/clay	OB	W of Highway 50	domestic/livestock	
88	4905592	152	57.9	28.6	sand/silt/clay	OB	W of Caledon King Townline	domestic	
89	6909363	127	32.9	21.3	sand/clay	OB	E of Highway 50	domestic/livestock	
90	4905323	-	5.8	0.9	sand/silt/clay	OB	S of Columbia Way	domestic	
91	4900389	127	36.6	25.0	sand/clay	OB	E of Highway 50	domestic	
92	4903055	762	8.5	5.5	sand/clay	OB	N of Castlederg Side Rd	domestic	
93	4909027	159	37.5	21.9	sand/clay	OB	W of Mt Hope Rd	domestic	
94	4906971	152	49.4	36.6	sand/silt/clay	OB	W of Caledon King Townline	domestic	
95	7152393	90	6.7	1.5	gravel/sand/clay	-	S of Castlederg Side Rd	-	abandoned
96	4904387	762	11.6	6.1	sand/clay	OB	W of Duffy's Lane	domestic	
97	4908661	203	49.7	25.9	gravel/silt/clay	OB	S of Castlederg Side Rd	domestic	
98	4908820	203	42.7	20.1	gravel/sand/clay	OB	N of Castlederg Side Rd	irrigation	
99	4907729	152	64.9	28.0	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
100	4900324	152	73.2	-	silt/clay	-	W of Highway 50	-	abandoned
101	4908498	203	39.6	21.9	gravel/sand/clay	OB	E of Mt Hope Rd	domestic	
102	7224082	51	5.5	-	sand/silt	OB	E of Highway 50	monitoring	test hole
103	4907252	152	35.7	18.9	sand/clay	OB	S of Columbia Way	domestic	
104	7130482	51	7.6	-	silt/clay	OB	W of Caledon King Townline	monitoring	

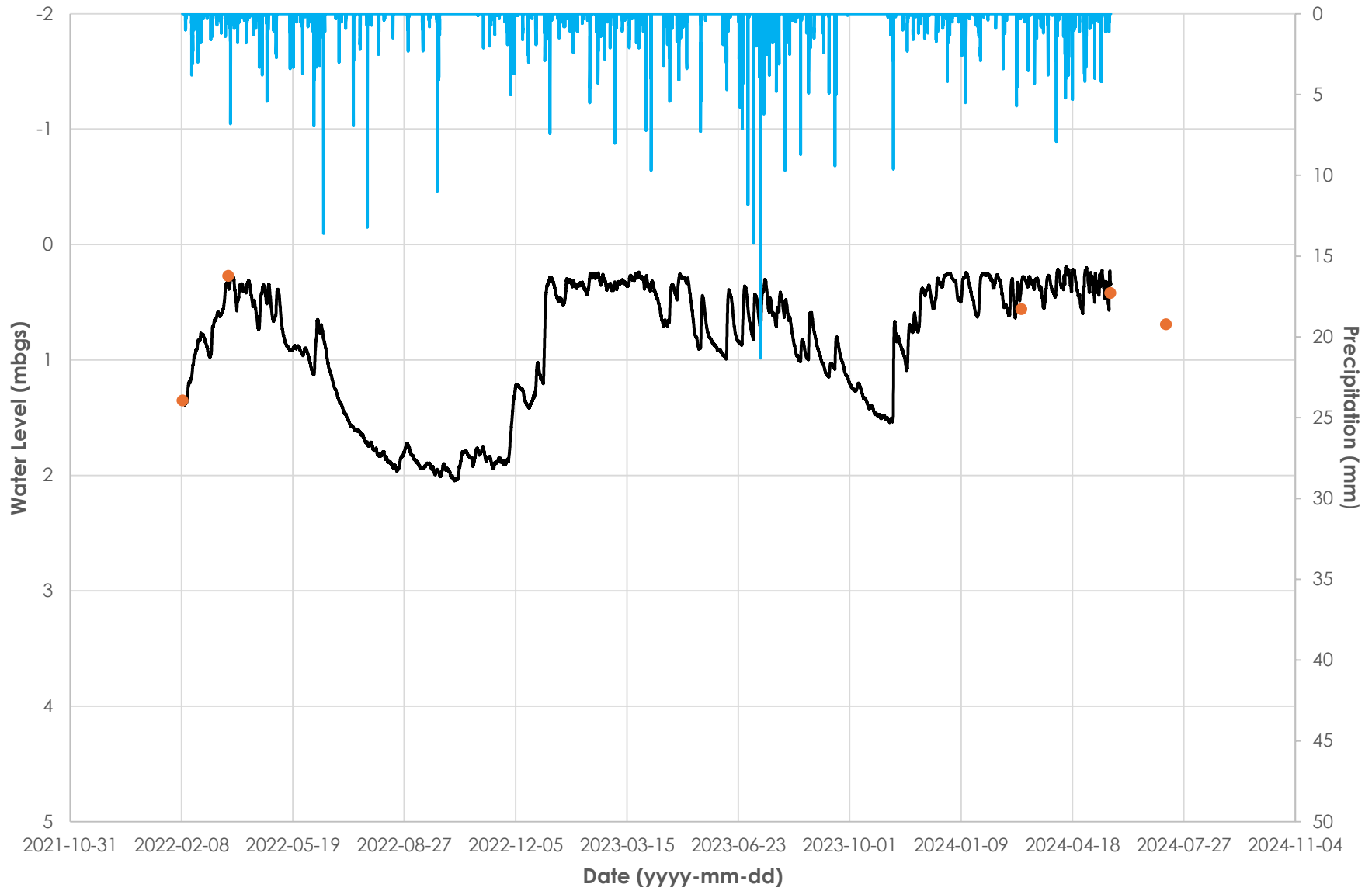
Key Number	Well ID	Diameter (mm)	Depth (m)	Static Level (m)	Material(s)	Aquifer <sup>1</sup>	Location <sup>2</sup>	Use	Notes
105	4907993	152	68.3	16.8	sand/silt/clay	OB	Castlederg Side Rd	domestic	
106	4907913	152	22.6	5.2	sand/silt/clay	OB	S of Columbia Way	domestic	
107	4900386	102	57.0	34.4	gravel/sand/clay	OB	S of Columbia Way	domestic/livestock	
109	4907791	127	46.9	20.7	gravel/sand/clay	OB	W of Mt Hope Rd	domestic	
110	4908497	203	38.7	21.3	gravel/sand/clay	OB	E of Mt Hope Rd	domestic	
111	4904451	127	24.7	17.7	gravel/sand/clay	OB	E of Mt Hope Rd	domestic	
112	4903485	914	6.1	1.8	sand/clay	OB	N of Castlederg Side Rd	domestic	
113	4904760	152	56.4	12.2	sand/clay	OB	E of Duffy's Lane	domestic	
114	4903191	127	50.0	38.1	sand/clay	OB	W of Caledon King Townline	domestic	
115	4900447	762	4.3	0.9	sand/clay	OB	S of Columbia Way	domestic	
116	4902960	219	35.0	1.8	sand/silt/clay	OB	W of Caledon King Townline	public	
118	4907989	152	60.4	38.1	sand/clay	OB	W of Caledon King Townline	domestic	
119	7169000	125	7.2	1.9	-	-	E of Highway 50	-	abandoned
120	4900323	127	53.0	23.8	sand/clay	OB	S of Columbia Way	domestic	
122	4908855	159	63.4	21.3	sand/silt/clay	OB	N of Castlederg Side Rd	domestic	
123	7050089	159	51.8	15.2	sand/clay	OB	N of Castlederg Side Rd	domestic	
124	4904180	127	44.2	18.0	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
125	7190725	152	54.3	14.6	sand/silt/clay	OB	Castlederg Side Rd	domestic	
126	4906968	152	54.6	38.7	sand/clay	OB	W of Caledon King Townline	-	water supply
127	4900326	127	34.1	20.1	sand/silt/clay	OB	S of Emily Kolb Pkwy	domestic/livestock	
129	4905146	127	55.2	39.6	sand/silt/clay	OB	W of Caledon King Townline	domestic	
130	4904747	152	64.0	15.8	gravel/sand/clay/shale	BR	E of Mt Hope Rd	domestic	
131	4906536	127	52.7	16.5	sand/clay	OB	S of Castlederg Side Rd	domestic/livestock	
132	4906046	152	70.1	17.1	sand/silt/clay	OB	W of Mt Hope Rd	domestic	
133	4900330	133	44.2	15.2	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
134	4900451	762	19.2	14.9	sand/clay	OB	N of Columbia Way	domestic	
135	4906893	152	68.9	14.3	sand/silt/clay	OB	E of Duffy's Lane	domestic	
136	4904697	152	42.7	15.2	sand/clay	OB	W of Duffy's Lane	domestic	
138	4900392	127	47.2	19.2	sand/clay	OB	W of Highway 50	domestic	
139	4908856	159	73.5	16.1	sand/clay	OB	E of Highway 50	domestic	
140	4905966	762	12.2	3.0	sand/clay	OB	E of Highway 50	domestic	
141	7297324	51	3.0	-	clay	OB	S of Columbia Way	monitoring	
142	4906568	159	44.2	15.8	sand/silt/clay	OB	W of Mt Hope Rd	domestic	
143	4900472	762	12.2	9.1	sand/clay	OB	W of Caledon King Townline	domestic	
144	4903539	178	47.5	18.3	gravel/sand/clay	OB	W of Highway 50	domestic	
146	4900387	127	28.4	19.8	sand/clay	OB	E of Highway 50	domestic/livestock	
147	7224080	52	5.5	-	sand/silt/clay	OB	E of Highway 50	monitoring	test hole
148	4900474	127	54.0	32.6	sand/silt/clay	OB	W of Caledon King Townline	domestic	
149	4903681	127	50.6	15.5	gravel/sand/clay	OB	N of Castlederg Side Rd	domestic	
150	4904695	152	42.4	15.5	sand/clay	OB	W of Duffy's Lane	domestic	
151	4900448	762	19.8	-	-	-	S of Columbia Way	-	abandoned
152	4900391	127	44.8	24.4	sand	OB	E of Highway 50	domestic	
153	4909074	159	49.7	25.0	sand/silt/clay	OB	N of Emily Kolb Pkwy	domestic	
155	7254974	152	51.2	19.7	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
157	4903505	762	25.3	22.6	sand/clay	OB	N of Castlederg Side Rd	domestic	
158	4905203	762	8.8	4.3	sand/clay	OB	N of Castlederg Side Rd	domestic	
159	7234742	159	54.9	37.2	sand/clay	OB	W of Caledon King Townline	domestic	
160	4908816	203	43.9	19.8	sand/clay	OB	E of Mt Hope Rd	domestic	
161	4905705	127	57.0	26.5	sand/clay	OB	W of Highway 50	domestic	
162	4900280	178	42.7	19.8	sand/clay	OB	W of Duffy's Lane	domestic/livestock	
163	4909424	152	58.8	21.9	gravel/sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
164	4906569	152	47.2	12.8	sand/silt/clay	OB	W of Mt Hope Rd	domestic	
165	4900284	914	6.7	3.0	sand/clay	OB	S of Castlederg Side Rd	domestic	
166	4908477	152	59.7	25.0	gravel/sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
168	4904184	127	44.5	18.9	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
169	4903555	178	60.7	7.0	sand/clay	OB	N of Castlederg Side Rd	domestic	
170	7297325	51	3.0	-	clay	OB	S of Columbia Way	monitoring	test hole
172	4907328	152	66.5	21.3	sand/silt/clay	OB	W of Duffy's Lane	domestic	
173	4904696	152	42.7	14.6	sand/clay	OB	W of Duffy's Lane	domestic	
174	7185451	159	45.7	14.9	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
175	4900452	127	89.0	-	gravel/silt/clay/shale	BR	E of Mt Hope Rd	-	test hole
176	4900454	102	51.8	12.2	sand/clay	OB	E of Mt Hope Rd	domestic/livestock	
177	4900450	152	60.0	28.4	gravel/sand/clay	OB	S of Columbia Way	domestic	
179	4908731	152	59.7	24.1	silt/clay/shale/limestone	BR	S of Columbia Way	domestic	
180	4907557	152	72.8	24.4	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
181	4900329	168	47.2	19.8	sand/silt/clay	OB	E of Duffy's Lane	domestic/livestock	
182	4908819	203	33.5	18.6	sand/clay	OB	E of Mt Hope Rd	domestic	
183	4900327	102	37.2	18.3	sand/clay	OB	W of Highway 50	domestic	
185	4900453	51	57.6	-	gravel/silt/clay	OB	W of Caledon King Townline	-	test hole
186	4906769	152	33.5	1.8	sand/clay/shale	BR	S of Columbia Way	domestic	
187	4906552	152	57.9	17.1	sand/clay	OB	W of Highway 50	-	water supply
188	4900325	127	79.9	27.7	sand/clay	OB	W of Highway 50	public	
189	4908818	203	48.8	18.9	sand/clay	OB	E of Mt Hope Rd	domestic	
190	7154765	159	38.7	22.3	-	-	S of Castlederg Side Rd	-	abandoned
191	7269814	152	52.7	22.7	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
192	4904599	178	48.5	23.5	gravel/sand/clay	OB	S of Castlederg Side Rd	domestic	
194	7101984	158	54.3	31.5	sand/silt/clay	OB	E of Highway 50	domestic	
195	4903224	127	45.7	13.7	gravel/silt/clay	OB	W of Highway 50	domestic	
196	4908693	152	58.5	20.7	sand/silt/clay	OB	S of Castlederg Side Rd	domestic	
197	4907122	152	44.5	32.0	sand/silt/clay	OB	W of Caledon King Townline	domestic	
198	4900384	610	24.1	19.5	sand/clay	OB	S of Columbia Way	domestic	
199	4905068	152	46.9	20.4	sand/clay	OB	S of Castlederg Side Rd	domestic	
200	4906518	152	43.6	18.9	sand/silt/clay	OB	E of Mt Hope Rd	domestic	
202	4900279	762	18.3	9.1	sand/clay	OB	W of Duffy's Lane	domestic	
203	7151771	152	48.2	21.7	sand/clay	OB	S of Castlederg Side Rd	domestic	
204	4903155	762	6.7	2.4	clay	OB	S of Castlederg Side Rd	domestic	
205	4903328	762	14.0	-	clay	-	E of Mt Hope Rd	-	abandoned
206	4900449	127	64.0	27.4	clay/shale	BR	S of Columbia Way	domestic	

Data Source: Ministry of the Environment, Conservation, and Parks, retrieved February 1st, 2022.

1. OB = overburden aquifer BR = bedrock aquifer

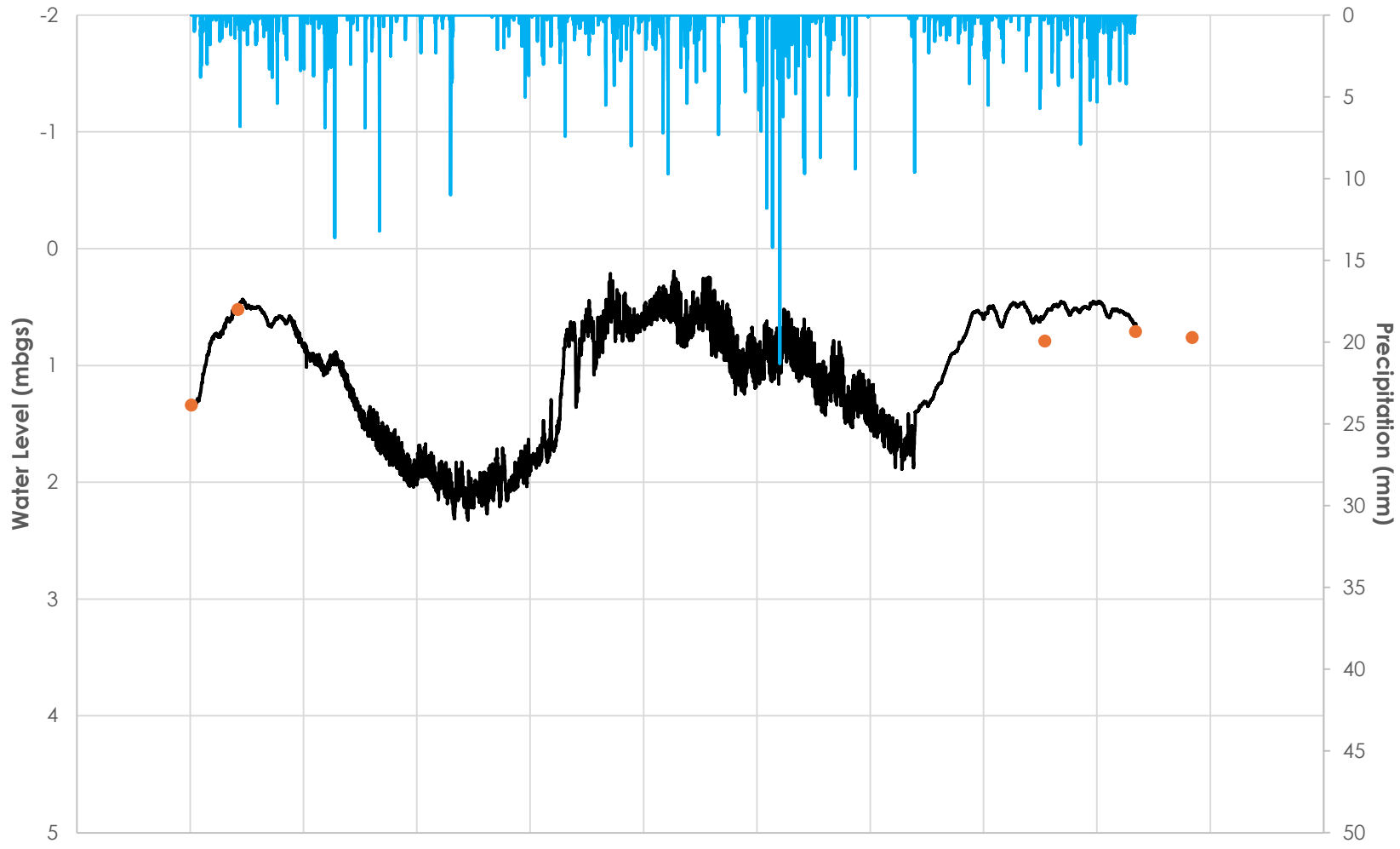
2. Highlighted - well record identified within the subject lands

### MW1 (February 2022 - May 2024)



— Automatic    ● Manual    — Precipitation (mm)

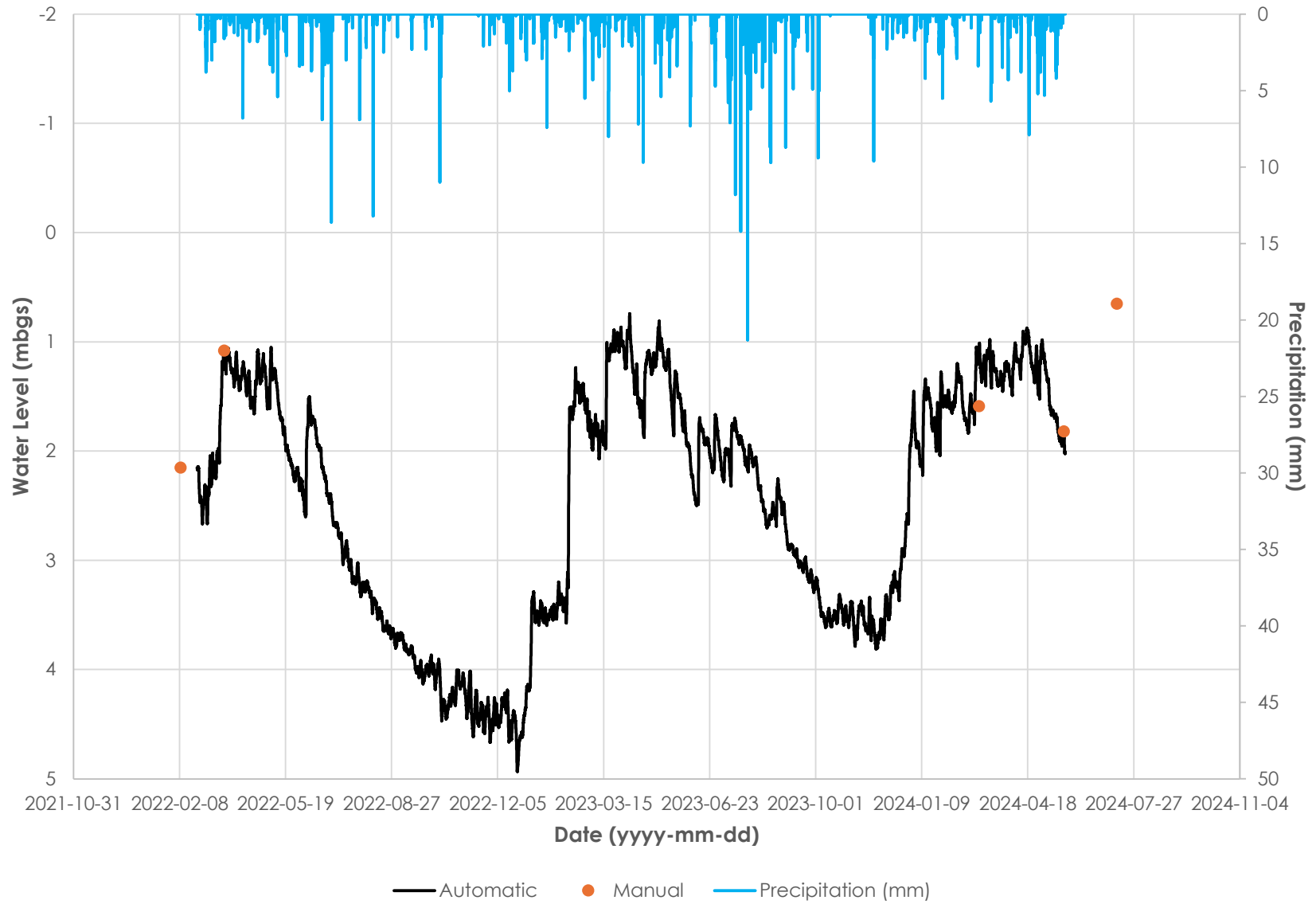
### MW2 (February 2022 - May 2024)



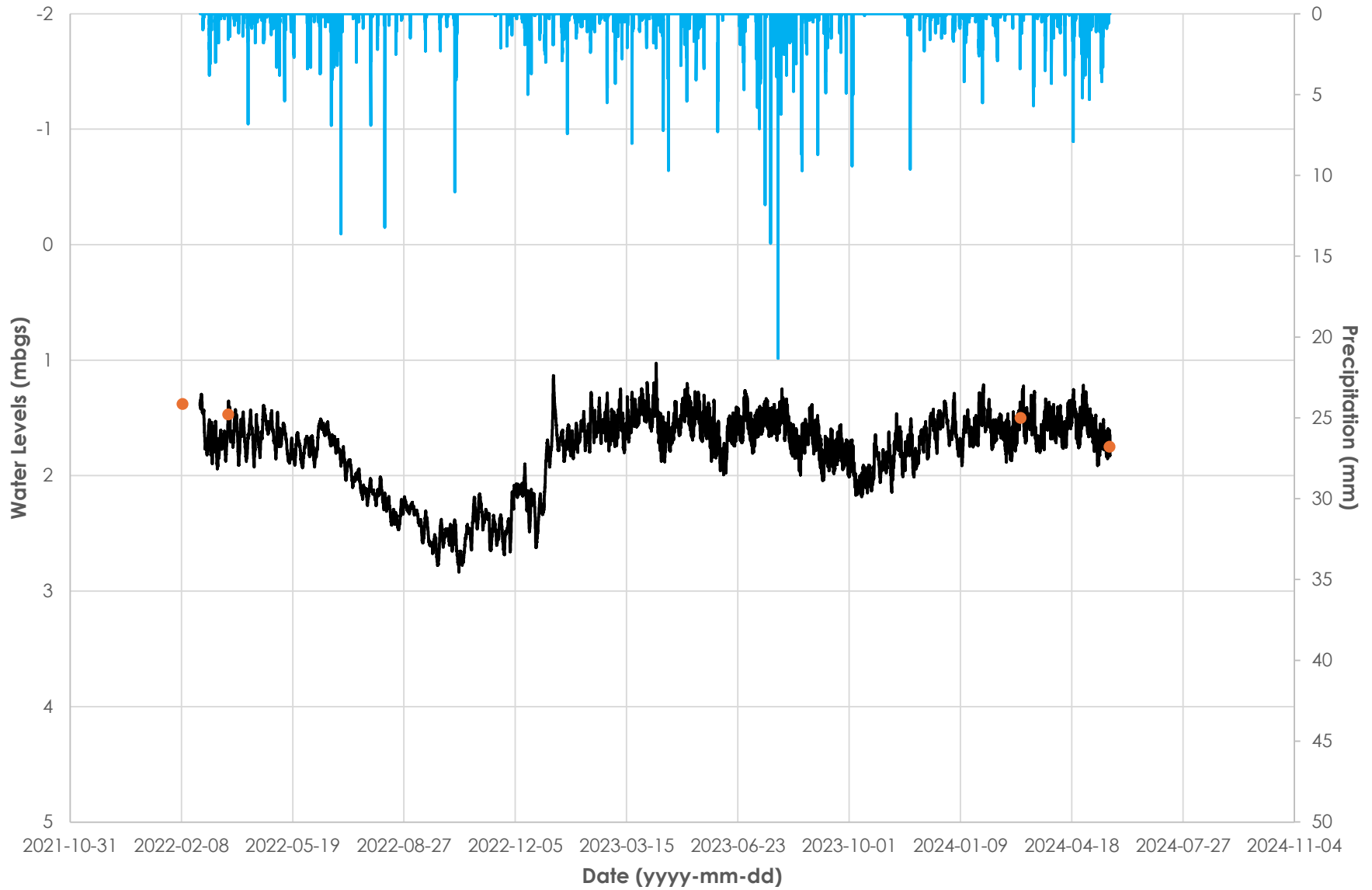
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### MW9 (February 2022 - May 2024)

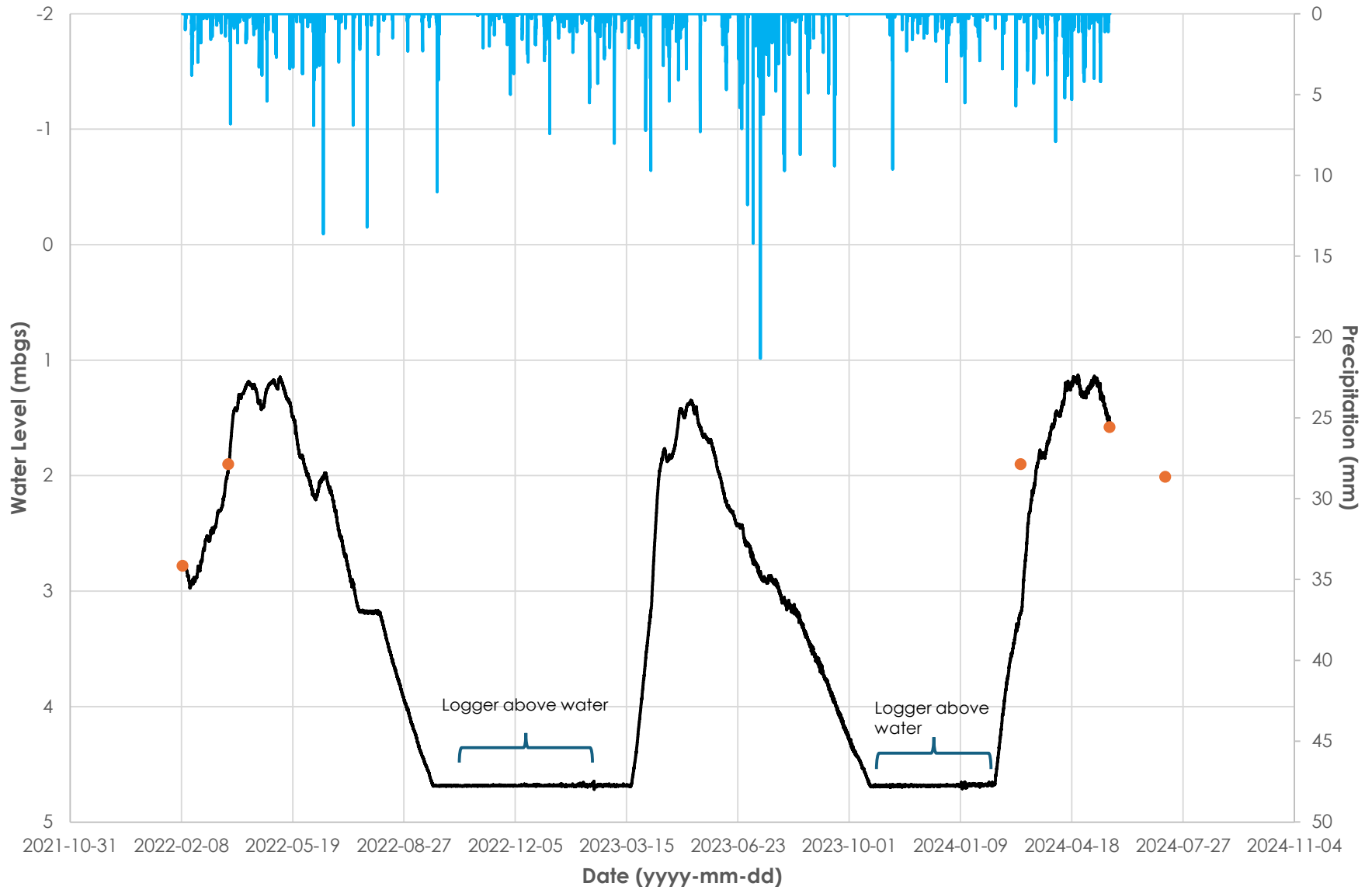


### MW10 (February 2022 - May 2024)



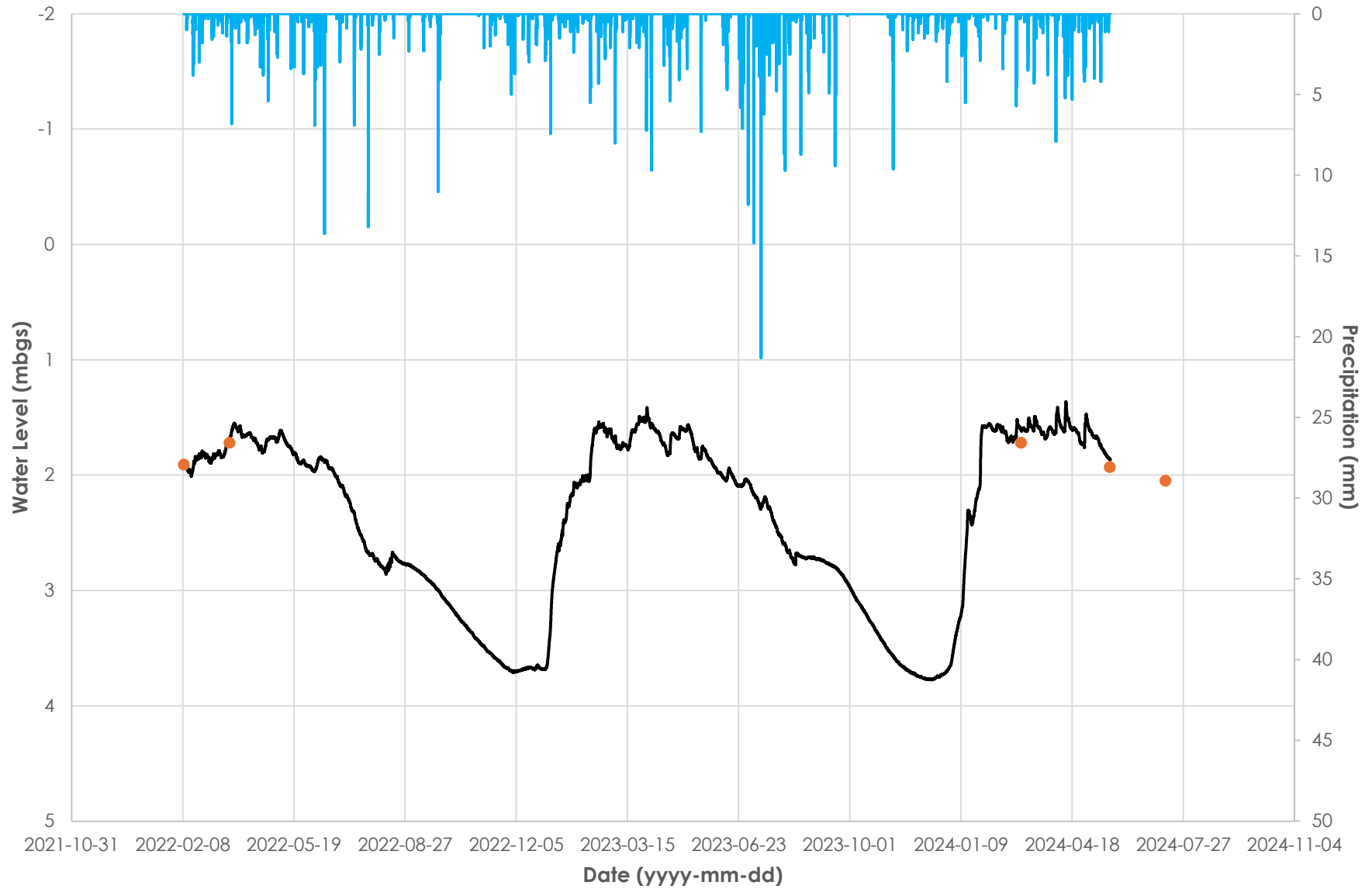
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### MW16 (February 2022-May 2024)



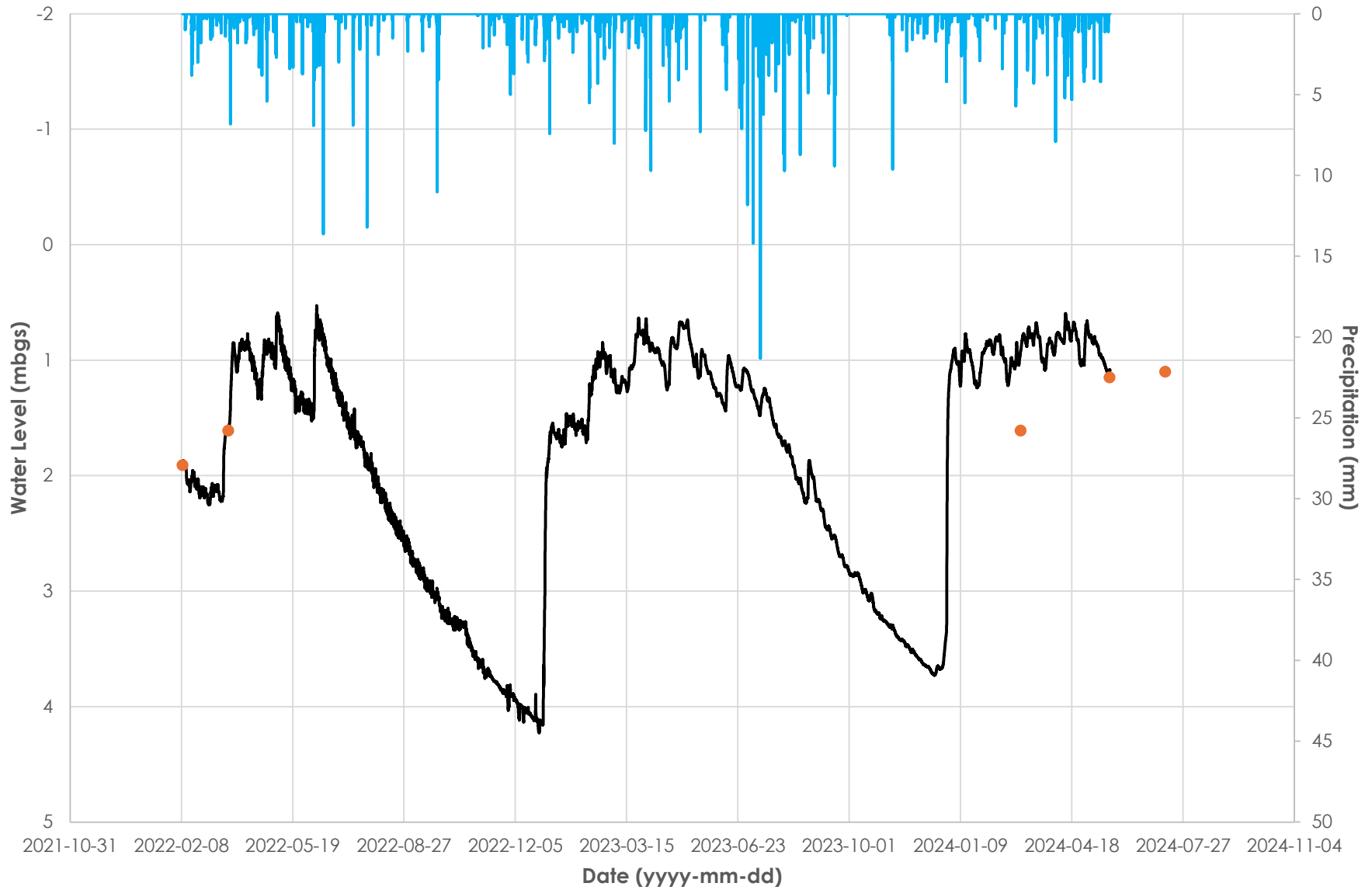
— Automatic    ● Manual    — Precipitation (mm)

### MW18 (February 2022 - May 2024)



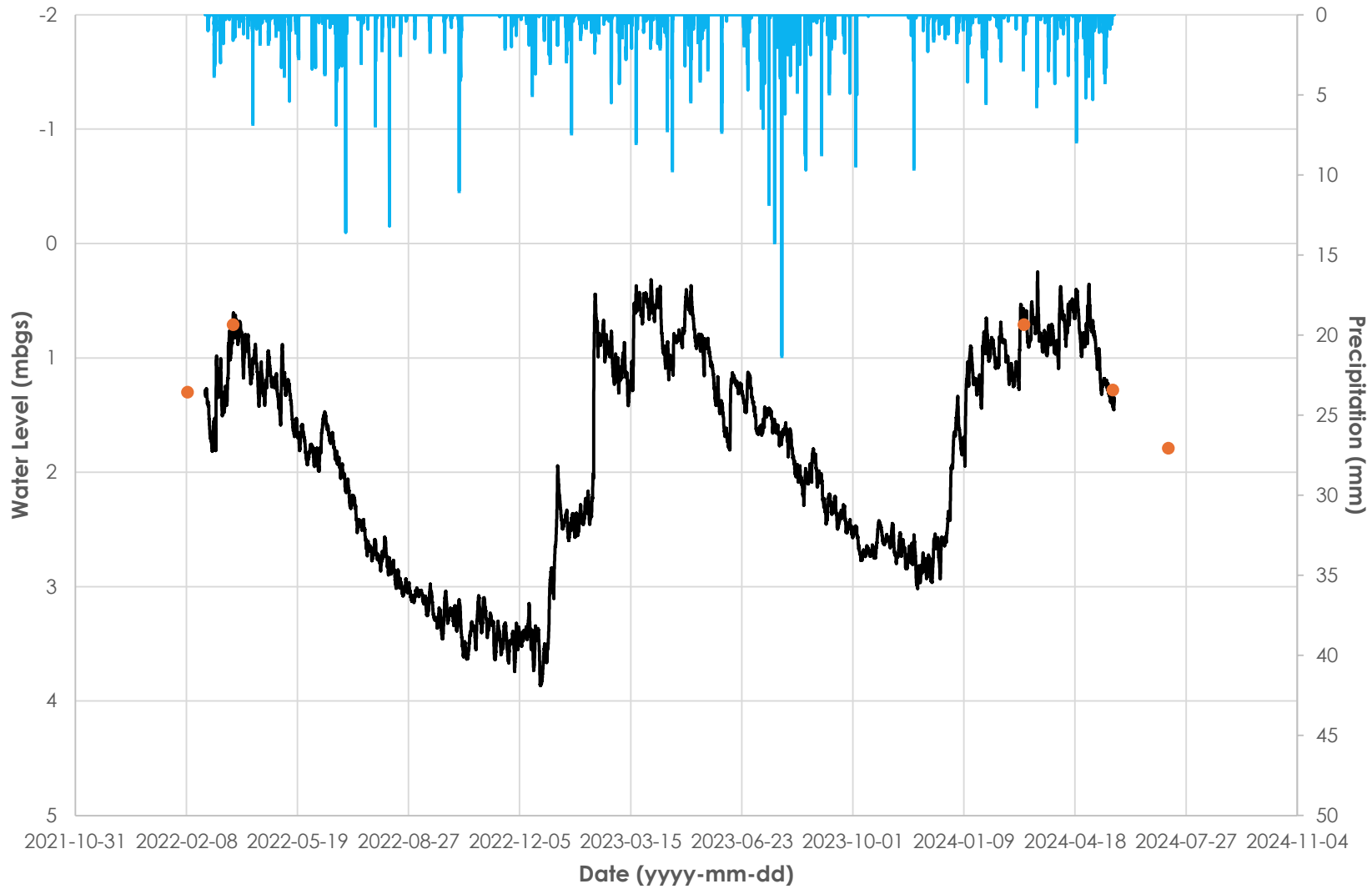
— Automatic    ● Manual    — Precipitation (mm)

### MW20 (Feburary 2022-May 2024)



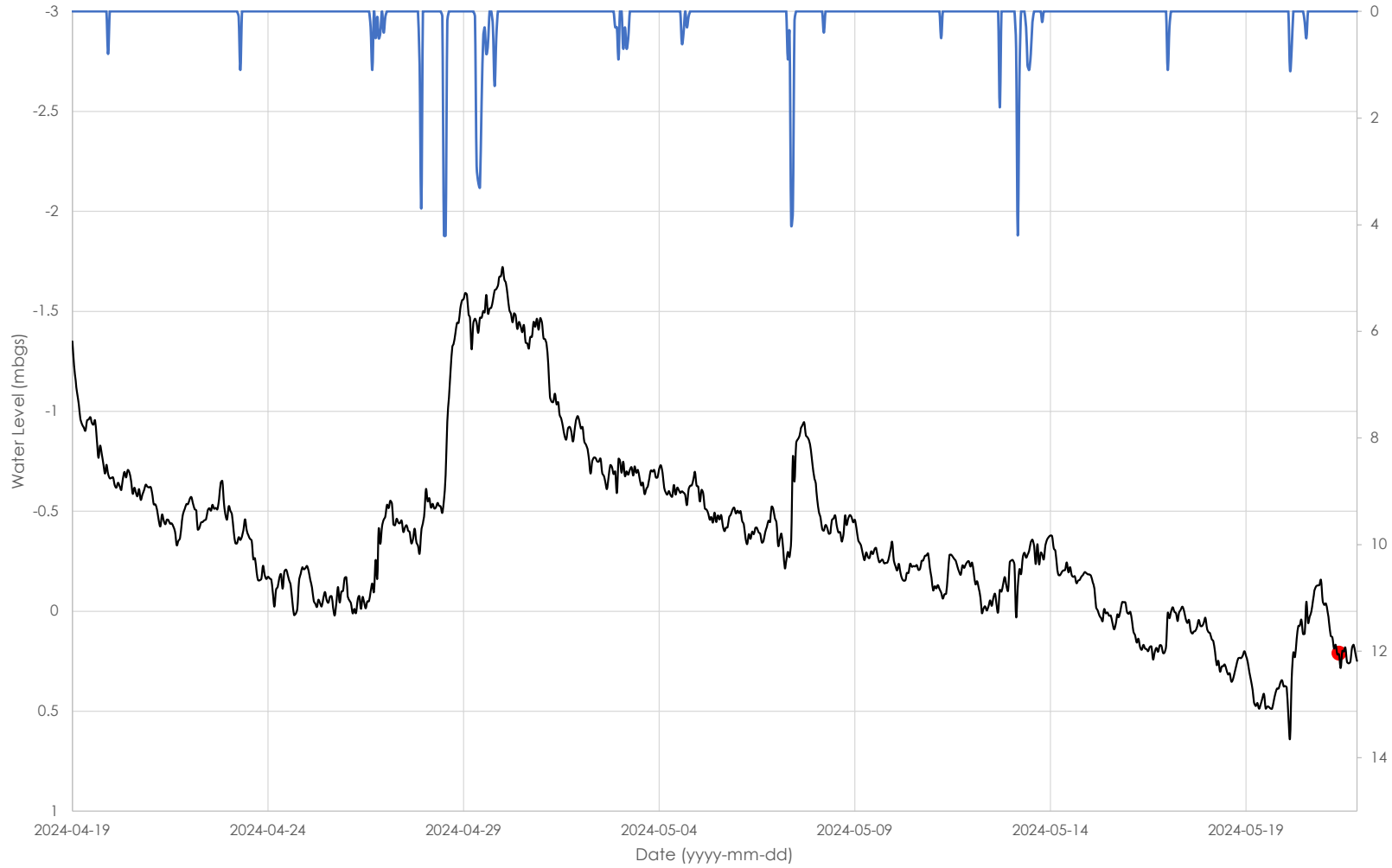
— Automatic    ● Manual    — Precipitation (mm)

### MW15 (Febraury 2022 - May 2024)



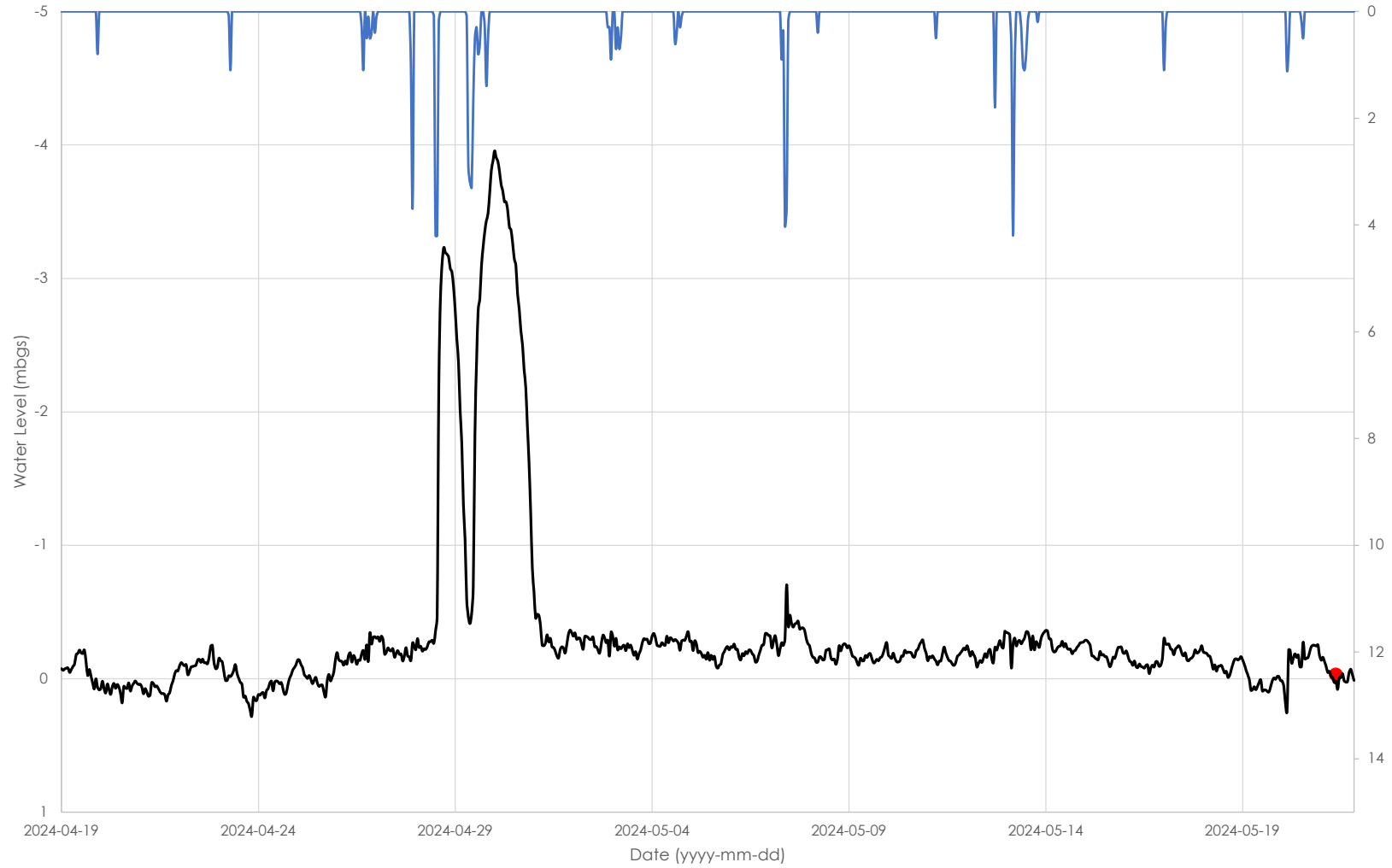
— Automatic    ● Manual    — Precipitation (mm)

### Bolton North Hill - PZ1



● Manual — Automatic — Precip. (mm)

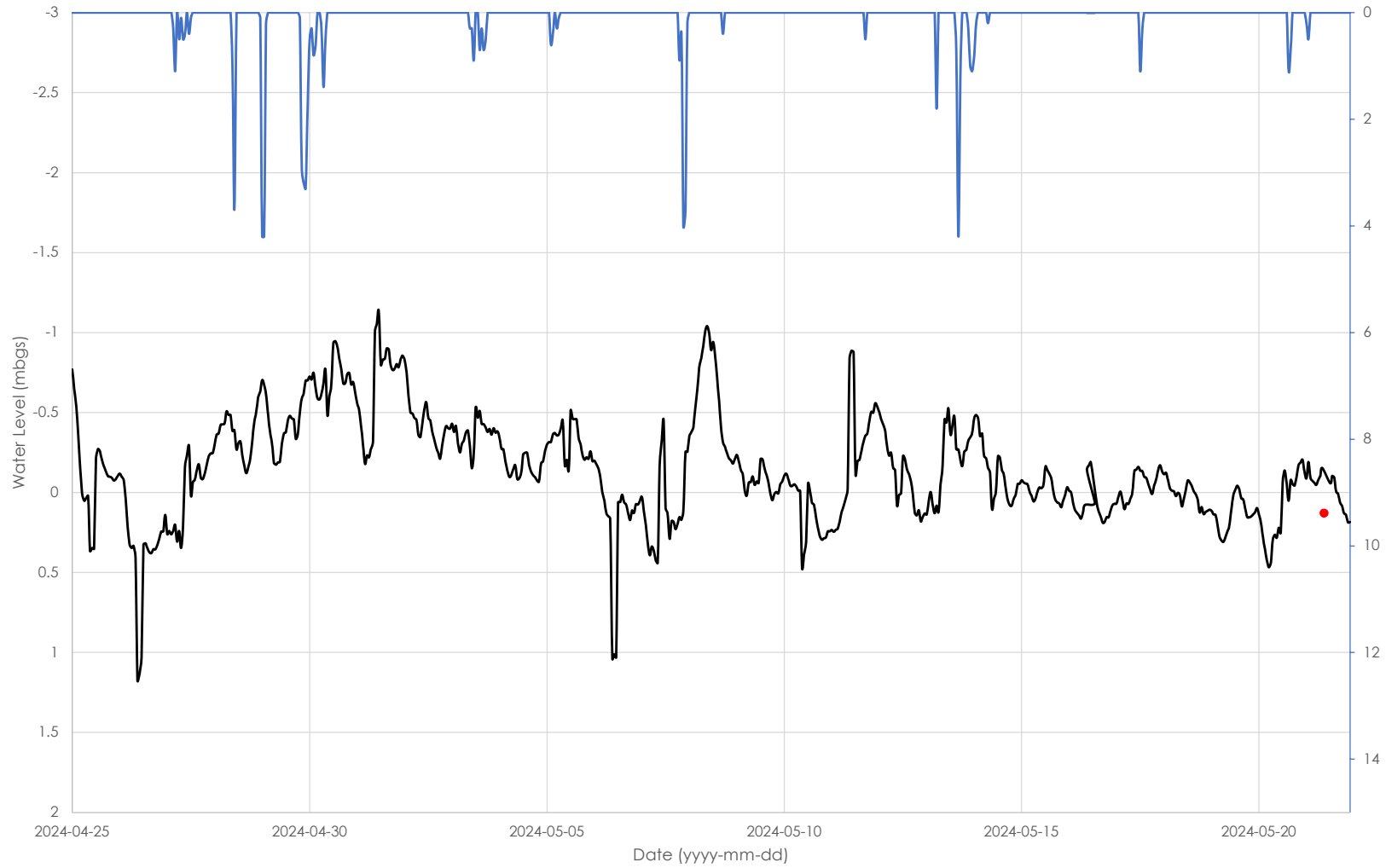
### Bolton North Hill - PZ2



● Manual — Automatic — Precip.

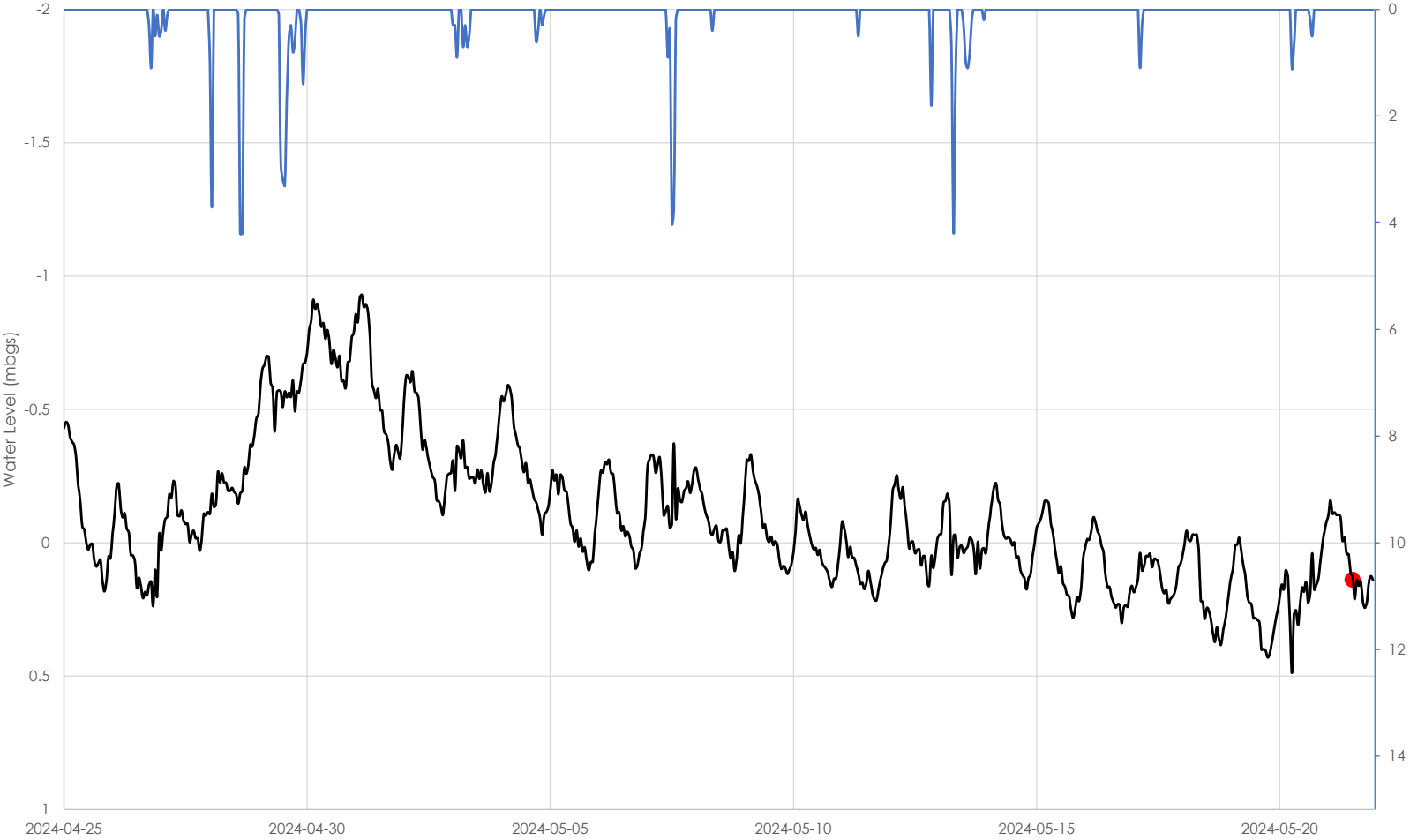


### Bolton North Hill - PZ4



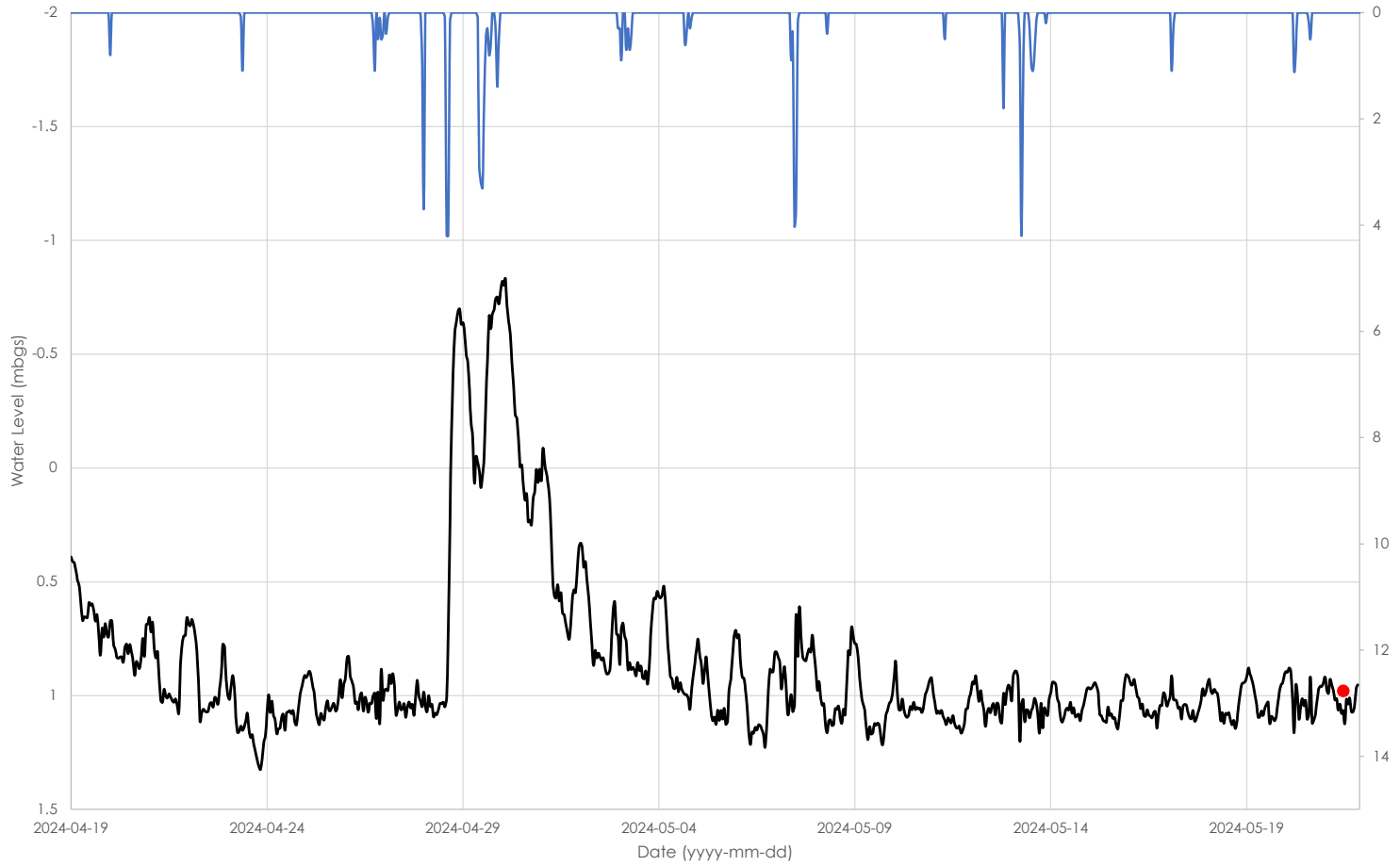
● Manual — Automatic — Precip. (mm)

### Bolton North Hill - PZ5



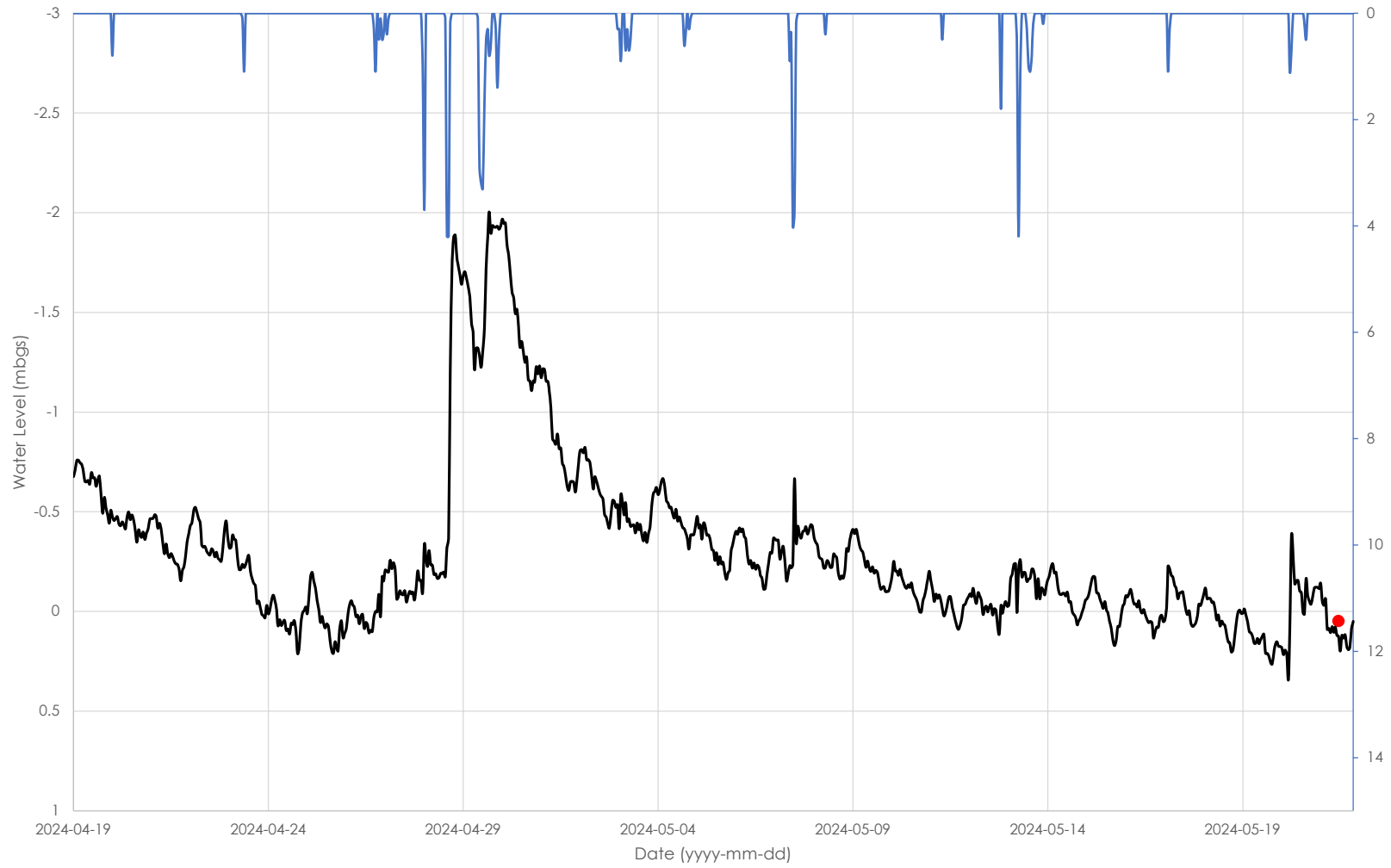
● Manual — Automatic — Precip.

### Bolton North Hill - PZ6



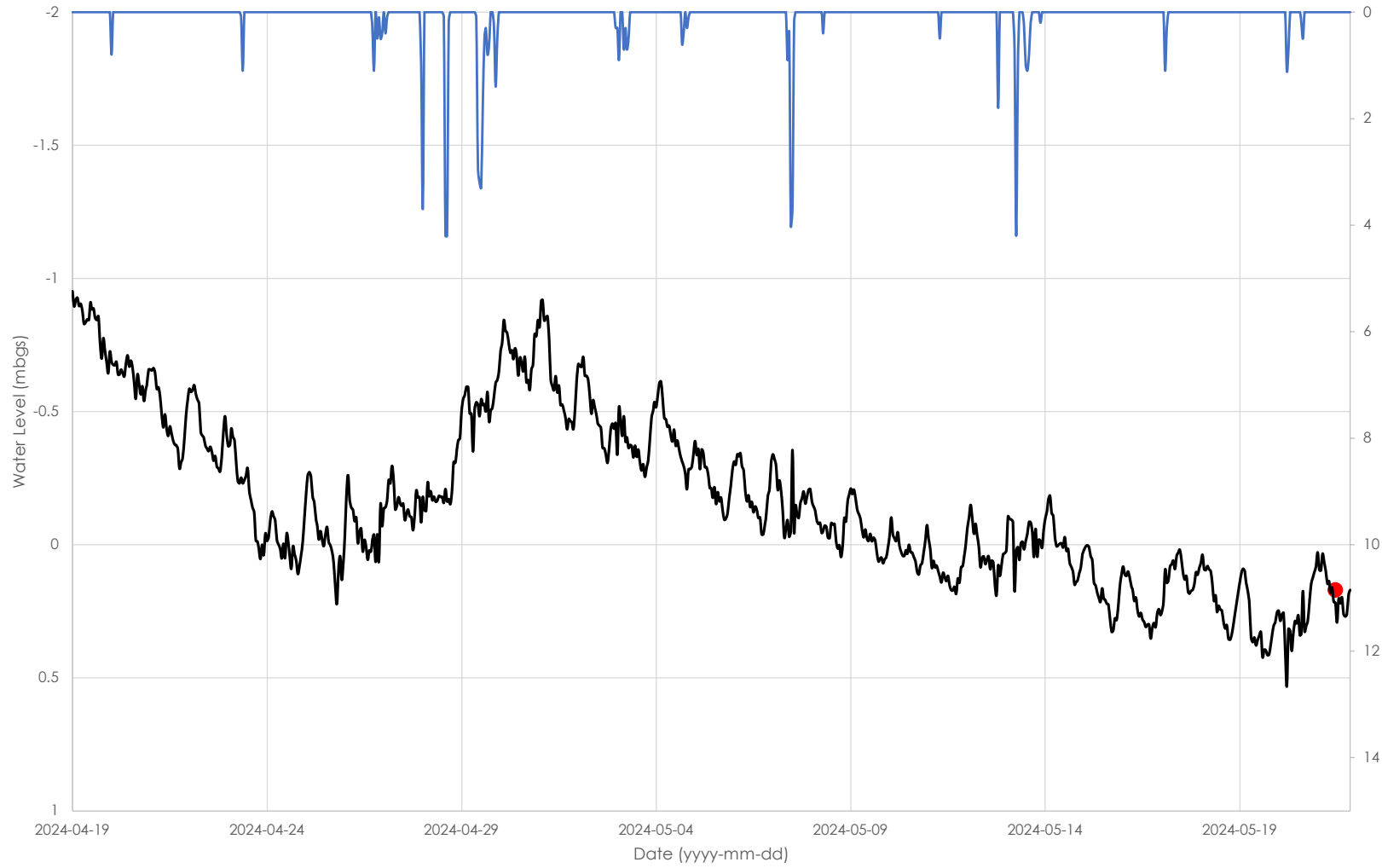
• Manual — Automatic — Precip.

### Bolton North Hill - PZ7

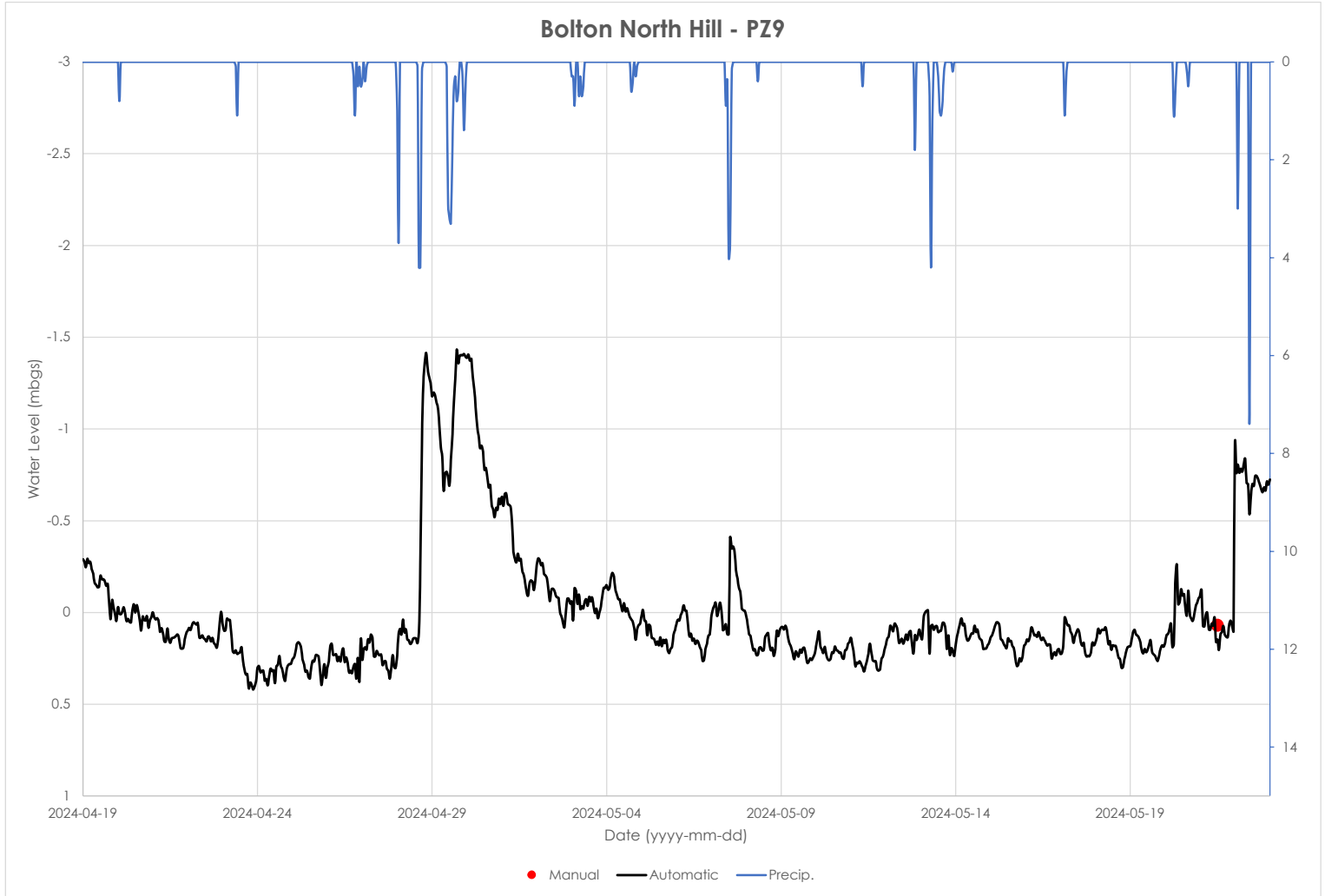


● Manual — Automatic — Precip.

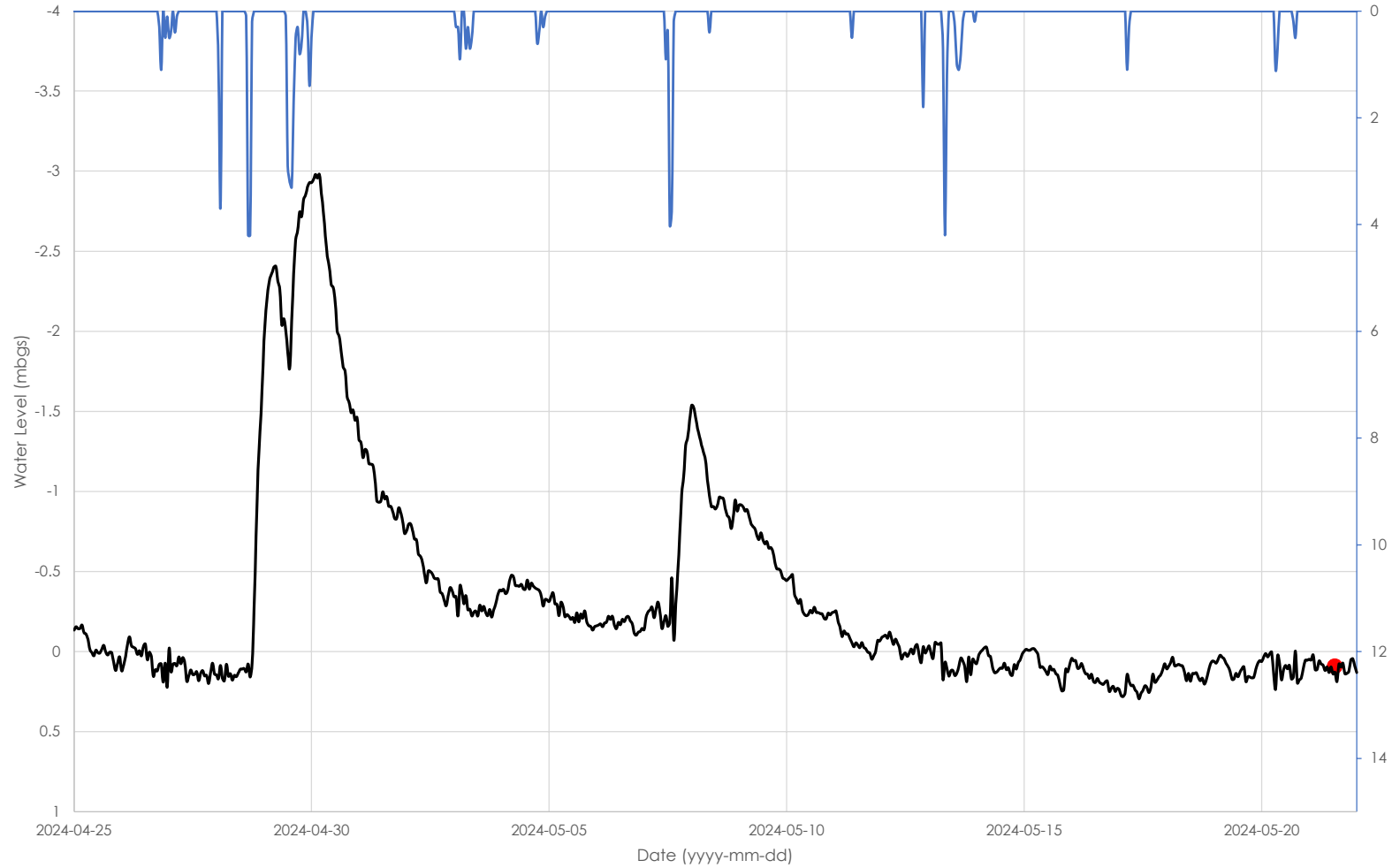
### Bolton North Hill - PZ8



● Manual — Automatic — Precip.

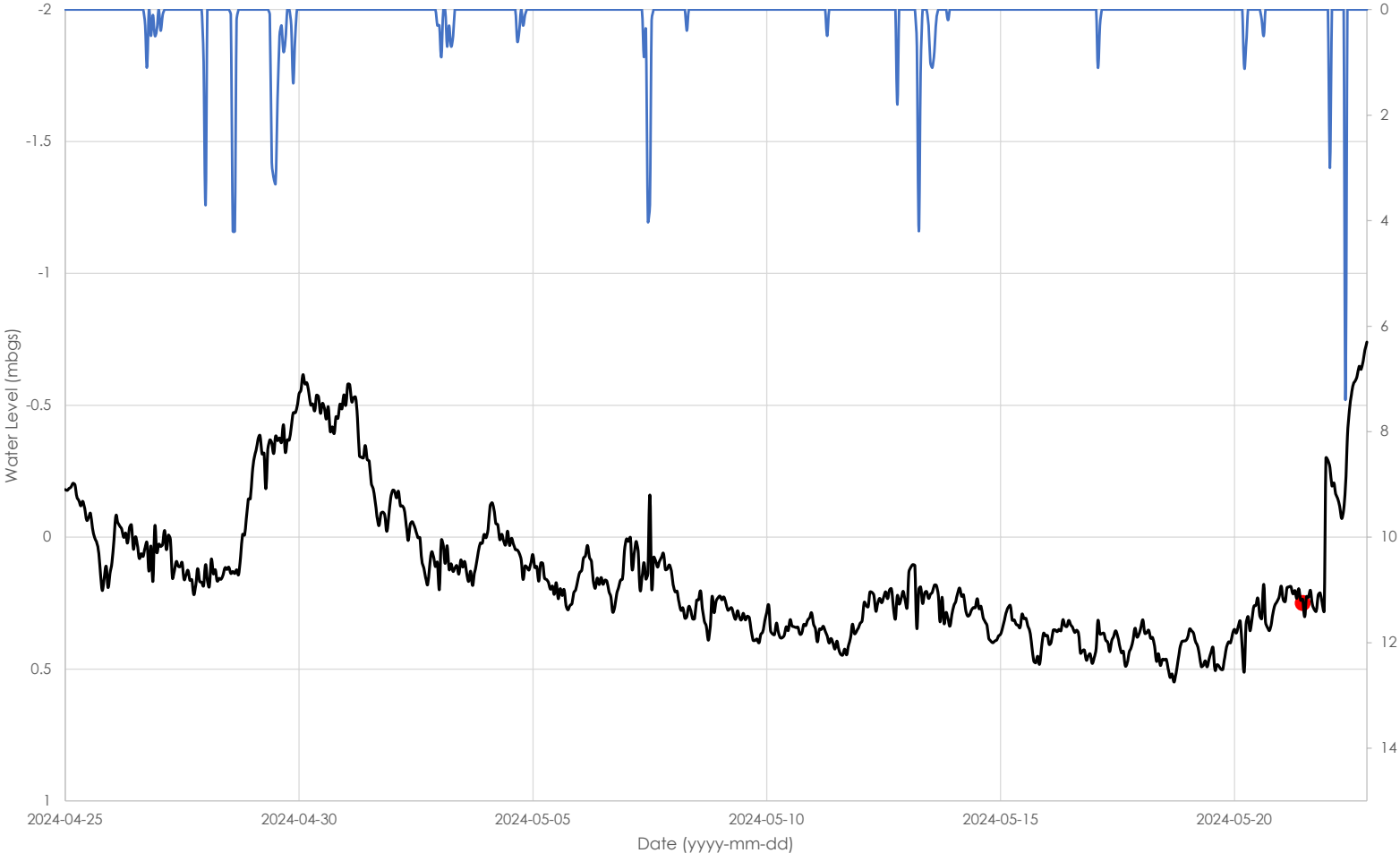


### Bolton North Hill - PZ10



● Manual — Automatic — Precip.

### Bolton North Hill - PZ15



● Manual — Automatic — Precip.



**Summary Table**

**ESTIMATED DEWATERING VOLUMES**

Wetland ID	Total Estimated Short Term Dewatering Volumes (L/day)		Estimated Duration of Open Excavation or Dewatering Activity
		with SF of 2	
A	238,839	477,678	12 months
B			
C			
D			
E			
F			
G	65,323	130,646	12 months
H	65,323	130,646	12 months
I	48,530	97,060	12 months
J	47,612	95,224	12 months
K	53393	106,786	12 months

**CALCULATION TABLES**

**LOW DENSITY DWELLING**

**ESTIMATE CONSTRUCTION DEWATERING VOLUME CALCULATIONS**

**Based on Dupuit Equation for Radial Flow to a Well or Point Source Excavation in an Unconfined Aquifer**

Component	Variable	Units	Value	Note
Conductivity of Soil	K	m/s	2.50E-07	estimated based on regional studies and literature values, ranges from $7.5 \times 10^{-8}$ m/s to $2.5 \times 10^{-7}$ m/s.
Base of Aquifer		masl	247.00	elevation of extent of excavation - 1.0 m (estimated based on borehole logs).
Elevation		masl	251.00	estimated groundwater level (Feb, 2025)
Dewatering		masl	248.00	assumed to be 2.0 m below the extent of excavation.
Extent of Excavation		masl	250.00	estimated to be approximately 7 ft or 2.25 mbgs based on Ontario Building Code minimum of 6.5 ft.
the Well	$r_w$	m	102.52	squareroot of excavation area divided by pi.
Excavation Area		m <sup>2</sup>	33000	estimated from the Concept Plan prepared by Bousfields Inc. Feb 2025

**Calculations**

Hydraulic Head of	H	m	4.00	
Hydraulic Head at	h	m	1.00	
Radius of Influence	$R_0$	m	107.02	
Pumping Rate	Q	m <sup>3</sup> /s	2.74E-04	
Dewatering Volume	Q	L/day	23681.88	

<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME</b>	<b>Q =</b>	<b>23682 L/day</b>
<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME W/ SAFETY FACTOR OF 2.0</b>	<b>Q =</b>	<b>47364 L/day</b>

**MEDIUM DENSITY DWELLING**

**ESTIMATE CONSTRUCTION DEWATERING VOLUME CALCULATIONS**

**Based on Dupuit Equation for Radial Flow to a Well or Point Source Excavation in an Unconfined Aquifer**

Component	Variable	Units	Value	Note
Conductivity of Soil	K	m/s	2.50E-07	estimated based on regional studies and literature values, ranges from $7.5 \times 10^{-8}$ m/s to $2.5 \times 10^{-7}$ m/s.
Base of Aquifer Elevation		masl	247.00	elevation of extent of excavation - 1.0 m (estimated based on borehole logs).
Dewatering Elevation		masl	251.00	estimated groundwater level (Feb, 2025)
Extent of Excavation		masl	248.00	assumed to be 2.0 m below the extent of excavation.
the Well	$r_w$	m	87.43	squareroot of excavation area divided by pi.
Excavation Area		m <sup>2</sup>	24000	estimated from the Concept Plan prepared by Bousfields Inc. Feb 2025

**Calculations**

Hydraulic Head of	H	m	4.00	
Hydraulic Head at	h	m	1.00	
Radius of Influence	$R_0$	m	91.93	
Pumping Rate	Q	m <sup>3</sup> /s	2.35E-04	
Dewatering Volume	Q	L/day	20269.70	

<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME</b>	<b>Q =</b>	<b>20270 L/day</b>
<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME W/ SAFETY FACTOR OF 2.0</b>	<b>Q =</b>	<b>40539 L/day</b>

**HIGH DENSITY DWELLING**

**ESTIMATE CONSTRUCTION DEWATERING VOLUME CALCULATIONS**

**Based on Dupuit Equation for Radial Flow to a Well or Point Source Excavation in an Unconfined Aquifer**

Component	Variable	Units	Value	Note
Conductivity of Soil	K	m/s	2.50E-07	estimated based on regional studies and literature values, ranges from $7.5 \times 10^{-8}$ m/s to $2.5 \times 10^{-7}$ m/s.
Base of Aquifer Elevation		masl	244.00	elevation of extent of excavation - 1.0 m (estimated based on borehole logs).
Dewatering Elevation		masl	251.00	estimated groundwater level
Extent of Excavation		masl	245.00	assumed to be 2.0 m below the extent of excavation.
the Well Excavation Area	$r_w$	m	21.86	squareroot of excavation area divided by pi.
		m <sup>2</sup>	1500	estimated from the Concept Plan

**Calculations**

Hydraulic Head of	H	m	7.00	
Hydraulic Head at	h	m	1.00	
Radius of Influence	$R_0$	m	30.86	
Pumping Rate	Q	m <sup>3</sup> /s	1.09E-04	
Dewatering Volume	Q	L/day	9440.52	

**TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME**

**Q = 9441 L/day**

**TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME W/ SAFETY FACTOR OF 2.0**

**Q = 18881 L/day**

**SCHOOLS**

**ESTIMATE CONSTRUCTION DEWATERING VOLUME CALCULATIONS**

**Based on Dupuit Equation for Radial Flow to a Well or Point Source Excavation in an Unconfined Aquifer**

Component	Variable	Units	Value	Note
Conductivity of Soil	K	m/s	2.50E-07	estimated based on regional studies and literature values, ranges from $7.5 \times 10^{-8}$ m/s to $2.5 \times 10^{-7}$ m/s.
Base of Aquifer Elevation		masl	252.00	elevation of extent of excavation - 1.0 m (estimated based on borehole logs).
Dewatering Elevation		masl	260.70	estimated groundwater level (Feb, 2025)
Extent of Excavation		masl	253.00	assumed to be 2.0 m below the extent of excavation.
the Well	$r_w$	m	104.06	squareroot of excavation area divided by pi.
Excavation Area		m <sup>2</sup>	34000	estimated from the Concept Plan prepared by Bousfields Inc. Feb 2025

**Calculations**

Hydraulic Head of	H	m	8.70	
Hydraulic Head at	h	m	1.00	
Radius of Influence	$R_0$	m	115.61	
Pumping Rate	Q	m <sup>3</sup> /s	5.57E-04	
Dewatering Volume	Q	L/day	48127.71	

<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME</b>	<b>Q =</b>	<b>48128 L/day</b>
<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME W/ SAFETY FACTOR OF 2.0</b>	<b>Q =</b>	<b>96255 L/day</b>

**MIXED USE**

**ESTIMATE CONSTRUCTION DEWATERING VOLUME CALCULATIONS**

**Based on Dupuit Equation for Radial Flow to a Well or Point Source Excavation in an Unconfined Aquifer**

Component	Variable	Units	Value	Note
Conductivity of Soil	K	m/s	2.50E-07	estimated based on regional studies and literature values, ranges from $7.5 \times 10^{-8}$ m/s to $2.5 \times 10^{-7}$ m/s.
Base of Aquifer Elevation		masl	252.00	elevation of extent of excavation - 1.0 m (estimated based on borehole logs).
Dewatering Extent of Excavation		masl	260.70	estimated groundwater level (Feb, 2025)
the Well		masl	253.00	assumed to be 2.0 m below the extent of excavation.
Excavation Area		masl	255.00	assuming no basement
	$r_w$	m	12.62	squareroot of excavation area divided by pi.
		m <sup>2</sup>	500	estimated from the Concept Plan prepared by Bousfields Inc. Feb 2025

**Calculations**

Hydraulic Head of	H	m	8.70	
Hydraulic Head at	h	m	1.00	
Radius of Influence	$R_0$	m	24.17	
Pumping Rate	Q	m <sup>3</sup> /s	9.02E-05	
Dewatering Volume	Q	L/day	7795.03	

<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME</b>	<b>Q =</b>	<b>7795 L/day</b>
<b>TOTAL ESTIMATED CONSTRUCTION DEWATERING VOLUME W/ SAFETY FACTOR OF 2.0</b>	<b>Q =</b>	<b>15590 L/day</b>



### Water Balance Parameters

Thornthwaite & Mather Method

Project Name: Bolton North Hill Secondary Plan

Project Number: 708-3446

Created By: CM

Checked By: CG

Date: 2025-02-28

Project Name:

**Bolton North Hill Secondary Plan**

Location:

**Caledon**

Climate Station: ALBION FIELD CENTRE  
 Longitude: 79°50'00.000" W  
 Latitude: 43°55'00.000" N  
 Elevation: 281.9 m  
 Station ID: 6150103

LATITUDE 43 DEGREES

Month	Mean Temperature (C°) <sup>1</sup>	Heat Index [i = (t/5) <sup>1.514</sup> ]	α	Potential Evapotranspiration (PET) (mm)	Correction Factor <sup>2</sup>	Adjusted Potential Evapotranspiration (APET) (mm)	Total Precipitation (P) (mm) <sup>1</sup>	P - APET (mm)	APET - P (mm)
January	-7	0.0000	0.4924	0.0000	0.81	0	60.4	60.4	0.0
February	-5.9	0.0000	0.4924	0.0000	0.82	0	50.2	50.2	0.0
March	-1.4	0.0000	0.4924	0.0000	1.02	0	50.3	50.3	0.0
April	6.1	1.3513	0.5165	28.8545	1.12	32	67	34.7	0.0
May	12.4	3.9555	0.5621	60.8270	1.26	77	76.1	0.0	0.5
June	17.3	6.5488	0.6066	86.3244	1.28	110	75.5	0.0	35.0
July	19.9	8.0951	0.6328	100.0131	1.29	129	81.8	0.0	47.2
August	19.1	7.6075	0.6246	95.7908	1.2	115	77.4	0.0	37.5
September	14.3	4.9084	0.5786	70.6617	1.04	73	75	1.5	0.0
October	8.1	2.0759	0.5293	38.8760	0.95	37	68.3	31.4	0.0
November	2.1	0.2689	0.4972	9.4052	0.81	8	81.7	74.1	0.0
December	-3.9	0.0000	0.4924	0.0000	0.77	0	57.7	57.7	0.0
<b>TOTAL</b>	<b>6.8</b>	<b>34.8</b>	<b>1.1</b>			<b>581.5</b>	<b>821.4</b>	<b>360.24</b>	<b>120.30</b>

**TOTAL WATER DEFICIT = 120.30 mm**  
**TOTAL WATER SURPLUS (SURPLUS - DEFICIT) = 239.94 mm**

NOTES: 1. Precipitation and Temperature data from the ALBION FIELD CENTRE (Station No.6150103 ) Environment Canada Station Data  
 2. Latitude adjustment factors determined based on site latitude assuming 12 hours of sunlight per day for 30 days





Catchment ID	Woodlots												
Evapotranspiration/Evaporation Analysis													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Precipitation (P)	60	50	50	67	76	76	82	77	75	68	82	58	<b>821</b>
Adjusted Potential Evapotranspiration (APET)	0	0	0	32	77	110	129	115	73	37	8	0	581
P-APET	60	50	50	35	-1	-35	-47	-38	2	31	74	58	240
Change in Storage	0	0	0	0	-1	-35	-47	-38	2	31	74	13	120
Storage (S) (mm)	400	400	400	400	399	364	317	280	281	313	387	400	
Pervious Area Infiltration/Runoff Analysis													
Water Surplus (mm)	60	50	50	35	0	0	0	0	0	0	0	44	240
Potential Infiltration (I) (mm)	36	30	30	21	0	0	0	0	0	0	0	27	144
Potential Direct Surface Water Runoff (R) (mm)	24	20	20	14	0	0	0	0	0	0	0	18	96
Impervious Area Evapotranspiration/Evaporation/Runoff Analysis													
Impervious Evapotranspiration/Evaporation (mm)	0	0	0	10	11	11	12	12	11	10	12	0	90
Impervious Runoff (mm)	60	50	50	57	65	64	70	66	64	58	69	58	<b>731</b>
Combined Water Balance													
Pervious ET (m <sup>3</sup> )	0	0	0	7281	17267	24894	29067	25897	16556	8321	1716	0	<b>130999</b>
Impervious ET (m <sup>3</sup> )	0	0	0	46	52	52	56	53	52	47	56	0	<b>416</b>
Pervious Runoff (m <sup>3</sup> )	5443	4524	4533	3126	0	0	0	0	0	0	0	3997	<b>21623</b>
Impervious Runoff (m <sup>3</sup> )	278	231	231	262	297	295	320	303	293	267	319	265	<b>3361</b>
Pervious Infiltration (m <sup>3</sup> )	8165	6786	6799	4688	0	0	0	0	0	0	0	5996	<b>32434</b>
Impervious Infiltration (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>

Catchment ID	Water												
Evapotranspiration/Evaporation Analysis													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Precipitation (P)	60	50	50	67	76	76	82	77	75	68	82	58	<b>821</b>
Adjusted Potential Evapotranspiration (APET)	0	0	0	32	77	110	129	115	73	37	8	0	581
P-APET	60	50	50	35	-1	-35	-47	-38	2	31	74	58	240
Change in Storage	0	0	0	0	-1	-35	-47	-38	2	31	74	13	120
Storage (S) (mm)	200	200	200	200	199	164	117	80	81	113	187	200	
Pervious Area Infiltration/Runoff Analysis													
Water Surplus (mm)	60	50	50	35	0	0	0	0	0	0	0	44	240
Potential Infiltration (I) (mm)	42	35	35	24	0	0	0	0	0	0	0	31	168
Potential Direct Surface Water Runoff (R) (mm)	18	15	15	10	0	0	0	0	0	0	0	13	72
Impervious Area Evapotranspiration/Evaporation/Runoff Analysis													
Impervious Evapotranspiration/Evaporation (mm)	0	0	0	10	11	11	12	12	11	10	12	0	90
Impervious Runoff (mm)	60	50	50	57	65	64	70	66	64	58	69	58	<b>731</b>
Combined Water Balance													
Pervious ET (m <sup>3</sup> )	0	0	0	634	1504	2168	2532	2256	1442	725	149	0	<b>11411</b>
Impervious ET (m <sup>3</sup> )	0	0	0	4	5	5	5	5	5	4	5	0	<b>36</b>
Pervious Runoff (m <sup>3</sup> )	356	296	296	204	0	0	0	0	0	0	0	261	<b>1413</b>
Impervious Runoff (m <sup>3</sup> )	24	20	20	23	26	26	28	26	26	23	28	23	<b>293</b>
Pervious Infiltration (m <sup>3</sup> )	830	690	691	476	0	0	0	0	0	0	0	609	<b>3296</b>
Impervious Infiltration (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>

Pre-Development Water Balance Summary			
Pre-Development Infiltration	216624.9	m <sup>3</sup> /yr	121.3 mm/yr
Pre-Development Runoff	228022.4	m <sup>3</sup> /yr	127.7 mm/yr

- NOTES: 1.Areas and percent imperviousness determined using Concept Plan dated 45689 prepared by Bousfields Inc. .  
2.The infiltration factor is determined using the MECP Methodology outlined in Stormwater Drainage Manual 2003.  
3. Additional assumptions:  
> Surplus water is unavailable for runoff and recharge in months where water losses from AET exceed precipitation inputs.  
> Runoff, infiltration and evapotranspiration do not occur when average temperature is below zero.  
> Precipitation during winter months (Dec. through Mar. is assumed to be accumulated as snow.  
> Soil Moisture Capacity is at a maximum in April.







Catchment ID	Roads												
Evapotranspiration/Evaporation Analysis													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Precipitation (P)	60	50	50	67	76	76	82	77	75	68	82	58	821
Adjusted Potential Evapotranspiration (APET)	0	0	0	32	77	110	129	115	73	37	8	0	581
P-APET	60	50	50	35	-1	-35	-47	-38	2	31	74	58	240
Change in Storage	0	0	0	0	-1	-35	-47	-38	2	31	74	13	
Storage (S) (mm)	250	250	250	250	249	214	167	130	131	163	237	250	
Pervious Area Infiltration/Runoff Analysis													
Water Surplus (mm)	60	50	50	35	0	0	0	0	0	0	0	44	240
Potential Infiltration (I) (mm)	36	30	30	21	0	0	0	0	0	0	0	27	144
Potential Direct Surface Water Runoff (R) (mm)	24	20	20	14	0	0	0	0	0	0	0	18	96
Impervious Area Evapotranspiration/Evaporation/Runoff Analysis													
Impervious Evapotranspiration/Evaporation (mm)	0	0	0	10	11	11	12	12	11	10	12	0	90
Impervious Runoff (mm)	60	50	50	57	65	64	70	66	64	58	69	58	731
Combined Water Balance													
Pervious ET (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0
Impervious ET (m <sup>3</sup> )	0	0	0	4946	5618	5573	6038	5714	5536	5042	6031	0	44498
Pervious Runoff (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0
Impervious Runoff (m <sup>3</sup> )	29724	24705	24754	28027	31833	31582	34217	32377	31373	28570	34176	28396	359734
Pervious Infiltration (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0
Impervious Infiltration (m <sup>3</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0

Post-Development Water Balance Summary						
Post-Development Infiltration	63320.3	m <sup>3</sup> /yr	35.5	mm/yr	0.0011	L/s
Post-Development Runoff	898637.5	m <sup>3</sup> /yr	503.2	mm/yr	0.0160	L/s

- NOTES: 1.Areas and percent imperviousness determined using Concept Plan dated 45689 prepared by Bousfields Inc. .  
2.The infiltration factor is determined using the MECP Methodology outlined in SWM 2003 Manual.  
3. Additional assumptions:  
> Surplus water is unavailable for runoff and recharge in months where water losses from AET exceed precipitation inputs.  
> Runoff, infiltration and evapotranspiration do not occur when average temperature is below zero.  
> Precipitation during winter months (Dec. through Mar. is assumed to be accumulated as snow.  
> Soil Moisture Capacity is at a maximum in April.



**Water Balance Summary**  
Thornthwaite & Mather Method

Project Name: Bolton North Hill Secondary Plan  
 Project Number: 708-3446  
 Created By: CM  
 Checked By: CG  
 Date: 2025-02-28

Project Name: **Bolton North Hill Secondary Plan**  
 Location: **Caledon**

Characteristic	Pre-Development	Post-Development	% Change (Pre to Post)
Precipitation (mm/yr)	821.40	821.40	0%
Water Surplus (mm/yr)	239.94	239.94	0%
Evapotranspiration (mm/yr)	581.46	581.46	0%
Natural Infiltration (mm/yr)	121.31	35.46	-71%
Infiltration through LID Measures (mm/yr)	0.00	0.00	-
Total Infiltration (mm/yr)	121.31	35.46	-71%
Total Runoff (mm/yr)	127.69	503.24	294%

<b>Infiltration Deficit (mm/yr)</b>	<b>85.85</b>
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### Adjustment Factors Based on Site Latitude Based on 12 hours of Sunlight per day for 30 days

Latitude °C	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
50	0.74	0.78	1.02	1.15	1.33	1.36	1.37	1.25	1.06	0.92	0.76	0.70
49	0.75	0.79	1.02	1.14	1.32	1.34	1.35	1.24	1.05	0.93	0.76	0.71
48	0.76	0.80	1.02	1.14	1.31	1.33	1.34	1.23	1.05	0.93	0.77	0.72
47	0.77	0.80	1.02	1.14	1.30	1.32	1.33	1.22	1.04	0.93	0.78	0.73
46	0.79	0.81	1.02	1.13	1.29	1.31	1.32	1.22	1.04	0.94	0.79	0.74
45	0.80	0.81	1.02	1.13	1.28	1.29	1.31	1.21	1.04	0.94	0.79	0.75
44	0.81	0.82	1.02	1.13	1.27	1.29	1.30	1.20	1.04	0.95	0.80	0.76
43	0.81	0.82	1.02	1.12	1.26	1.28	1.29	1.20	1.04	0.95	0.81	0.77
42	0.82	0.83	1.03	1.12	1.26	1.27	1.28	1.19	1.04	0.95	0.82	0.79
41	0.83	0.83	1.03	1.11	1.25	1.26	1.27	1.19	1.04	0.96	0.82	0.80
40	0.84	0.83	1.03	1.11	1.24	1.25	1.27	1.18	1.04	0.96	0.83	0.81
39	0.85	0.84	1.03	1.11	1.23	1.24	1.26	1.18	1.04	0.96	0.84	0.82
38	0.85	0.84	1.03	1.10	1.23	1.24	1.25	1.17	1.04	0.96	0.84	0.83
37	0.86	0.84	1.03	1.10	1.22	1.23	1.25	1.17	1.03	0.97	0.85	0.83
36	0.87	0.85	1.03	1.10	1.21	1.22	1.24	1.16	1.03	0.97	0.86	0.84
35	0.87	0.85	1.03	1.09	1.21	1.21	1.23	1.16	1.03	0.97	0.86	0.85
34	0.88	0.85	1.03	1.09	1.20	1.20	1.22	1.16	1.03	0.97	0.87	0.86
33	0.88	0.86	1.03	1.09	1.19	1.20	1.22	1.15	1.03	0.97	0.88	0.86
32	0.89	0.86	1.03	1.08	1.19	1.19	1.21	1.15	1.03	0.98	0.88	0.87
31	0.90	0.87	1.03	1.08	1.18	1.18	1.20	1.14	1.03	0.98	0.89	0.88
30	0.90	0.87	1.03	1.08	1.18	1.17	1.20	1.14	1.03	0.98	0.89	0.88
29	0.91	0.87	1.03	1.07	1.17	1.16	1.19	1.13	1.03	0.98	0.90	0.89
28	0.91	0.88	1.03	1.07	1.16	1.16	1.18	1.13	1.02	0.98	0.90	0.90
27	0.92	0.88	1.03	1.07	1.16	1.15	1.18	1.13	1.02	0.99	0.90	0.90
26	0.92	0.88	1.03	1.06	1.15	1.15	1.17	1.12	1.02	0.99	0.91	0.91
25	0.93	0.89	1.03	1.06	1.15	1.14	1.17	1.12	1.02	0.99	0.91	0.91
20	0.95	0.90	1.03	1.05	1.13	1.11	1.14	1.11	1.02	1.00	0.93	0.94
15	0.97	0.91	1.03	1.04	1.11	1.08	1.12	1.08	1.02	1.01	0.95	0.97
10	1.00	0.91	1.03	1.03	1.08	1.06	1.08	1.07	1.02	1.02	0.98	0.99
5	1.02	0.93	1.03	1.02	1.06	1.03	1.06	1.05	1.01	1.03	0.99	1.02
0	1.04	0.94	1.04	1.01	1.04	1.01	1.04	1.04	1.01	1.04	1.01	1.04
-5	1.06	0.91	1.04	1.00	1.02	0.99	1.02	1.03	1.00	1.05	1.03	1.06
-10	1.08	0.97	1.05	0.99	1.01	0.96	1.00	1.01	1.00	1.06	1.05	1.10
-15	1.12	0.98	1.05	0.98	0.98	0.94	0.97	1.00	1.00	1.07	1.07	1.12
-20	1.14	1.00	1.05	0.97	0.96	0.91	0.95	0.99	1.00	1.08	1.09	1.15
-25	1.17	1.01	1.05	0.96	0.94	0.88	0.93	0.98	1.00	1.10	1.11	1.18
-30	1.20	1.03	1.06	0.95	0.92	0.85	0.90	0.96	1.00	1.12	1.14	1.21
-35	1.23	1.04	1.06	0.94	0.89	0.82	0.87	0.94	1.00	1.13	1.17	1.25
-45	1.27	1.06	1.07	0.93	0.86	0.78	0.84	0.92	1.00	1.15	1.20	1.29
-42	1.28	1.07	1.07	0.92	0.85	0.76	0.82	0.92	1.00	1.16	1.22	1.31
-44	1.30	1.08	1.07	0.92	0.83	0.74	0.81	0.91	0.99	1.17	1.23	1.33
-46	1.32	1.10	1.07	0.91	0.82	0.72	0.79	0.90	0.99	1.17	1.25	1.35
-48	1.34	1.11	1.08	0.90	0.80	0.70	0.76	0.89	0.99	1.18	1.27	1.37
-50	1.37	1.12	1.08	0.89	0.77	0.67	0.74	0.88	0.99	1.19	1.29	1.41

Source: Dunne, T. and Leopold, L.B., 1978. Water in environmental planning, Freeman Publishers.