

APPENDIX 5

Hydrogeology (LVM, a division of EnGlobe Corp.):

- 5.1 Borehole, Mini Piezometer & Test Pit Logs
- 5.2 Slug Test Analyses
- 5.3 Figures – Particle Size Analysis
- 5.4 Laboratory Certificates of Analysis
- 5.5 MOECC Water Well Records & Municipal Well Logs
- 5.6 Groundwater Hydrographs



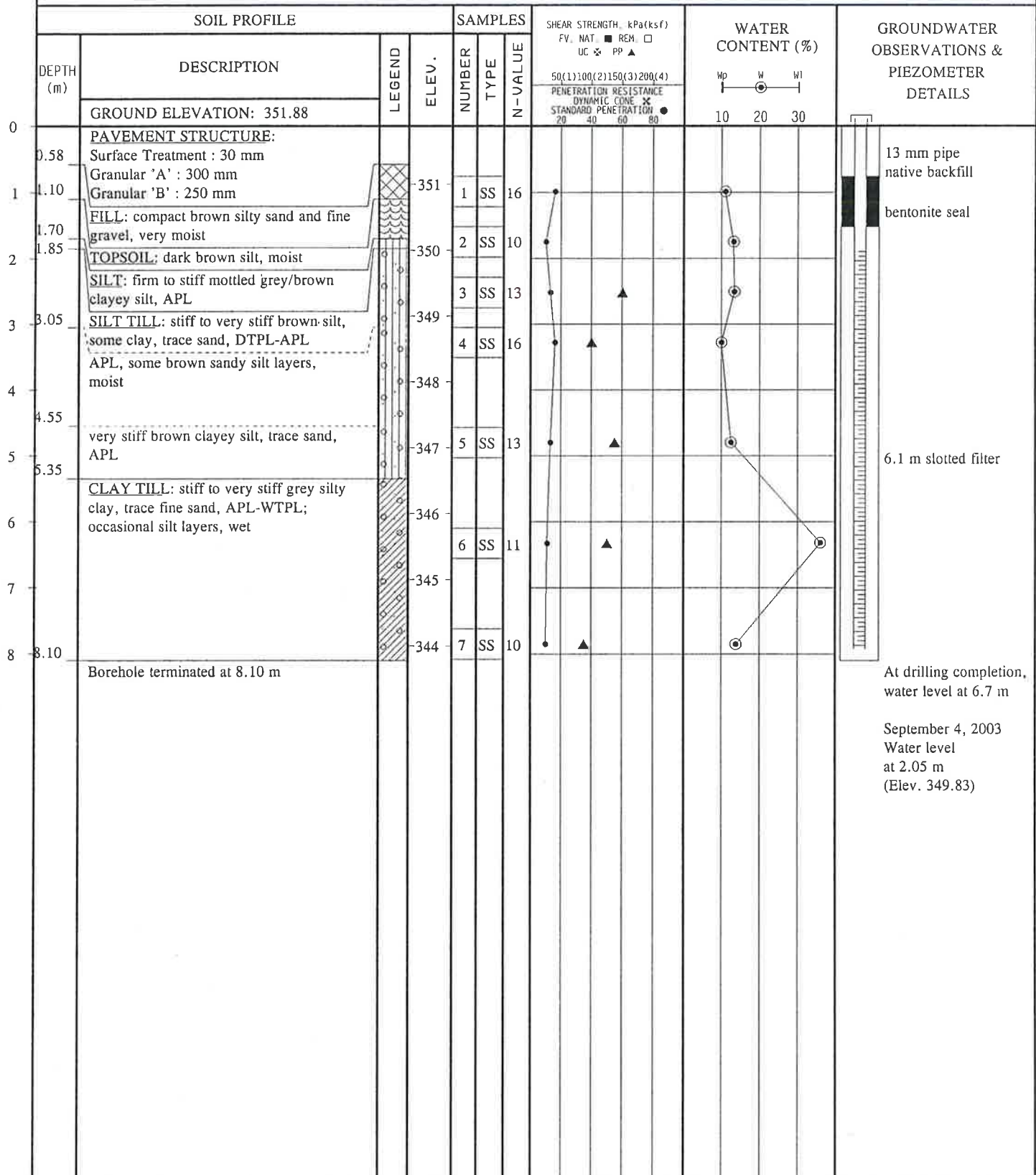
PROJECT Wideman Road Sanitary Sewer

DATE 29 August 2003

JOB NO. 1704G10

LOCATION Wideman Road and Erbsville Road, Waterloo, Ontario

FIELD ENG/TECH RM



NOTES: Bulk sample taken from 2.1 to 3.0 m

DRILLING METHOD: Hollow Stem Augers



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BOREHOLE: 2

Sheet 1 of 1

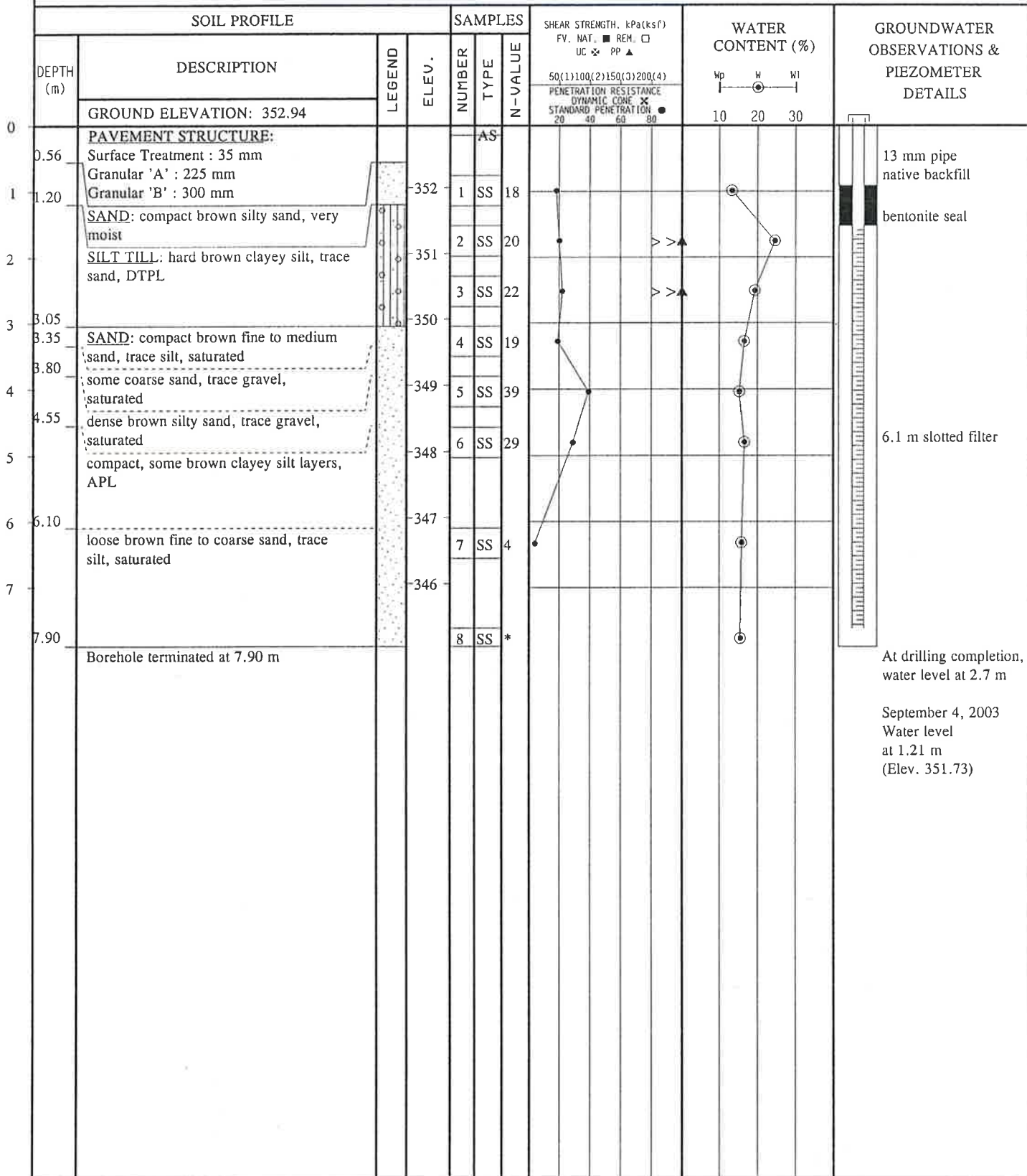
PROJECT Wideman Road Sanitary Sewer

DATE 29 August 2003

JOB NO. 1704G10

LOCATION Wideman Road and Erbsville Road, Waterloo, Ontario

FIELD ENG/TECH RM



NOTES: * Split spoon full

DRILLING METHOD: Hollow Stem Augers



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ENGINEER:

JD



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BOREHOLE: 3

Sheet 1 of 1

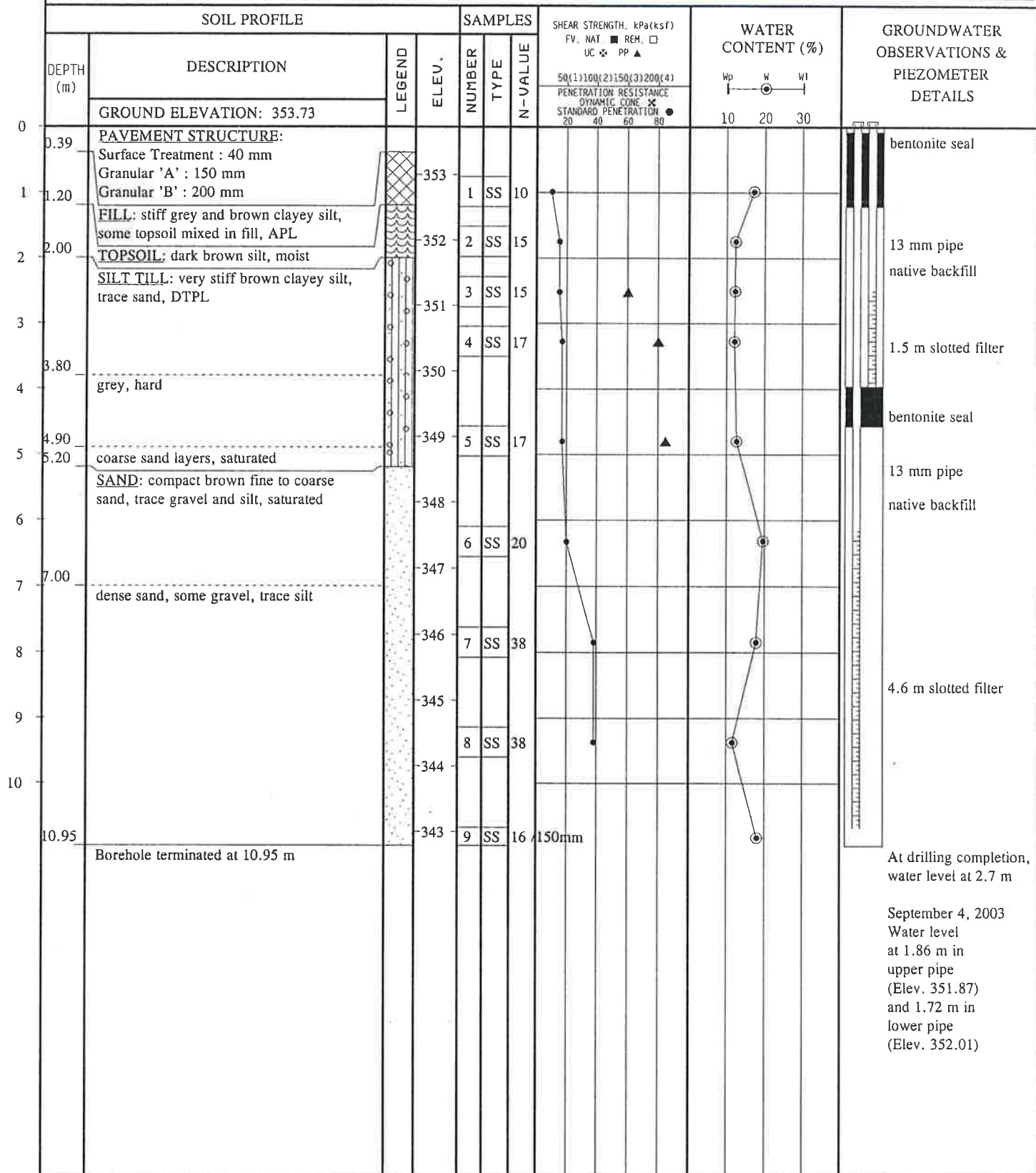
PROJECT Wideman Road Sanitary Sewer

DATE 29 August 2003

JOB NO. 1704G10

LOCATION Wideman Road and Erbsville Road, Waterloo, Ontario

FIELD ENG/TECH RM



NOTES: Bulk sample taken from 2.1 to 3.7 m

DRILLING METHOD: Hollow Stem Augers



ENGINEER: *JD*



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BOREHOLE: 4
Sheet 1 of 1

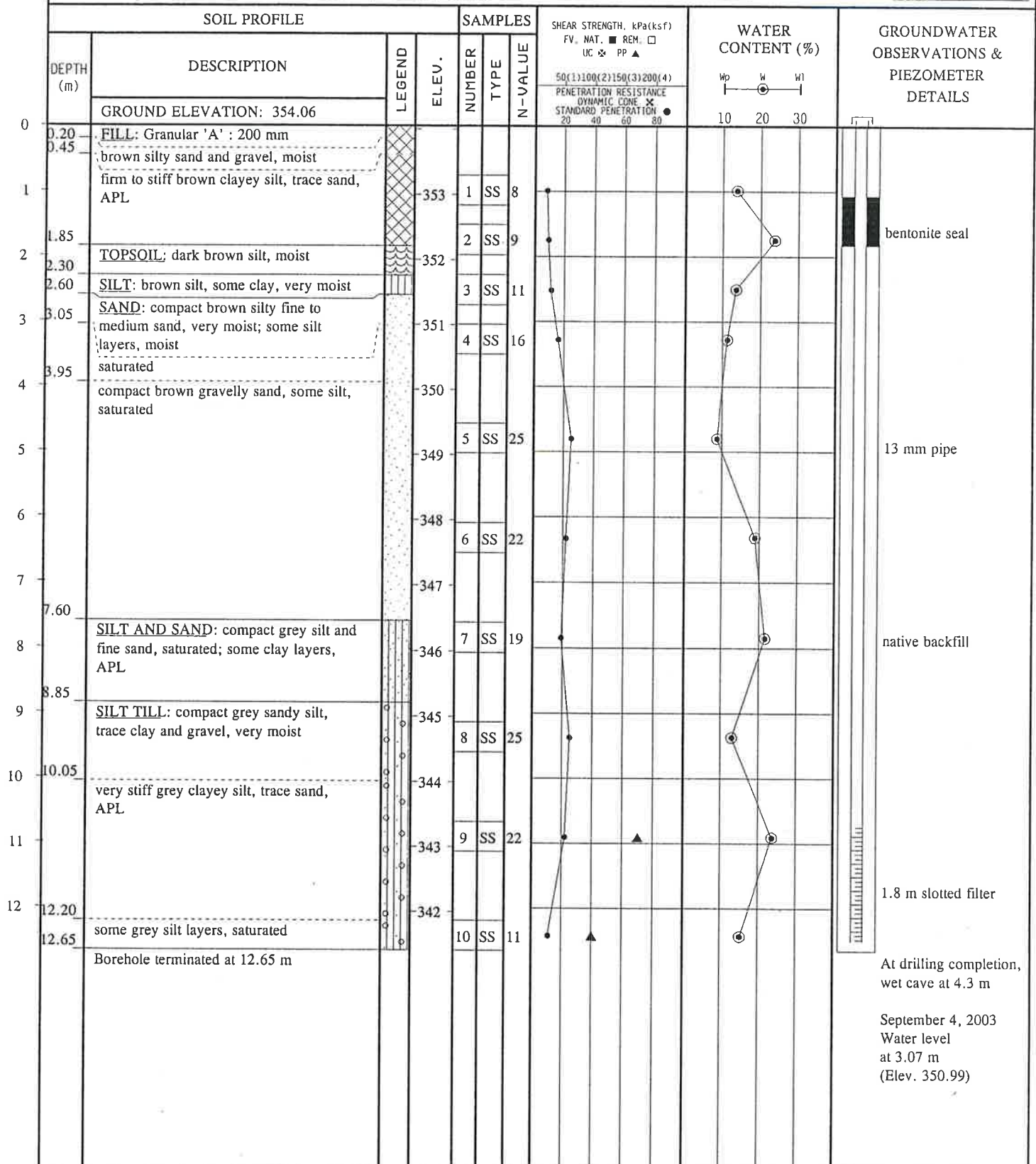
PROJECT Wideman Road Sanitary Sewer

DATE 29 August 2003

JOB NO. 1704G10

LOCATION Wideman Road and Erbsville Road, Waterloo, Ontario

FIELD ENG/TECH RM



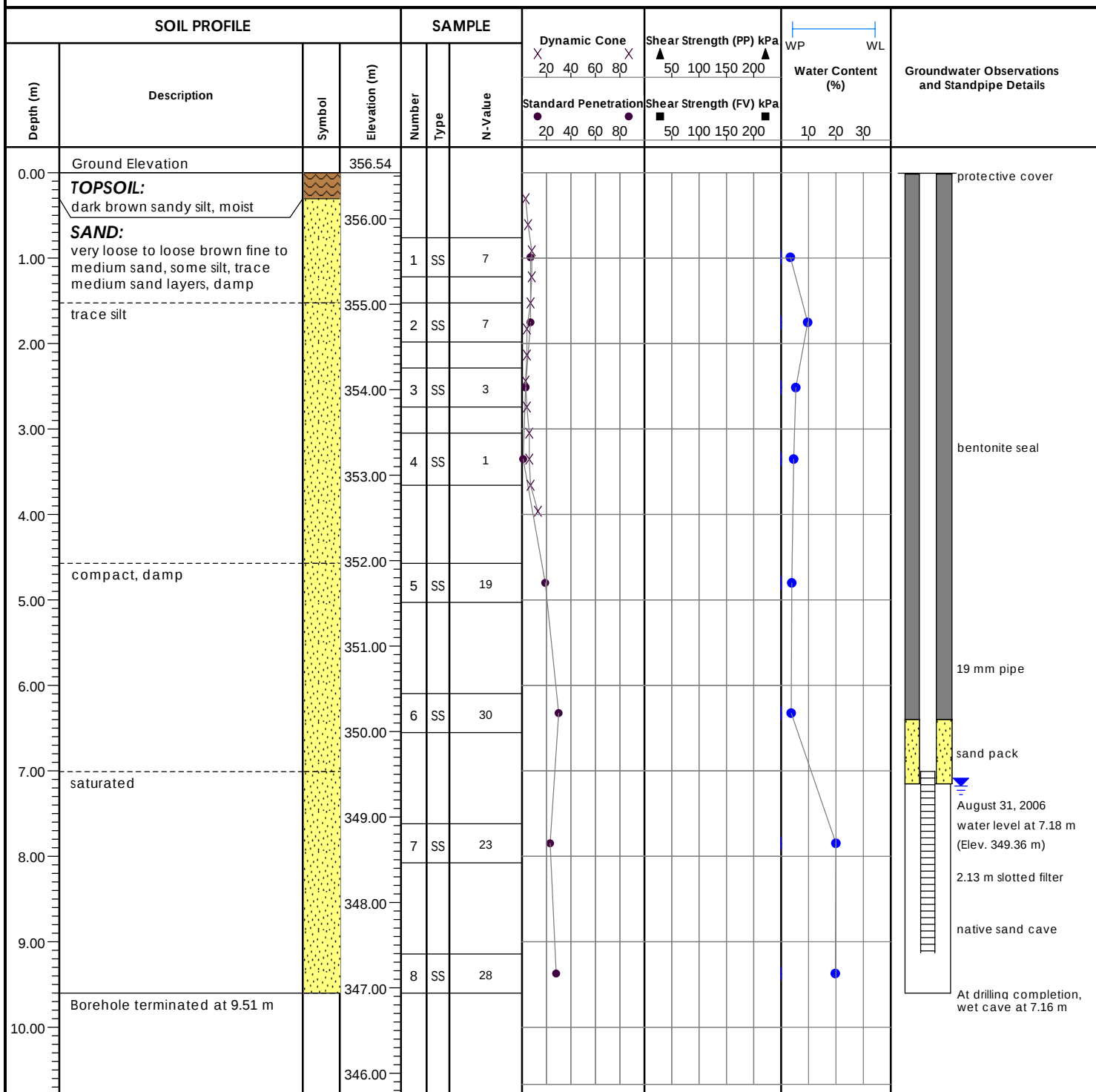
NOTES: Bulk sample taken from 2.7 to 3.7 m

DRILLING METHOD: Hollow Stem Augers



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ENGINEER: 90



Reviewed by: DN

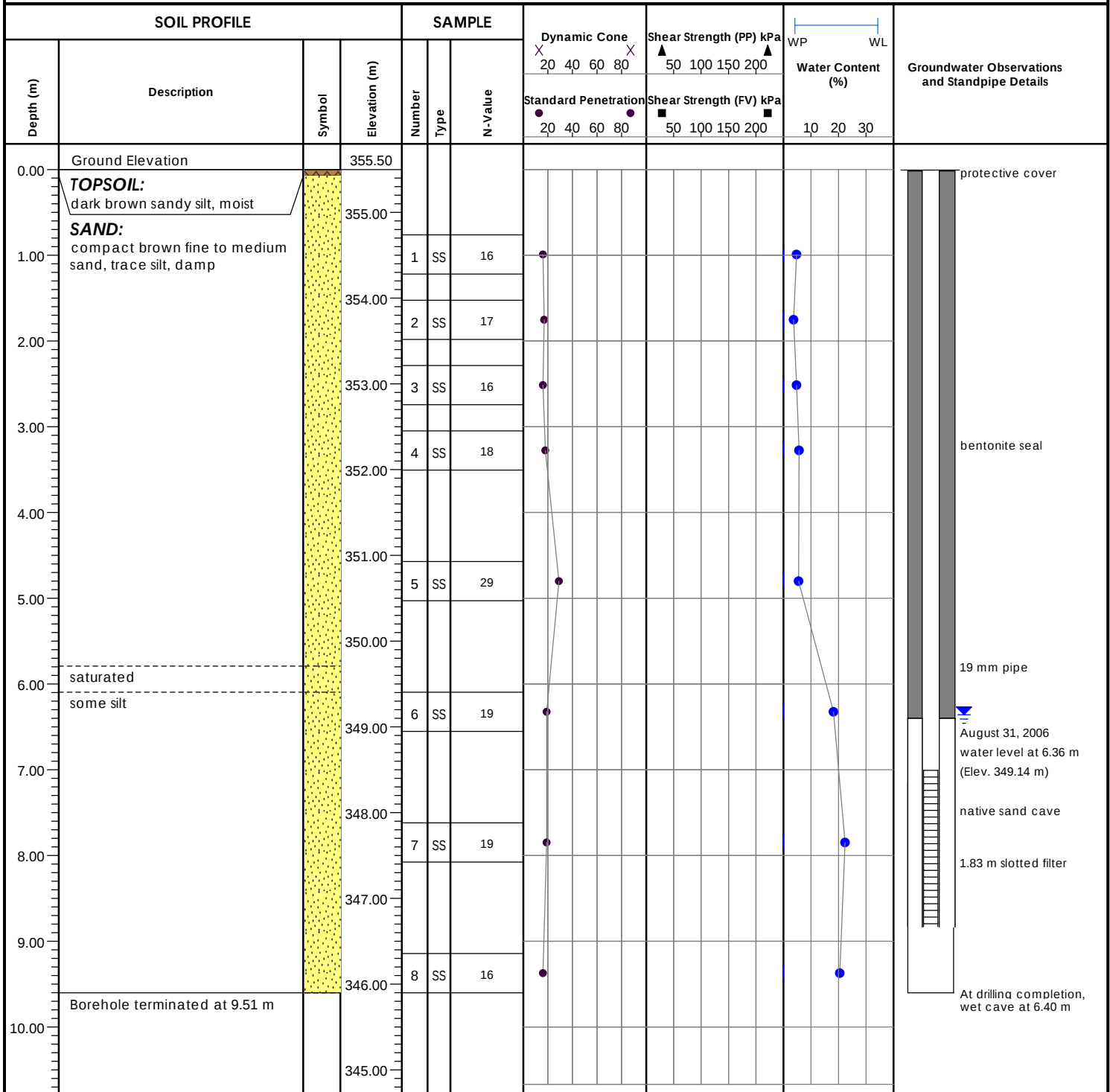
Drill Method: Solid Stem Auger

Notes: Bulk sample taken from 1.22 to 3.05 m.

Field Tech.: RM

Sheet: 1 of 1

Drafted by: DC(01a)



Reviewed by: DN

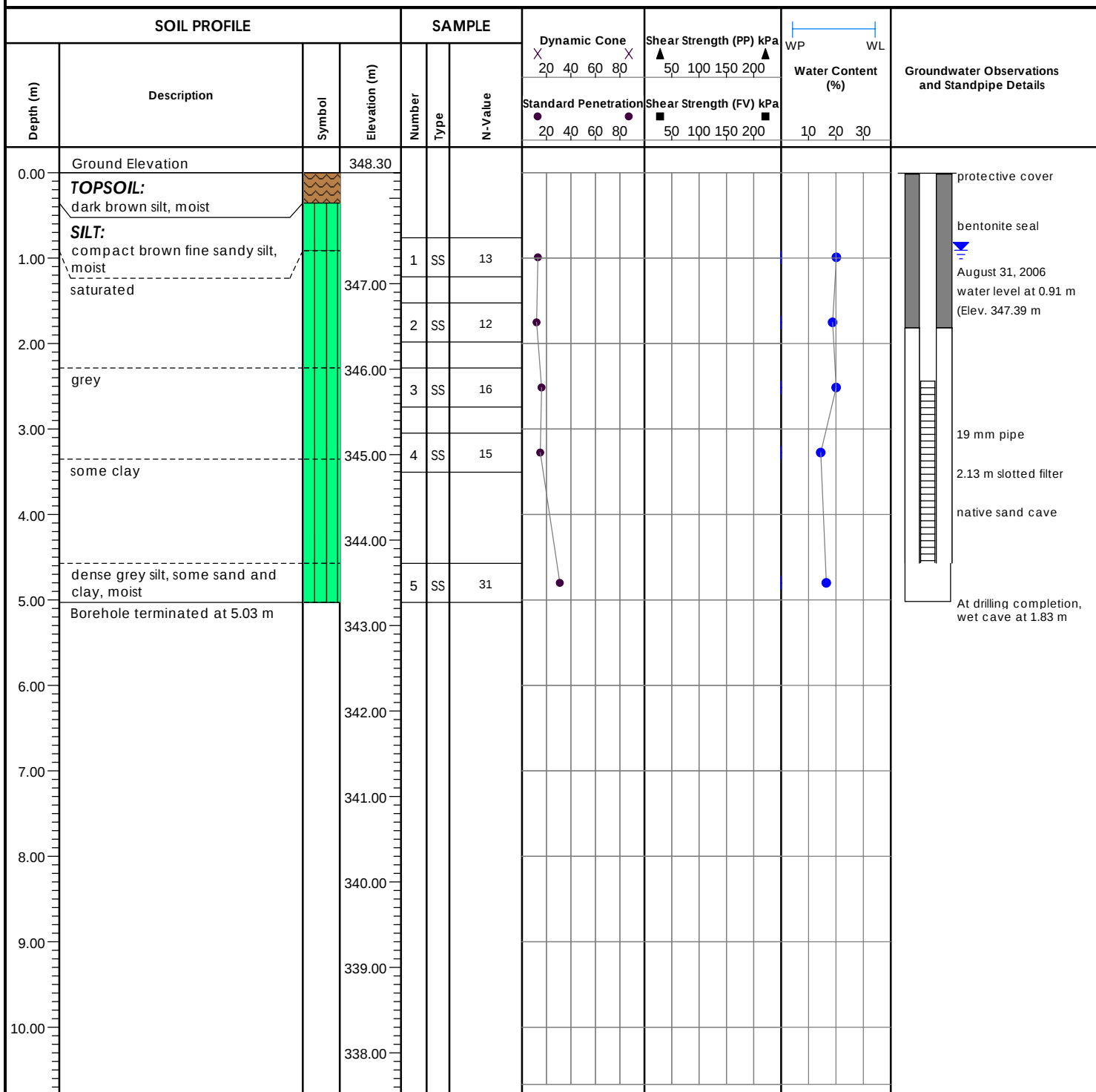
Drill Method: Solid Stem Auger

Notes: Bulk sample taken from 1.22 to 2.13 m.

Field Tech.: RM

Sheet: 1 of 1

Drafted by: DC(01a)



Reviewed by: **DN**

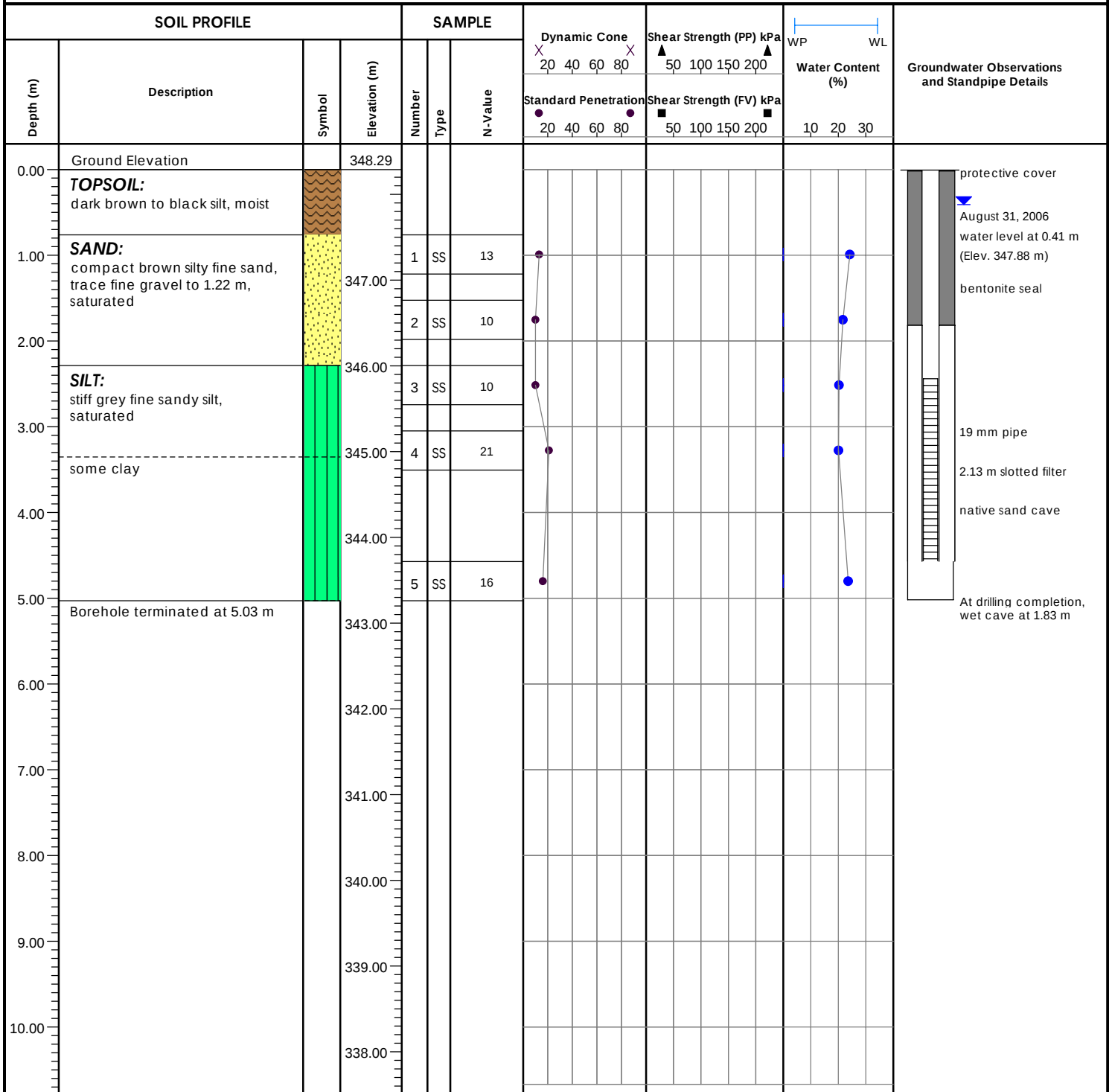
Drill Method: **Solid Stem Auger**

Notes: **Bulk sample taken from 1.22 to 2.13 m.**

Field Tech.: **RM**

Sheet: **1 of 1**

Drafted by: **DC(01a)**



Reviewed by: **DN**

Drill Method: **Solid Stem Auger**

Notes:

Field Tech.: **RM**

Sheet: **1 of 1**

Drafted by: **DC(01a)**

Test Pit Number: 1

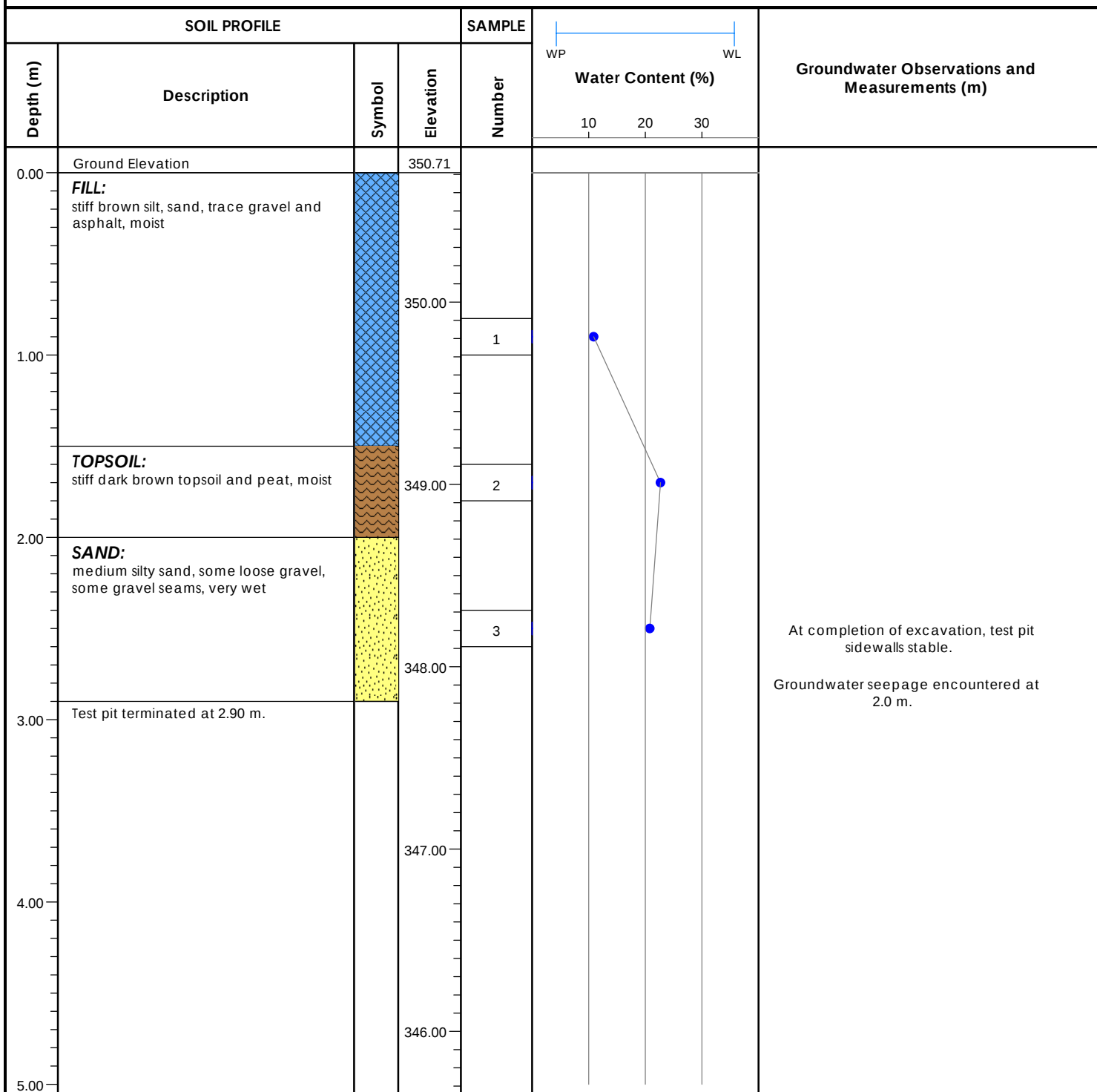
Ground Elevation: 350.71 m

Project: Simpson Lands Residential Subdivision

Job No.: 6454G1

Location: 720 Erbsville Road, Waterloo, Ontario

Excavation Date: July 31, 2006



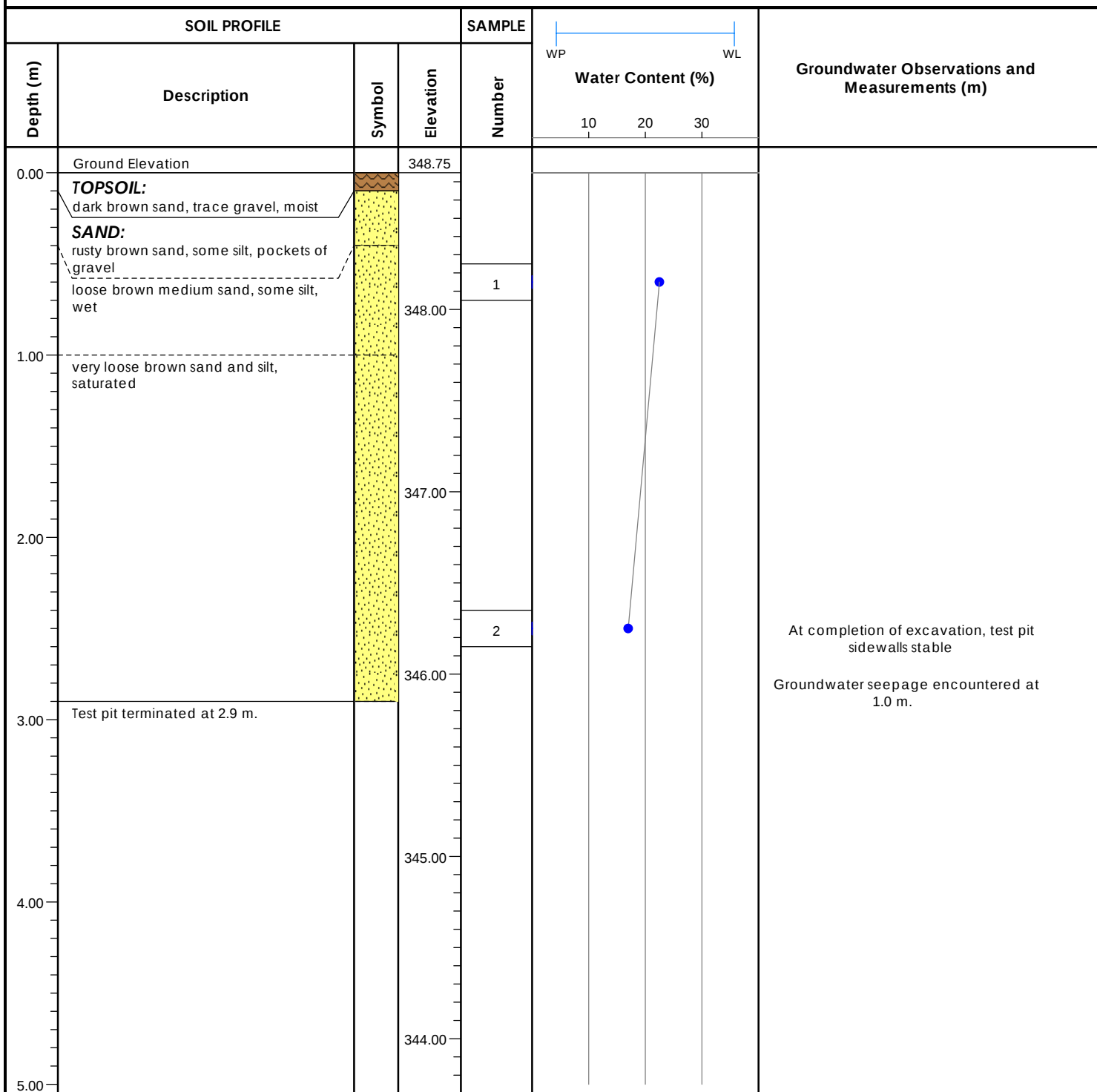
Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: GRL(00q)



Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: GRL(00q)



Test Pit Number: 3

Ground Elevation: 349.85 m

Project: Simpson Lands Residential Subdivision

Job No.: 6454G1

Location: 720 Erbsville Road, Waterloo, Ontario

Excavation Date: July 31, 2006

SOIL PROFILE				SAMPLE	Water Content (%)	Groundwater Observations and Measurements (m)
Depth (m)	Description	Symbol	Elevation	Number		
0.00	Ground Elevation		349.85			
	TOPSOIL: dark brown sand and silt, moist					
	SAND: rusty brown sand and silt, trace gravel, moist		349.00			
1.00	brown sand, some silt and gravel, moist					
	loose sand and silt, wet			1		
			348.00			
2.00	saturated					
	Test pit terminated at 2.60 m.		347.00			
3.00						
			346.00			
4.00						
			345.00			
5.00						

Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: DC(00q)



Test Pit Number: 4

Ground Elevation: 353.33 m

Project: Simpson Lands Residential Subdivision

Job No.: 6454G1

Location: 720 Erbsville Road, Waterloo, Ontario

Excavation Date: July 31, 2006

SOIL PROFILE				SAMPLE		Groundwater Observations and Measurements (m)
Depth (m)	Description	Symbol	Elevation	Number		
0.00	Ground Elevation		353.33			At completion of excavation, test pit sidewalls stable No free groundwater encountered.
	TOPSOIL: dark brown sand and silt, moist		353.00			
	SAND: loose brown coarse sand, trace silt, layered, damp					
1.00				1		
			352.00			
2.00						
			351.00			
3.00	compact					
	Test pit terminated at 3.00 m.		350.00			
4.00						
			349.00			
5.00						

Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: DC(00q)



Test Pit Number: 5

Ground Elevation: 351.48 m

Project: Simpson Lands Residential Subdivision

Job No.: 6454G1

Location: 720 Erbsville Road, Waterloo, Ontario

Excavation Date: July 31, 2006

SOIL PROFILE				SAMPLE		Groundwater Observations and Measurements (m)
Depth (m)	Description	Symbol	Elevation	Number		
0.00	Ground Elevation		351.48			At completion of excavation, test pit sidewalls stable No free groundwater encountered.
	TOPSOIL: dark brown silt and clay,					
			351.00			
	SILT TILL: hard brown silt, some clay, trace sand and gravel, damp			1		
1.00						
			350.00			
	SAND: coarse brown silty sand, wet			2		
						At completion of excavation, test pit sidewalls stable No free groundwater encountered.
	SILT: hard brown clayey silt, very moist			3		
2.00						
	Test pit terminated at 2.40 m.		349.00			
						At completion of excavation, test pit sidewalls stable No free groundwater encountered.
			348.00			
			347.00			
4.00						At completion of excavation, test pit sidewalls stable No free groundwater encountered.
5.00						

Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: DC(00q)

Test Pit Number: 6

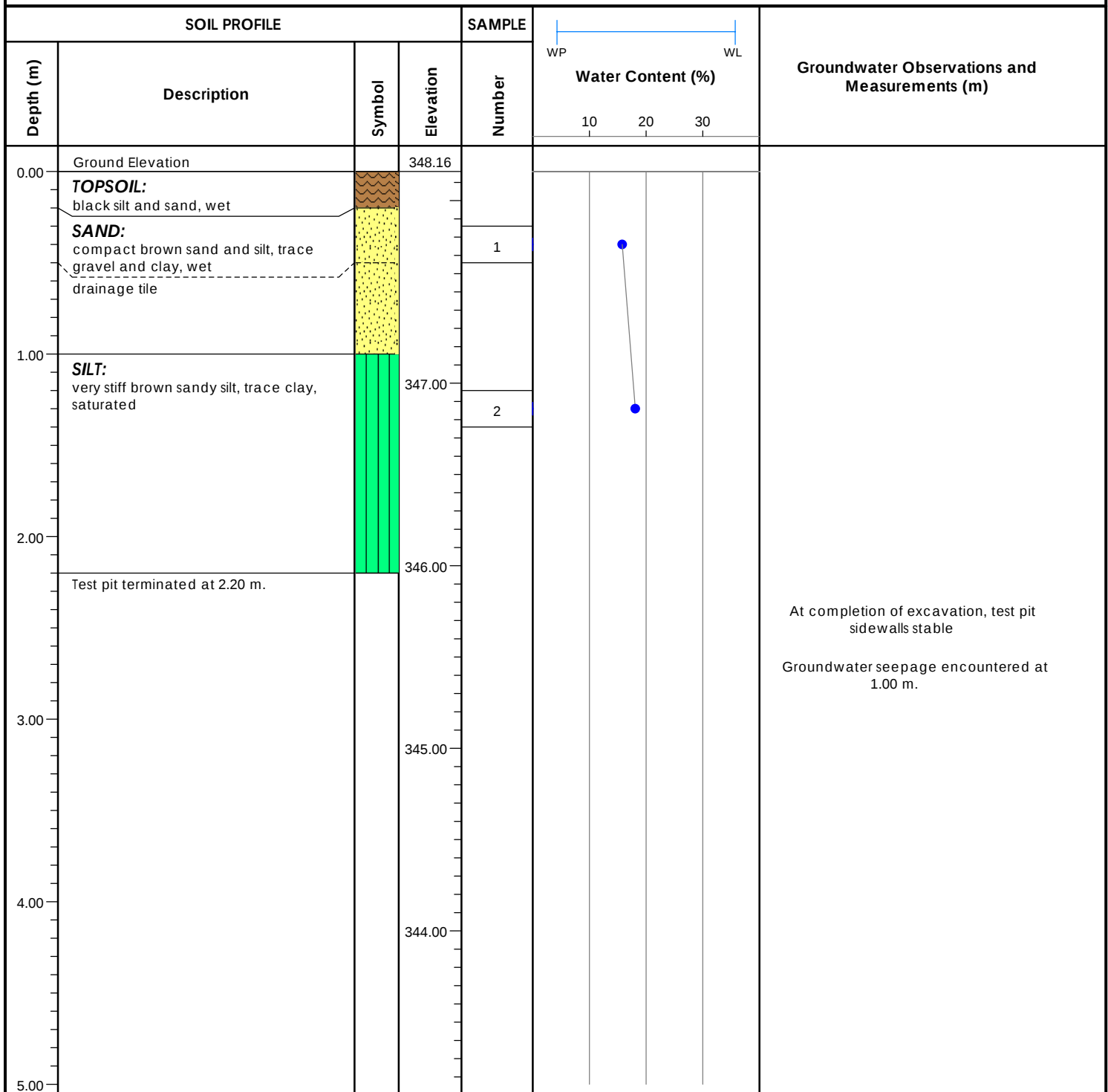
Ground Elevation: 348.16 m

Project: Simpson Lands Residential Subdivision

Job No.: 6454G1

Location: 720 Erbsville Road, Waterloo, Ontario

Excavation Date: July 31, 2006



Reviewed by: DN

Field Tech: NM

Notes:

Sheet: 1 of 1

Drafted by: DC(00q)



Ground Elevation: 350.27 m

Borehole Number: BH-01A-13

Northing: 4813815 m

Job N°: P-0002619-0-01-300

Easting: 531698 m

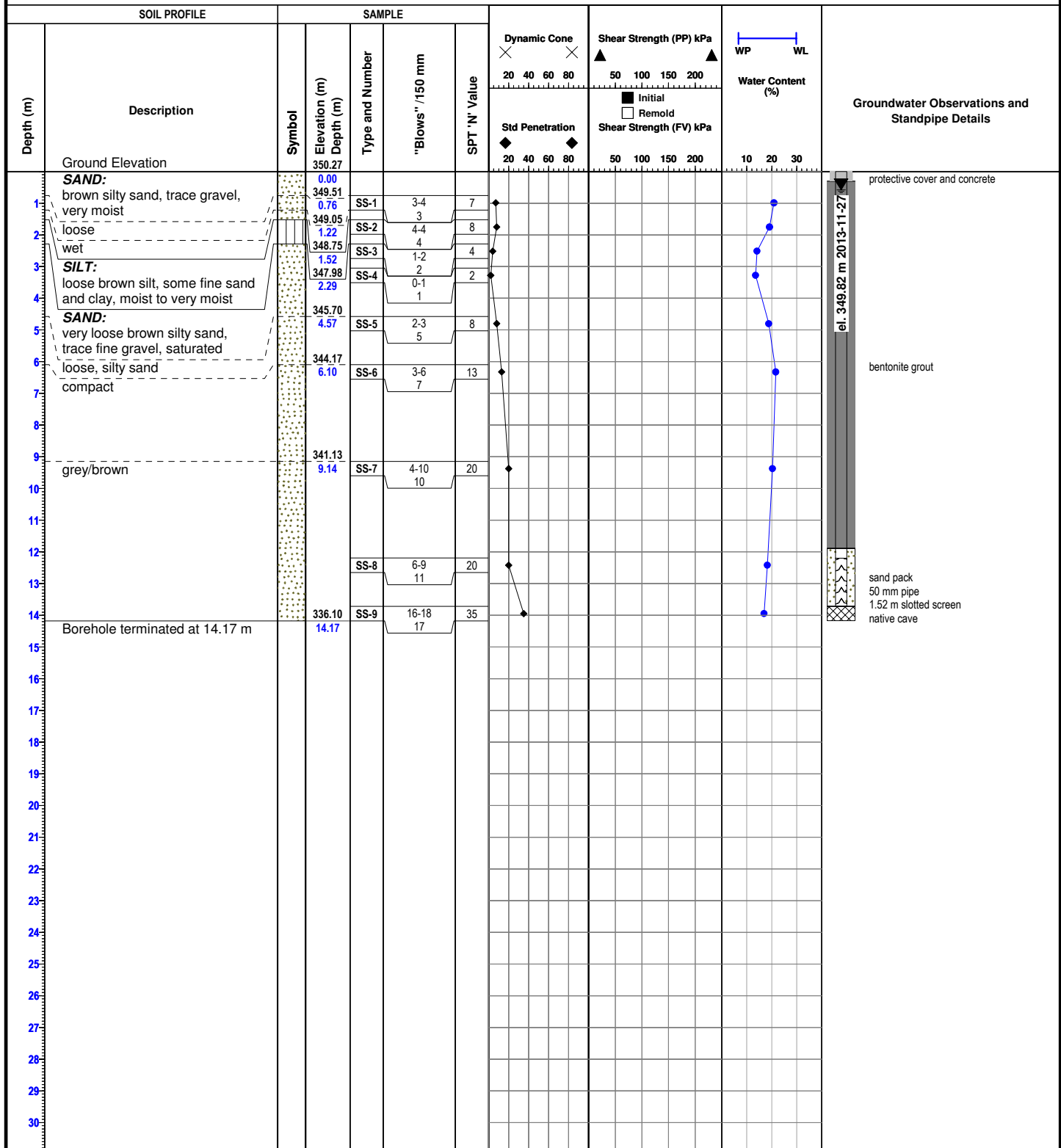
Drill Date: 2013-10-18

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 350.29 m

Borehole Number: BH-01B-13

Northing: 4813815 m

Job N°: P-0002619-0-01-300

Easting: 531697 m

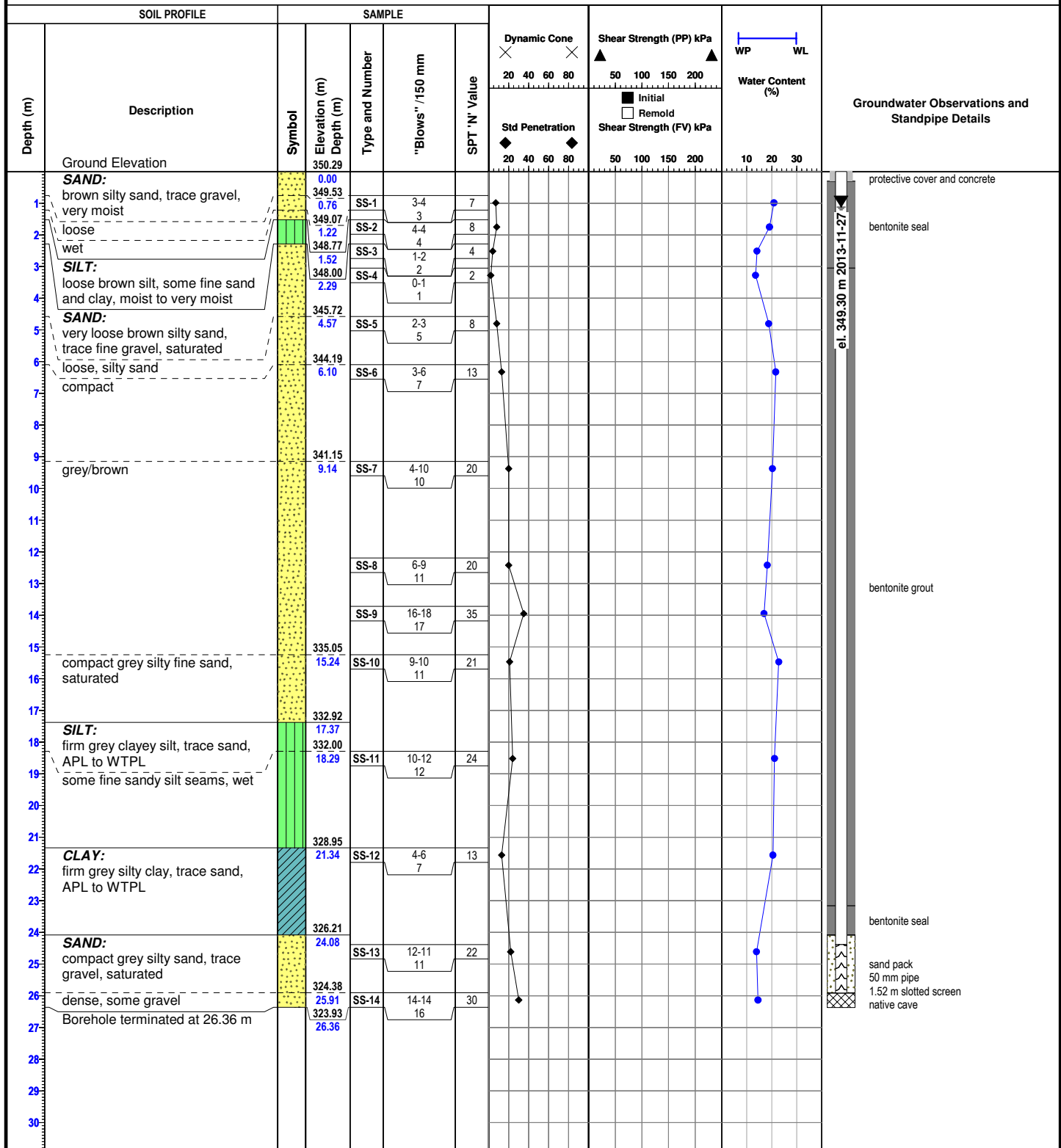
Drill Date: 2013-10-22

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes: MOE Well Tag #A146702



Ground Elevation: 350.31 m

Borehole Number: BH-01C-13

Northing: 4813814 m

Job N°: P-0002619-0-01-300

Easting: 531697 m

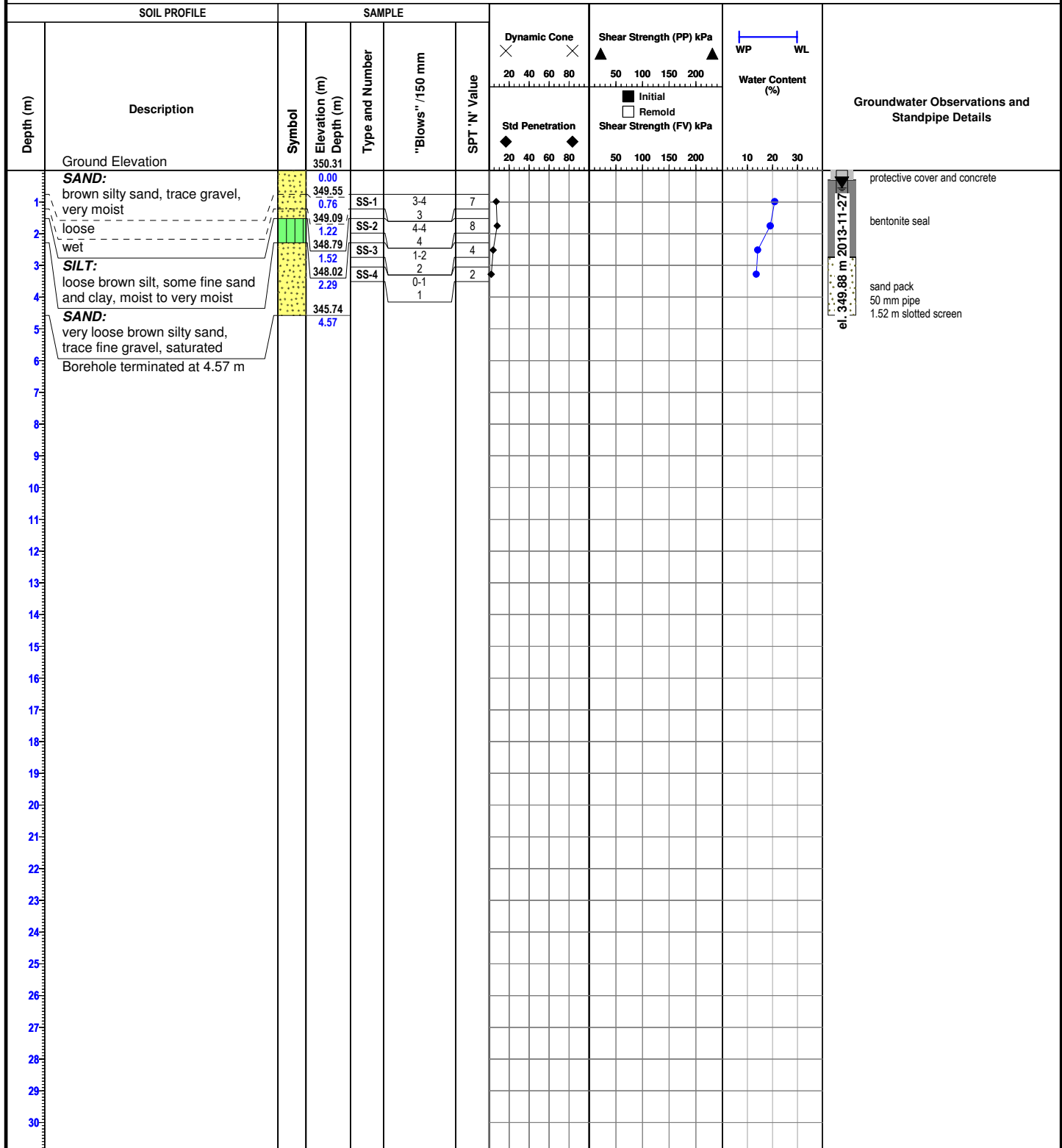
Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 353.62 m

Borehole Number: BH-02-13

Northing: 4814031 m

Job N°: P-0002619-0-01-300

Easting: 531960 m

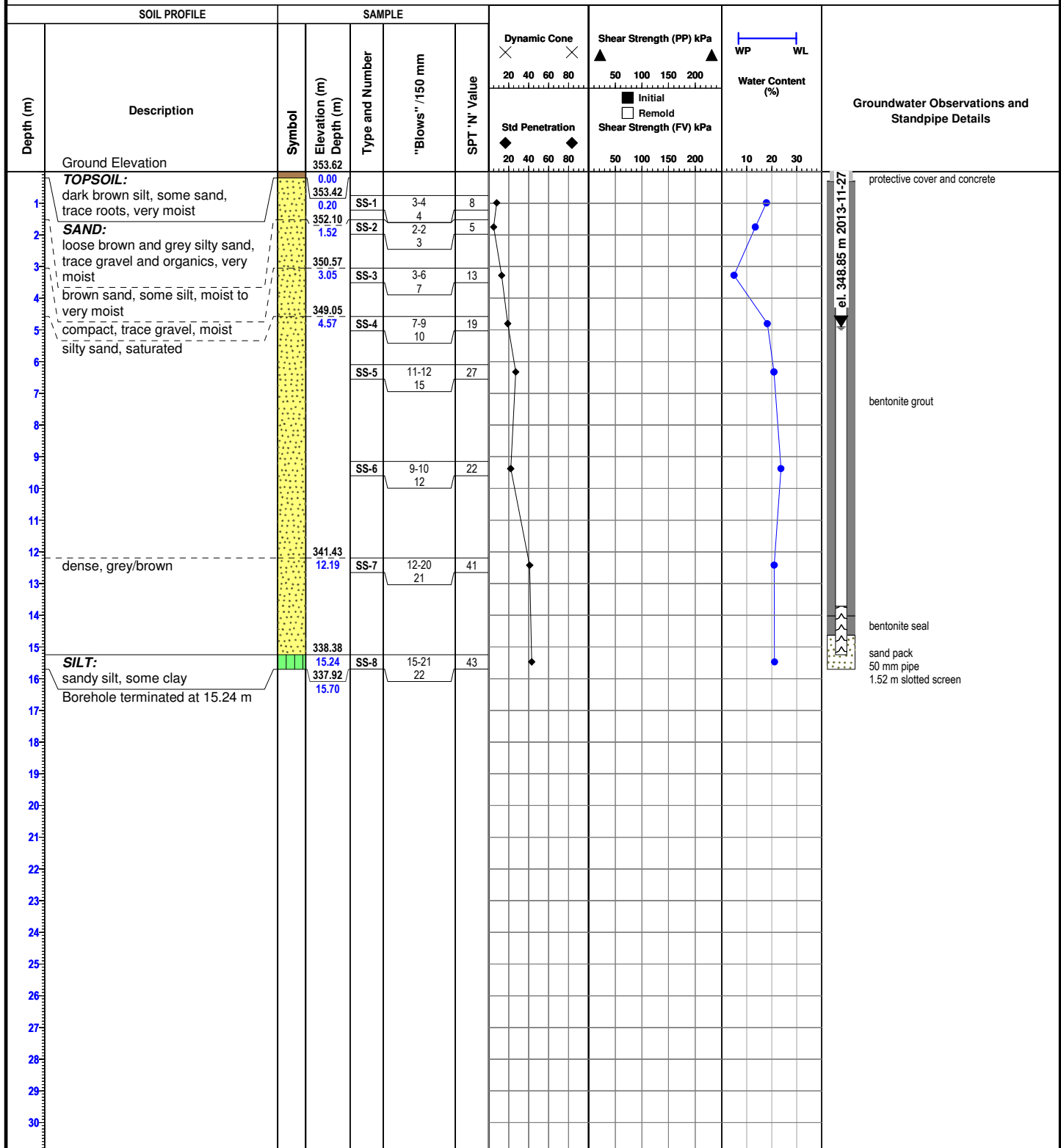
Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes: MOE Well Tag #A146700.



Ground Elevation: 350.07 m

Borehole Number: BH-03-13

Northing: 4814119 m

Job N°: P-0002619-0-01-300

Easting: 531868 m

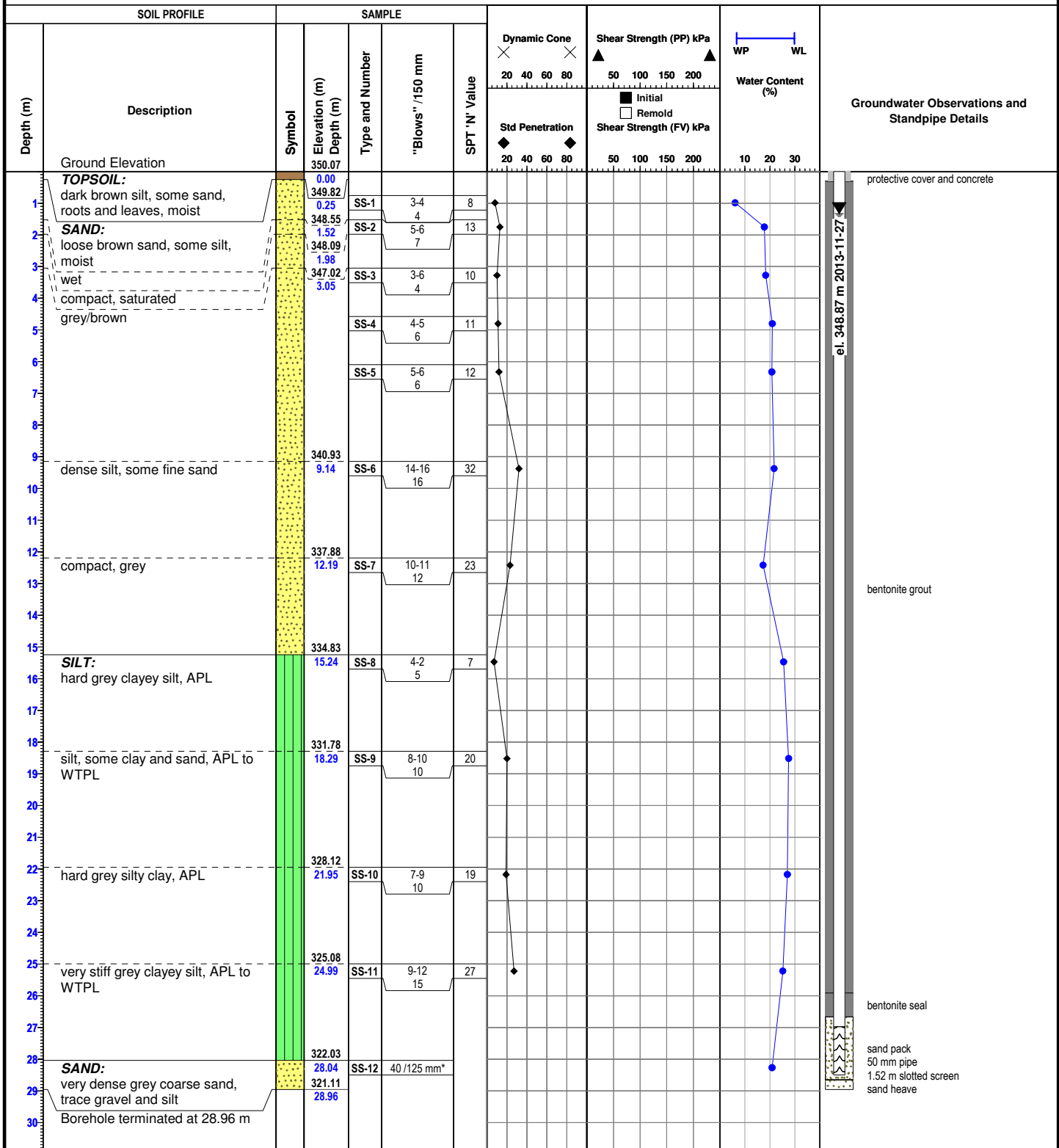
Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes: * Sampler bouncing on gravel
MOE Well Tag #A146699



Ground Elevation: 350.92 m

Borehole Number: BH-04-13

Northing: 4814142 m

Job N°: P-0002619-0-01-300

Easting: 532151 m

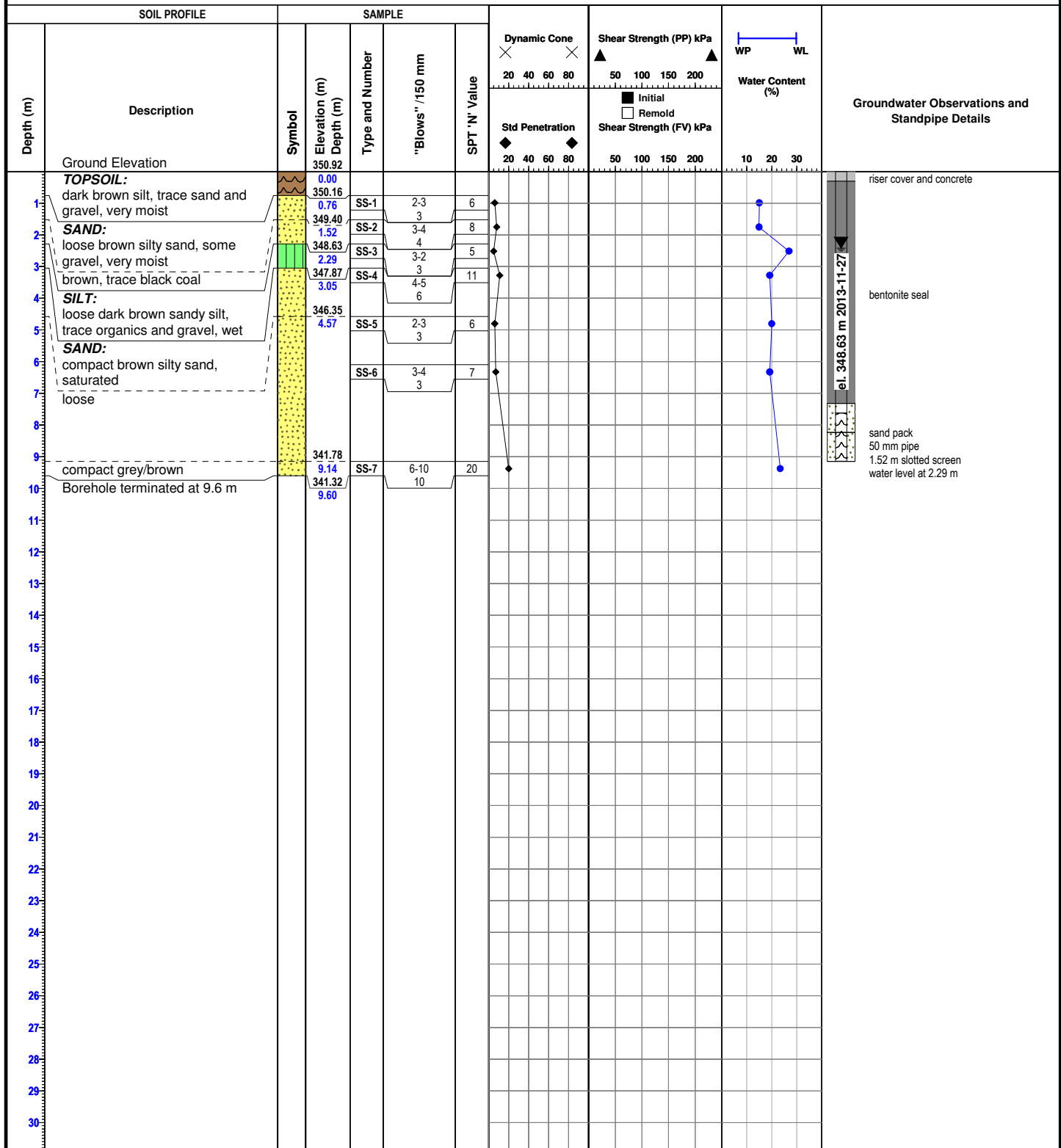
Drill Date: 2013-11-07

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes:



Ground Elevation: 347.79 m

Borehole Number: BH-05-13

Northing: 4814024 m

Job N°: P-0002619-0-01-300

Easting: 532432 m

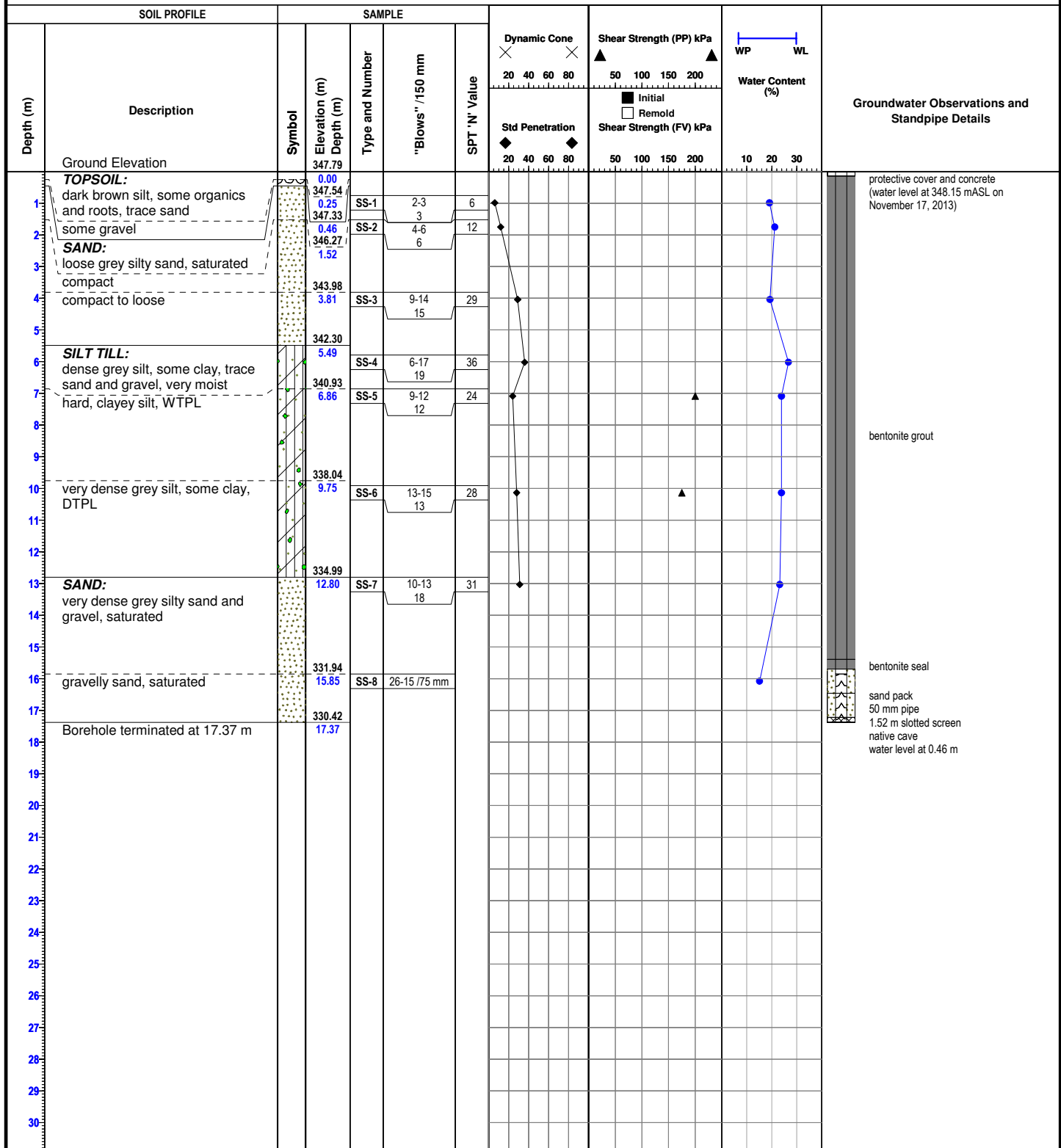
Drill Date: 2013-11-07

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: MOE Well Tag #A146708



Ground Elevation: 350.54 m

Borehole Number: BH-06A-13

Northing: 4813694 m

Job N°: P-0002619-0-01-300

Easting: 531916 m

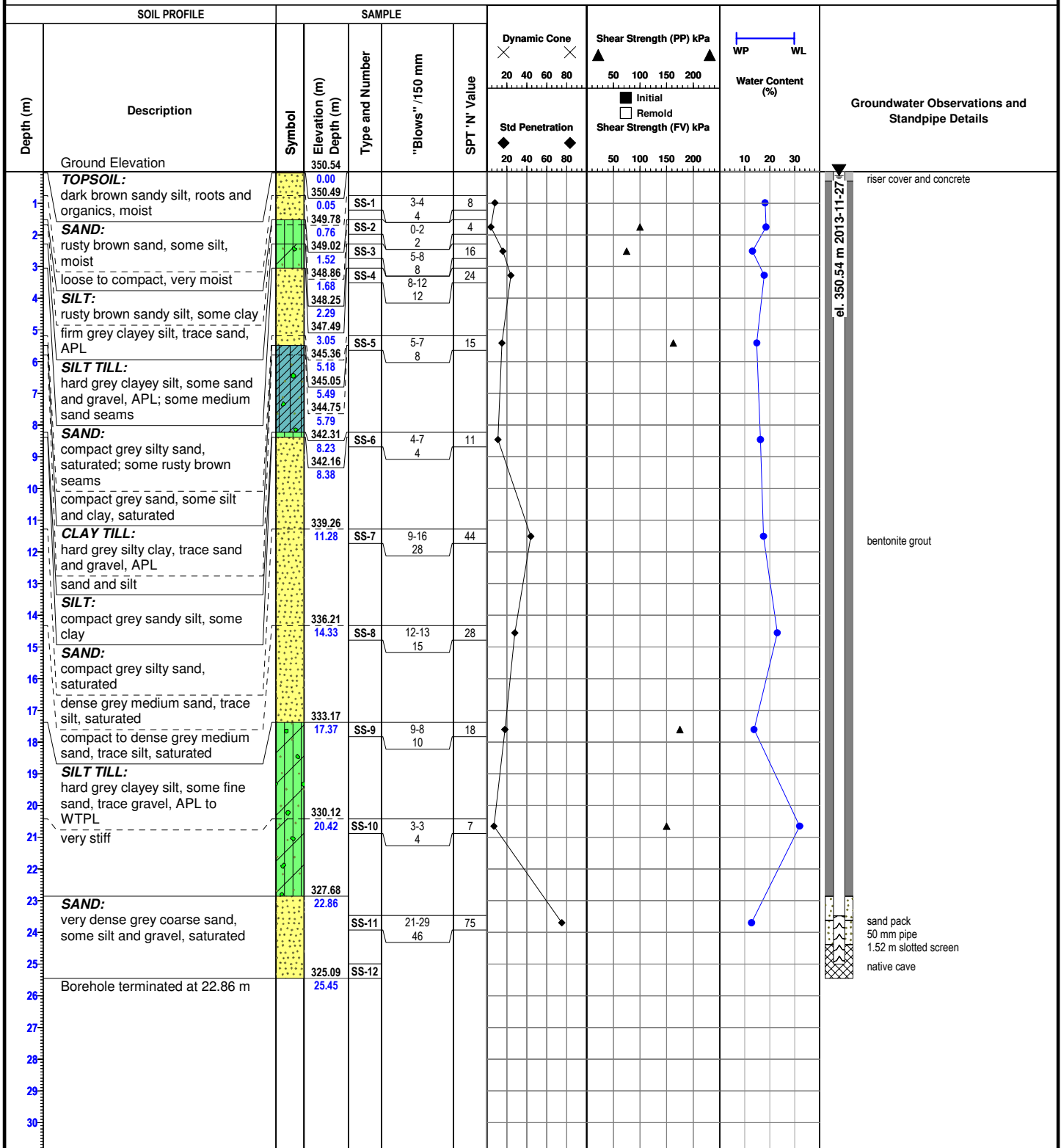
Drill Date: 2013-11-13

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: MOE Well Tag #A146701



Ground Elevation: 350.43 m

Borehole Number: BH-06B-13

Northing: 4813694 m

Job N°: P-0002619-0-01-300

Easting: 531916 m

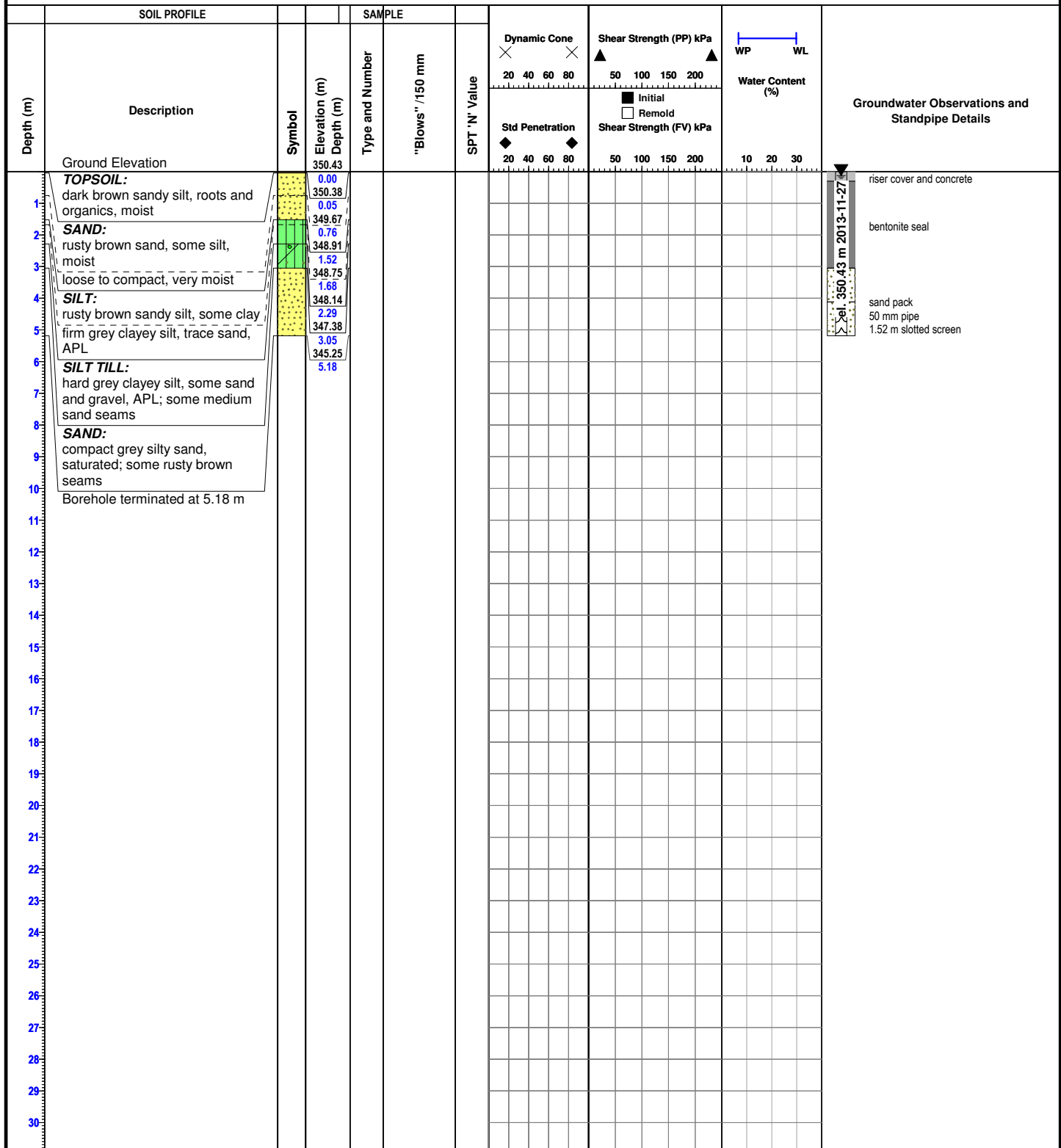
Drill Date: 2013-11-18

Project: Erbsville South Environmental Study

Field Tech: D.Souter

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hollow Stem Auger



Reviewed by: R.Zapata

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes:



Ground Elevation: 349.37 m

Borehole Number: MP-01-13

Northing: 4813653 m

Job N°: P-0002619-0-01-300

Easting: 532445 m

Drill Date: 2013-10-24

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE																
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone X X	Shear Strength (PP) kPa ▲	WP WL	Water Content (%)	Groundwater Observations and Standpipe Details	Std Penetration ◆ ◆	Initial Remold	50	100	150	200	10	20	30
0	Ground Elevation		349.37																	
	TOPSOIL: dark brown silt, some sand, trace gravel, very moist		0.00 349.29 0.08																	
	SILT TILL: brown silt, some sand, trace gravel, very moist		348.81																	
	SAND AND GRAVEL: sand and gravel, some silt, wet Handhole terminated at 0.61 m		0.56 348.76 0.61																	
1																				
2																				
3																				
4																				

el. 349.09 m 2013-11-27

sand pack
19 mm pipe
0.45 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 349.18 m

Borehole Number: MP-02-13

Northing: 4813681 m

Job N°: P-0002619-0-01-300

Easting: 532314 m

Drill Date: 2013-10-24

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)			Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			10 20 30				
							Std Penetration			Shear Strength (FV) kPa			10 20 30				
0	Ground Elevation TOPSOIL / PEAT: dark brown/black topsoil and peat, wet		349.18 0.00													 el. 349.22 m 2013-11-27 sand pack 19 mm pipe 1.50 m slotted screen	
2	SILT TILL: brown silt, some sand, trace gravel, wet		347.35 1.83														
4	Handhole terminated at 3.96 m		345.22 3.96														

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.98 m

Borehole Number: MP-03-13

Northing: 4813756 m

Job N°: P-0002619-0-01-300

Easting: 532193 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE			SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)			Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	'Blows' /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			10 20 30			
							Std Penetration			Shear Strength (FV) kPa						
							X X			▲ ▲			WP WL			
							◆ ◆			■ □						
							20 40 60 80			50 100 150 200			10 20 30			
0	Ground Elevation TOPSOIL / PEAT: dark brown/black topsoil and peat, wet		348.98 0.00													▼ el. 348.98 m 2013-11-27 sand pack 19 mm pipe 1.50 m slotted screen
1																
2																
	SILT: grey/brown silt, trace sand, wet		346.85 2.13													
	Handhole terminated at 2.74 m		346.24 2.74													
3																
4																

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 349.08 m

Borehole Number: MP-04-13

Northing: 4813757 m

Job N°: P-0002619-0-01-300

Easting: 532174 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							20 40 60 80	50 100 150 200		
							20 40 60 80	50 100 150 200	10 20 30	
							20 40 60 80	50 100 150 200		

 2013-11-27
 el. 349.02 m
 19 mm pipe
 1.50 m slotted screen

sand pack

19 mm pipe
1.50 m slotted screen

Vertical Scale = 1 : 30.0

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 347.96 m

Borehole Number: MP-05-13

Northing: 4813850 m

Job N°: P-0002619-0-01-300

Easting: 532316 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE			SAMPLE									Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	'Blows' /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)			
							20 40 60 80	50 100 150 200	WP	WL		
							Std Penetration	Initial Remold Shear Strength (FV) kPa				
							20 40 60 80	50 100 150 200	10 20 30			
0	Ground Elevation		347.96									el. 347.89 m 2013-11-27 19 mm pipe 0.75 m slotted screen
	TOPSOIL: dark brown/black silt, trace sand and gravel, wet		0.00 347.86 0.10									
	SILT TILL: grey clayey silt, trace sand and gravel, wet		347.35									
	SILT: grey clayey silt, trace sand, wet		0.61									
	Handhole terminated at 1.22 m		346.74 1.22									
1												
2												
3												
4												

el. 347.89 m 2013-11-27

sand pack

 19 mm pipe
0.75 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 349.49 m

Borehole Number: MP-06-13

Northing: 4813664 m

Job N°: P-0002619-0-01-300

Easting: 532061 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							WP	WL		
							20406080 Dynamic Cone 20406080	50100150200 Shear Strength (PP) kPa 50100150200	102030 Water Content (%) 102030	
0	Ground Elevation TOPSOIL / PEAT: dark black topsoil and pet, wet		349.49 0.00							
	fibrous material, wet		349.19 0.30							
	SILT: grey fine sandy silt, trace clay, very moist to wet		348.88 0.61							
1	clayey silt, some fine sand		347.97 1.52							
2	Handhole terminated at 2.13 m		347.36 2.13							
3										
4										

el. 349.51 m 2013-11-27

19 mm pipe

1.22 m slotted screen

sand pack

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 349.53 m

Borehole Number: MP-07-13

Northing: 4813670 m

Job N°: P-0002619-0-01-300

Easting: 532042 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE		SAMPLE				Dynamic Cone		Shear Strength (PP) kPa		WP WL	Water Content (%)	Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	20 40 60 80	50 100 150 200	Initial Remold			
			350.03				20 40 60 80	50 100 150 200	50 100 150 200	10 20 30		
0	Ground Elevation		349.53									
	TOPSOIL / PEAT:		0.00									
	dark black topsoil and peat, wet		349.38									
	SILT:		0.15									
	dark black silt, some sand, wet		349.22									
	SILT TILL:		0.30									
	grey fine sandy silt, trace gravel, wet		349.07									
	SILT:		0.46									
	grey clayey silt, some fine sand, wet		348.62									
1	SAND:		0.91									
	grey silty fine sand, some clay, trace gravel, moist to very moist		348.13									
	Handhole terminated at 1.40 m		1.40									
2												
3												
4												

el. 349.50 m 2013-11-27
sand pack
19 mm pipe
0.92 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.12 m

Borehole Number: MP-08-13

Northing: 4814005 m

Job N°: P-0002619-0-01-300

Easting: 531837 m

Drill Date: 2013-10-25

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE			SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)			Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	'Blows' /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			WP WL			
							Std Penetration			Shear Strength (FV) kPa			10 20 30			
			348.62													
0	Ground Elevation		348.12													
	TOPSOIL: dark brown/black silt, some sand, wet		0.00												 el. 348.03 m 2013-11-27 sand pack 19 mm pipe 0.90 m slotted screen	
	SAND: grey silty fine sand, trace gravel, wet		0.46													
			346.29													
	Handhole terminated at 1.83 m		1.83													
2																
3																
4																

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.28 m

Borehole Number: MP-09-13

Northing: 4813978 m

Job N°: P-0002619-0-01-300

Easting: 531840 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE			SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)		Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			WP WL		
							Std Penetration			Shear Strength (FV) kPa			10 20 30		
0	Ground Elevation TOPSOIL / PEAT: dark black/brown topsoil and peat, some fibrous material, trace sand and gravel, wet		348.28 0.00												
	SAND: grey/brown fine silty sand, trace gravel, wet		347.67 0.61												
1															
2															
	Handhole terminated at 2.13 m		346.15 2.13												
3															
4															

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 349.51 m

Borehole Number: MP-10-13

Northing: *4813681 m*

Job N°: *P-0002619-0-01-300*

Easting: 531922 m

Drill Date: 2013-10-28

Project: ***Erbsville South Environmental Study***

Field Tech: *J. Stroeder*

Location: *Erbsville Road and Wideman Road, Waterloo, Ontario*

Drill Method: *Hand Auger*

[illegible]

Reviewed by: *R.Zapata*

Drafted by: *A.Higgins*

Sheet: 1 of 1

Notes:



Ground Elevation: 349.49 m

Borehole Number: MP-11-13

Northing: 4813679 m

Job N°: P-0002619-0-01-300

Easting: 531914 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	'Blows' /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							20 40 60 80	50 100 150 200		
			349.99							
0	Ground Elevation		349.49							
	TOPSOIL / PEAT: dark black topsoil and peat, wet		0.00							
	SILT: dark black/brown silt, trace sand, wet		349.19							
	grey silt, some fine sand, trace clay, wet		348.88							
1	grey clayey silt, trace sand, wet		348.42							
2	Handhole terminated at 2.36 m		347.13							
3										
4										

el. 349.45 m

2013-11-27

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sand pack

 19 mm pipe

 1.83 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.78 m

Borehole Number: MP-12-13

Northing: 4813784 m

Job N°: P-0002619-0-01-300

Easting: 531928 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)			Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			10 20 30				
							Std Penetration			Shear Strength (FV) kPa							
							20 40 60 80	50 100 150 200	10 20 30								
0	Ground Elevation		348.78														
	TOPSOIL: dark black silt, trace sand, wet		348.58														
	SILT: brown/grey fine sandy silt, wet		348.02														
1	SAND: brown sand, some silt, wet		346.70														
	Handhole terminated at 2.08 m		2.08														
3																	
4																	

el. 348.74 m 2013-11-27

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el. 348.74 m 2013-11-27

sand pack

19 mm pipe
1.20 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 346.61 m

Borehole Number: MP-13-13

Northing: 4814220 m

Job N°: P-0002619-0-01-300

Easting: 532230 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	'Blows' /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							20 40 60 80	50 100 150 200		
							20 40 60 80	50 100 150 200	10 20 30	
0	Ground Elevation		346.61							
	TOPSOIL:		0.00							
	dark brown/black silt, some sand, wet		346.46							
			0.15							
	SILT:		346.15							
	dark brown silt, some fine sand, trace clay, wet		0.46							
	SAND AND GRAVEL:		346.00							
	sand and gravel, some silt, trace clay, wet		0.61							
1	SILT TILL:									
	grey clayey silt, trace fine sand and gravel, wet		345.24							
			1.37							
	some fine sand and gravel, wet		345.16							
	Handhole terminated at 1.45 m		1.45							
2										
3										
4										

el. 346.36 m

2013-11-27

el. 346.36 m 2013-11-27

sand pack

19 mm pipe
1.06 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 346.45 m

Borehole Number: MP-14-13

Northing: 4814186 m

Job N°: P-0002619-0-01-300

Easting: 532324 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE										Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)					
							20 40 60 80	50 100 150 200	WP	WL				
							Std Penetration	Shear Strength (FV) kPa						
20 40 60 80	50 100 150 200	10 20 30												
			346.95											
0	Ground Elevation		346.45											
	TOPSOIL: dark black silt, some sand, wet		0.00											
			345.84											
	SAND AND GRAVEL: brown sand and gravel, some silt, wet		0.61											
			345.69											
			0.76											
1	SILT TILL: grey clayey silt, trace fine sand and gravel, wet													
			345.14											
	Handhole terminated at 1.31 m		1.31											
2														
3														
4														

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el. 346.27 m 2013-11-27

sand pack

19 mm pipe
0.90 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 346.38 m

Borehole Number: MP-15-13

Northing: 4813997 m

Job N°: P-0002619-0-01-300

Easting: 532463 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details		
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)			
							20 40 60 80	50 100 150 200	WP WL			
							Std Penetration	Initial Remold Shear Strength (FV) kPa	10 20 30			
20 40 60 80	50 100 150 200											
0	Ground Elevation		346.38									
	TOPSOIL: dark brown silt, some fine sand, wet		0.00									
	SILT: brown silt, some fine sand, wet		346.07									
			0.30									
			345.62									
	grey clayey silt, trace fine sand, wet		0.76									
1			345.31									
	brown fine sandy silt, trace clay, wet		1.07									
	brown fine sand, some silt, wet		345.16									
			1.22									
	Borehole terminated at 1.55 m		344.83									
			1.55									
2												
3												
4												

 19 mm pipe
 0.90 m slotted screen
 el. 346.31 m 2013-11-27

sand pack

19 mm pipe
0.90 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Notes:



Ground Elevation: 346.29 m

Borehole Number: MP-17-13

Northing: 4814061 m

Job N°: P-0002619-0-01-300

Easting: 532479 m

Drill Date: 2013-10-28

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							20 40 60 80	50 100 150 200		
							Std Penetration	Initial Remold Shear Strength (FV) kPa		
							20 40 60 80	50 100 150 200	10 20 30	
0	Ground Elevation TOPSOIL: dark black topsoil and peat, wet		346.29 0.00							
1	SILT: grey fine sandy silt, wet		345.38 0.91							
	grey clayey silt, some fine sand, wet		344.61 1.68							
2	Handhole terminated at 1.80 m		344.49 1.80							
3										
4										

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19 mm pipe
1.20 m slotted screen

sand pack

19 mm pipe
1.20 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 346.70 m

Borehole Number: MP-18-13

Northing: 4814165 m

Job N°: P-0002619-0-01-300

Easting: 532358 m

Drill Date: 2013-10-29

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa	Water Content (%)	
							WP	WL		
							Shear Strength (FV) kPa			
			347.20				20 40 60 80	50 100 150 200	10 20 30	
							20 40 60 80	50 100 150 200		

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 346.67 m

Borehole Number: MP-19-13

Northing: 4814257 m

Job N°: P-0002619-0-01-300

Easting: 532289 m

Drill Date: 2013-10-28

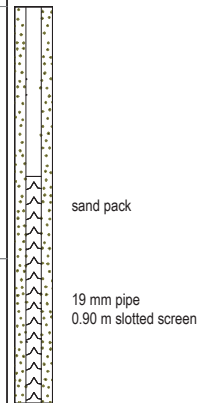
Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOI ROF E					SAMPLE															
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone		Shear Strength (PP) kPa		Water Content (%)		Groundwater Observations and Standpipe Details							
							20 40 60 80	20 40 60 80	50 100 150 200	50 100 150 200	10 20 30									
			347.17																	
0	Ground Elevation		346.67																	
	TOPSOIL: dark black topsoil, some peat, trace sand, wet		346.47																	
	SAND: grey silty fine sand, moist to very moist		345.91																	
	some silt		345.60																	
1	SILT: grey fine sandy silt, trace clay, wet		345.10																	
	Handhole terminated at 1.57 m																			
2																				
3																				
4																				



Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:

Notes:



Ground Elevation: 347.80 m

Borehole Number: MP-21-13

Northing: 4814190 m

Job N°: P-0002619-0-01-300

Easting: 531872 m

Drill Date: 2013-10-29

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE										Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone		Shear Strength (PP) kPa		Water Content (%)			
							20 40 60 80	20 40 60 80	50 100 150 200	50 100 150 200	10 20 30			
							Std Penetration		Shear Strength (FV) kPa					
							20 40 60 80	20 40 60 80	50 100 150 200	50 100 150 200	10 20 30			
0	Ground Elevation TOPSOIL / PEAT: dark black topsoil and peat		347.80 0.00										 el. 347.64 m 2013-11-27 sand pack 19 mm pipe 0.90 m slotted screen	
	fibrous material		347.34 0.46											
1	SAND: brown fine sand, some silt, trace gravel, wet		347.04 0.76											
	Handhole terminated at 1.45 m		346.35 1.45											
2														
3														
4														

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.81 m

Borehole Number: MP-22-13

Northing: 4813699 m

Job N°: P-0002619-0-01-300

Easting: 531694 m

Drill Date: 2013-10-30

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE					Groundwater Observations and Standpipe Details	
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone	Shear Strength (PP) kPa		Water Content (%)
							WP	WL		
							20 40 60 80	50 100 150 200	10 20 30	
							20 40 60 80	50 100 150 200		

el. 348.80 m 2013-11-27

sand pack

19 mm pipe
0.90 m slotted screen

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.66 m

Borehole Number: MP-23-13

Northing: *4813804 m*

Job N°: *P-0002619-0-01-300*

Easting: 531756 m

Drill Date: 2013-10-30

Project: ***Erbsville South Environmental Study***

Field Tech: *J.Stoeder*

Location: *Erbsville Road and Wideman Road, Waterloo, Ontario*

Drill Method: *Hand Auger*[illegible]Reviewed by: *R.Zapata*

Drafted by: *A.Higgins*

Sheet: 1 of 1

Notes:



Ground Elevation: 348.40 m

Borehole Number: MP-24-13

Northing: 4813891 m

Job N°: P-0002619-0-01-300

Easting: 531897 m

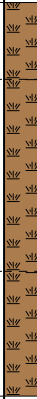
Drill Date: 2013-10-30

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE						Groundwater Observations and Standpipe Details				
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	Dynamic Cone		Shear Strength (PP) kPa		Water Content (%)			
							20 40 60 80		50 100 150 200			50 100 150 200		
							Std Penetration		Shear Strength (FV) kPa			Initial Remold		
							20 40 60 80		50 100 150 200		10 20 30			
0	Ground Elevation TOPSOIL / PEAT: dark black topsoil and peat, wet		348.40 0.00									 Rel. 348.43 m 2013-11-27 sand pack 19 mm pipe 0.90 m slotted screen		
	fibrous material		348.09 0.30											
1	grey fine sand, some silt, wet		347.33 1.07											
	Handhole terminated at 1.56 m		346.84 1.56											
2														
3														
4														

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

Notes:



Ground Elevation: 348.68 m

Borehole Number: MP-25-13

Northing: 4813722 m

Job N°: P-0002619-0-01-300

Easting: 531859 m

Drill Date: 2013-10-30

Project: Erbsville South Environmental Study

Field Tech: J.Stroeder

Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Drill Method: Hand Auger

SOIL PROFILE				SAMPLE				Dynamic Cone			Shear Strength (PP) kPa			Water Content (%)			Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	"Blows" /150 mm	SPT 'N' Value	20 40 60 80			50 100 150 200			10 20 30				
							Std Penetration			Shear Strength (FV) kPa							
							20 40 60 80			50 100 150 200			10 20 30				
0	Ground Elevation		348.68														
	TOPSOIL / PEAT: dark black topsoil and peat, wet		0.00													 sand pack 19 mm pipe 0.90 m slotted screen	
	SAND: grey fine sand, some silt, wet		348.38 0.30														
	silty fine sand		347.92 0.76														
1	some silt		347.61 1.07														
	Handhole terminated at 1.56 m		347.12 1.56														
2																	
3																	
4																	

Reviewed by: R.Zapata

Drafted by: A.Higgins

Sheet: 1 of 1

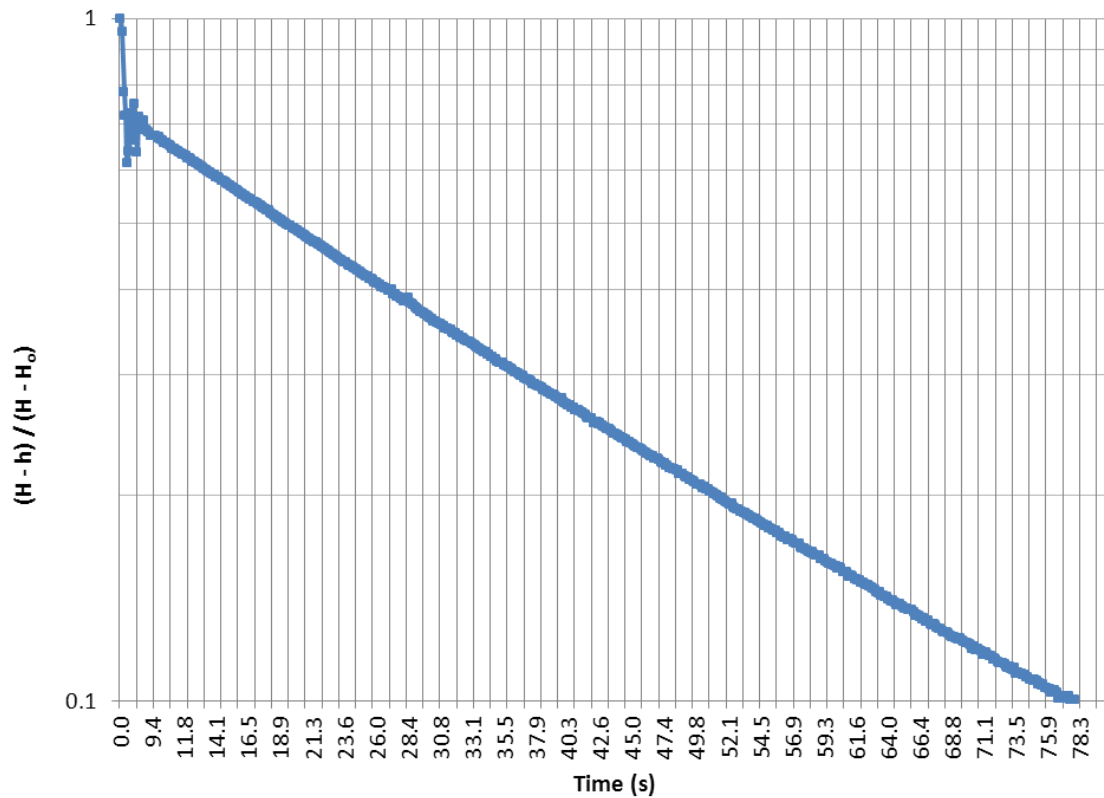
Notes:

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-01A-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 2.6×10^{-5}
Soil Type: Silty sand, trace gravel

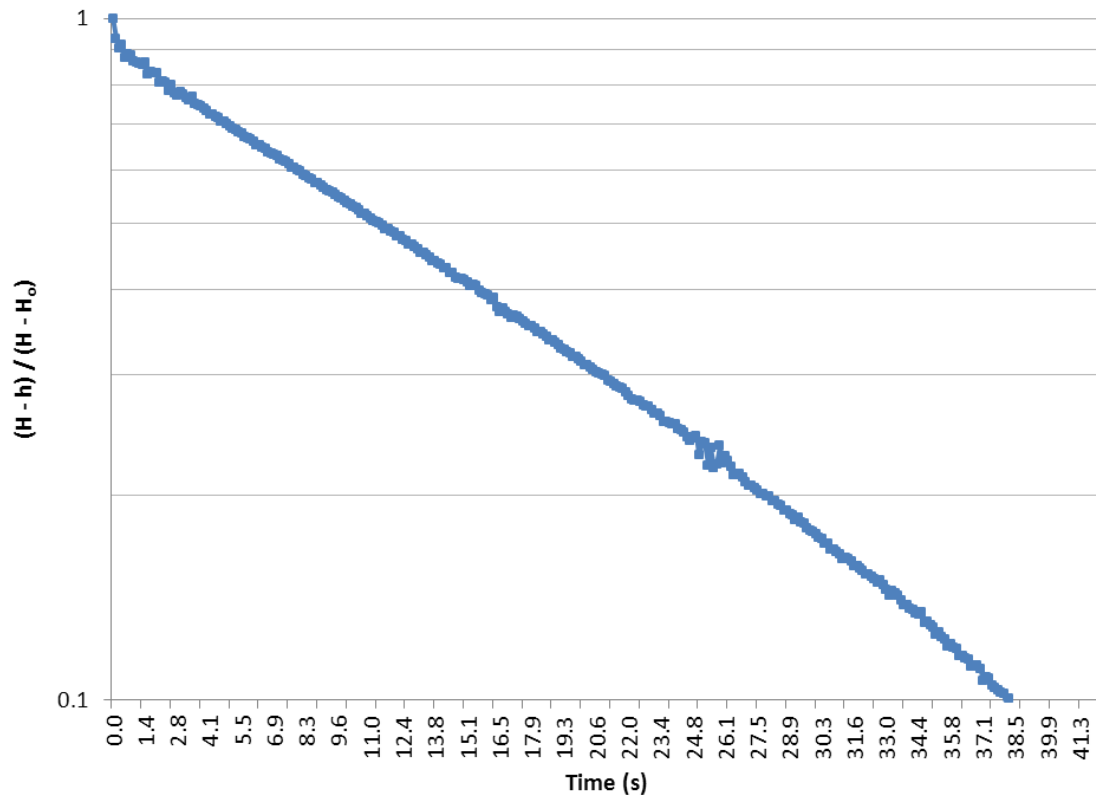
Calculated using Hvorslev
(falling head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-01B-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 3.4×10^{-5}
Soil Type: Silty clayey sand, trace gravel

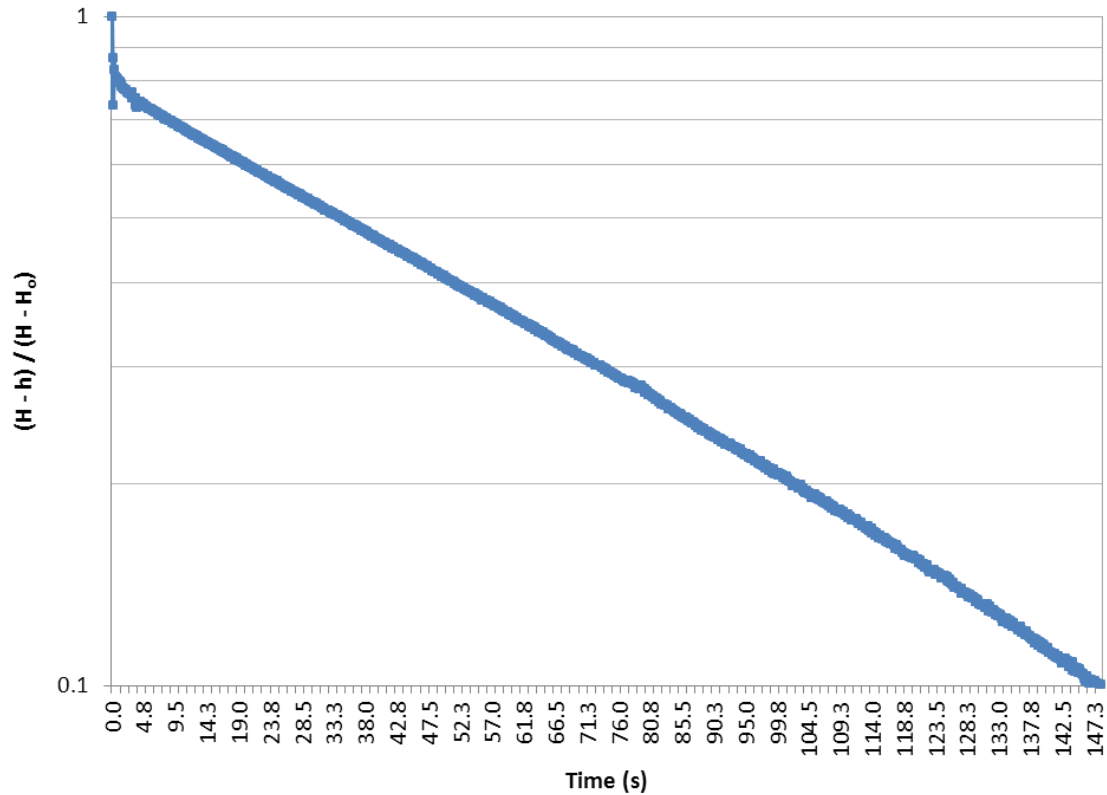
Calculated using Hvorslev
(rising head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-01C-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J.Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 1.0×10^{-5}
Soil Type: Silty sand, trace gravel

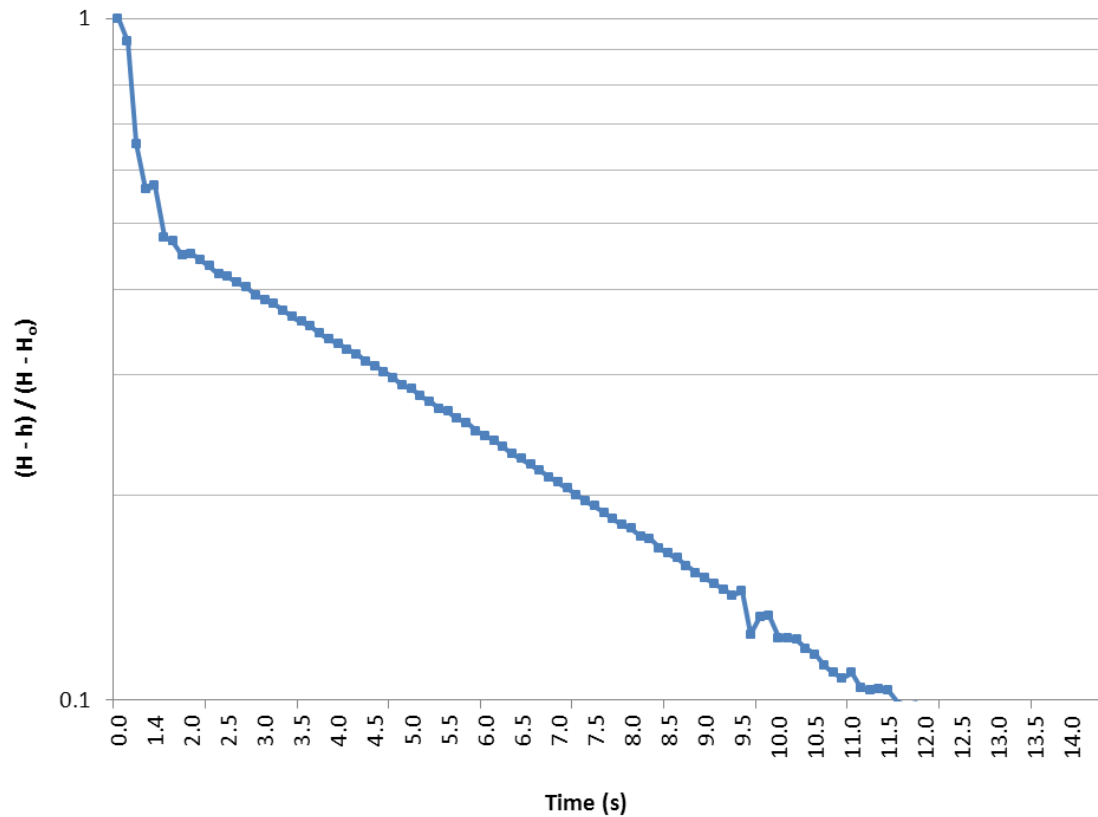
Calculated using Hvorslev
(rising head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-03-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 1.7×10^{-4}
Soil Type: Silty sand, trace gravel

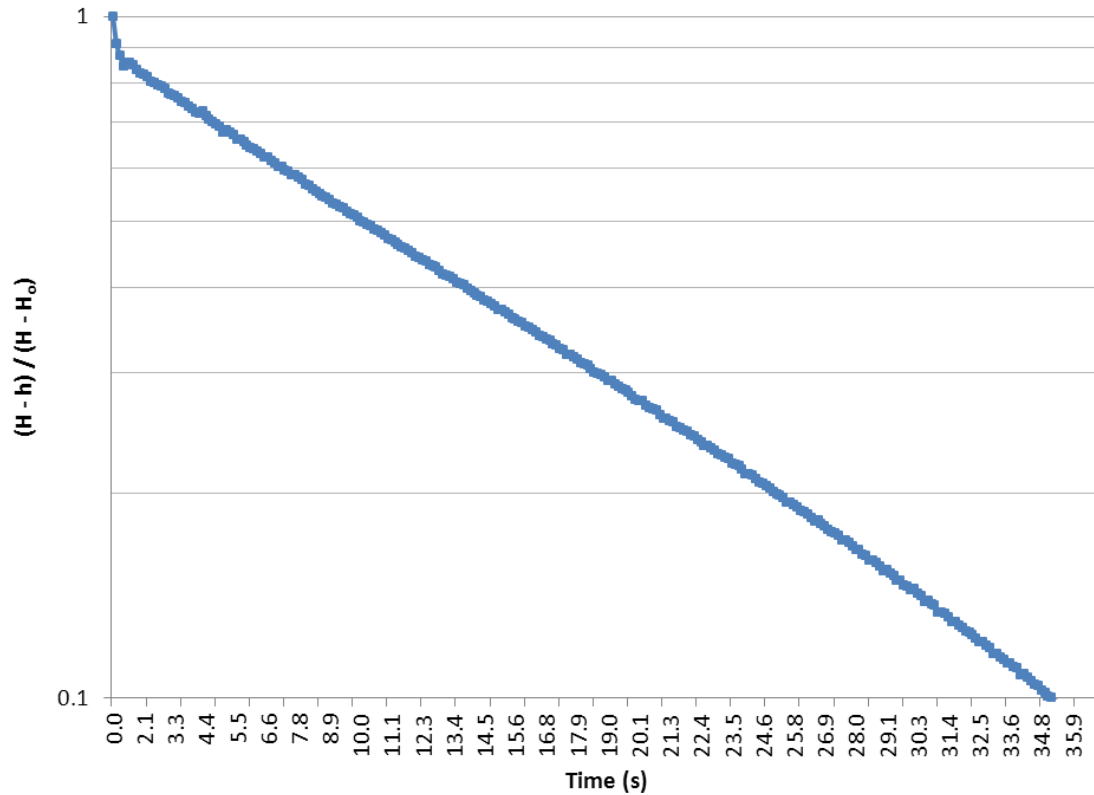
Calculated using Hvorslev
(falling head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-04-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 3.8×10^{-5}
Soil Type: Silty sand

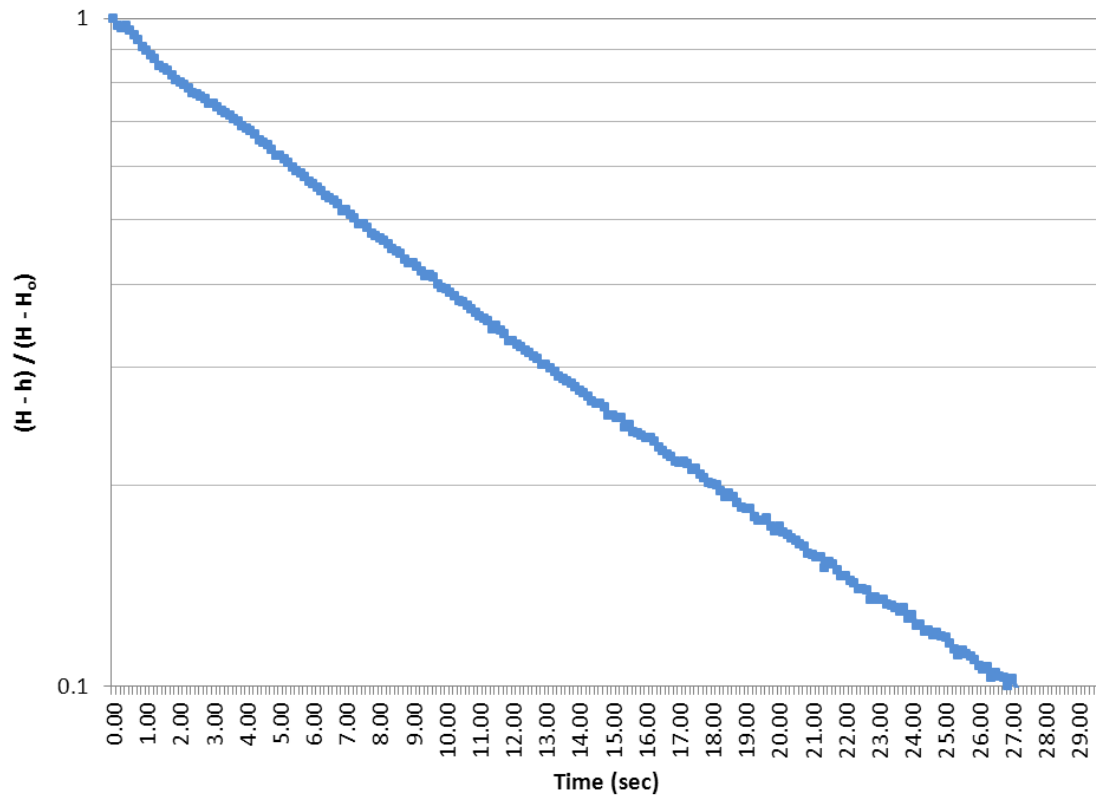
Calculated using Hvorslev
(rising head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-05-13
Test Date(s): 2014-05-22
Analysis Date: 2013-05-27

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 5.7×10^{-5}
Soil Type: Silty sand, trace gravel

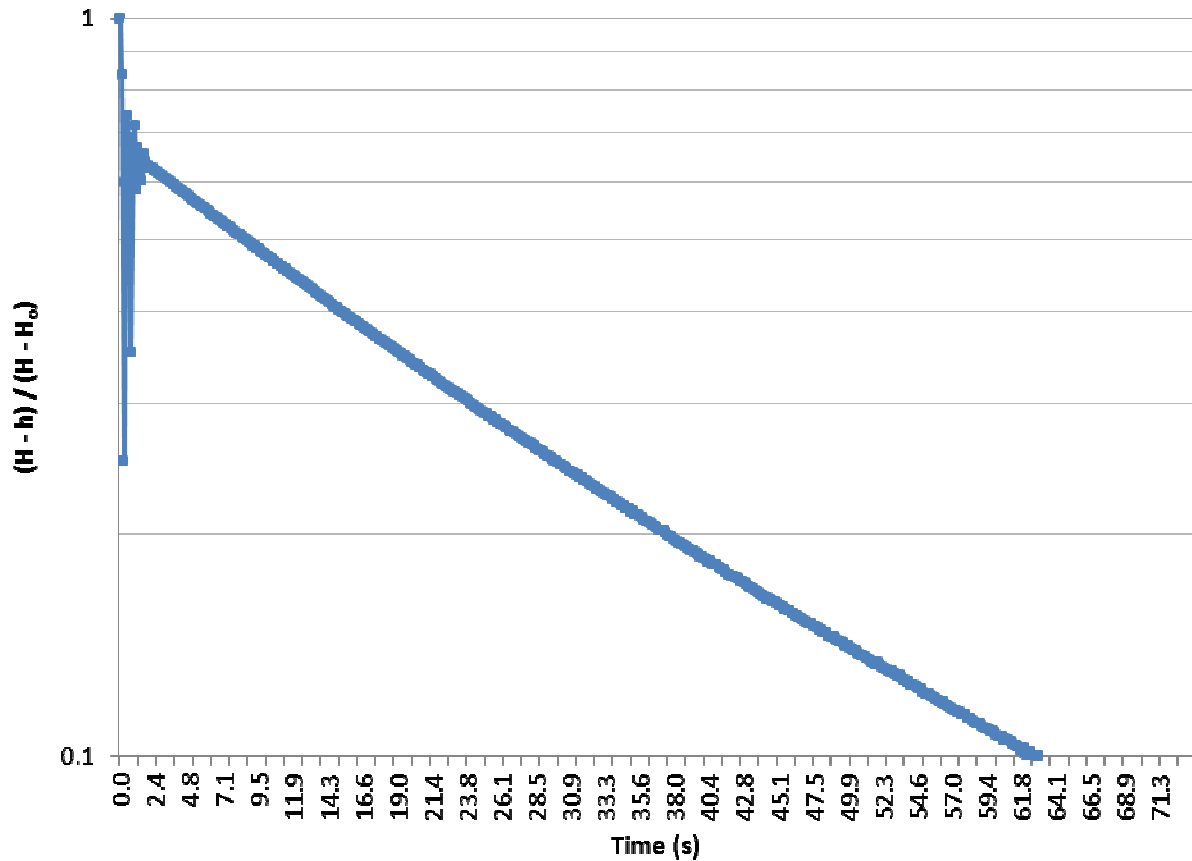
Calculated using Hvorslev
(rising head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-06A-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meter



Hydraulic Conductivity (m/s): 3.3×10^{-5}
Soil Type: Sand, some silt and gravel

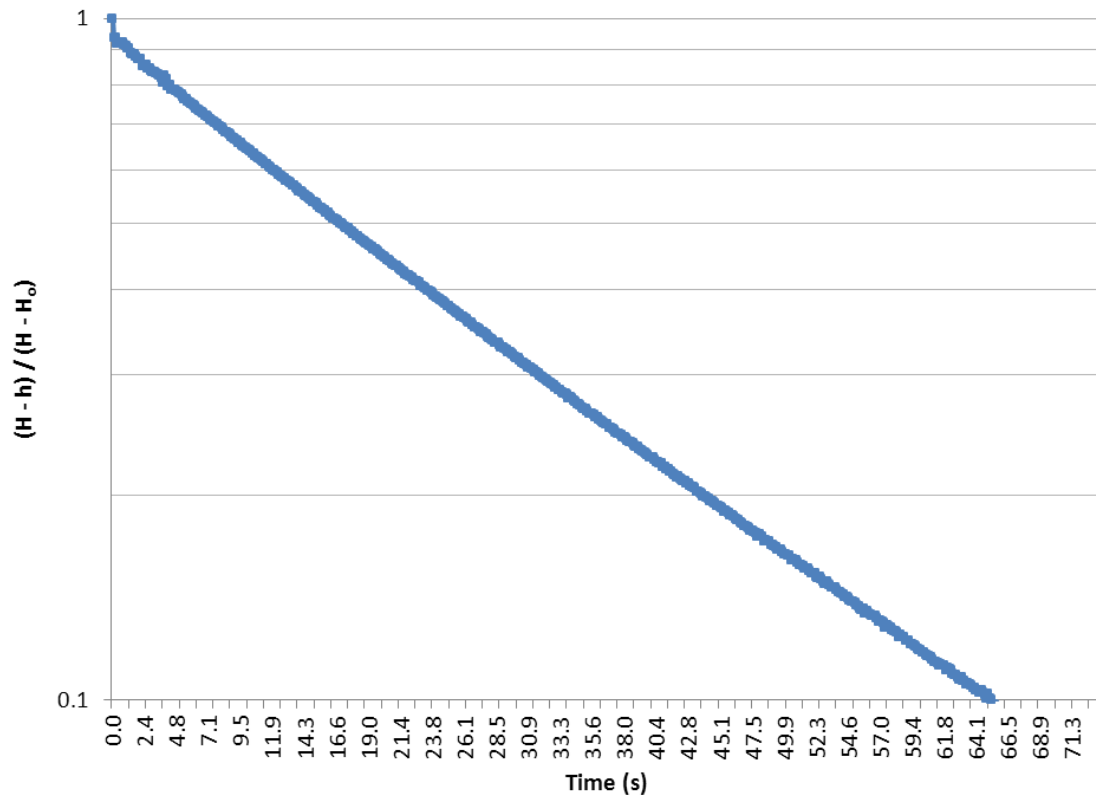
Calculated using Hvorslev
(falling head)

Slug Test Analysis Report

Project: Erbsville South Environmental Study – Hydrogeology Report
Project No.: 160-P-0002619-0-01-300-01
Location: Erbsville Road and Wideman Road, Waterloo, Ontario

Test Well: BH-06B-13
Test Date(s): 2014-01-15
Analysis Date: 2013-01-22

Test Conducted by: J. Stroeder
Analysis Performed by: S. Meteer



Hydraulic Conductivity (m/s): 2.3×10^{-5}
Soil Type: Silty sand

Calculated using Hvorslev
(rising head)



PARTICLE SIZE ANALYSIS

Project: **Erbsville South Environmental Study**

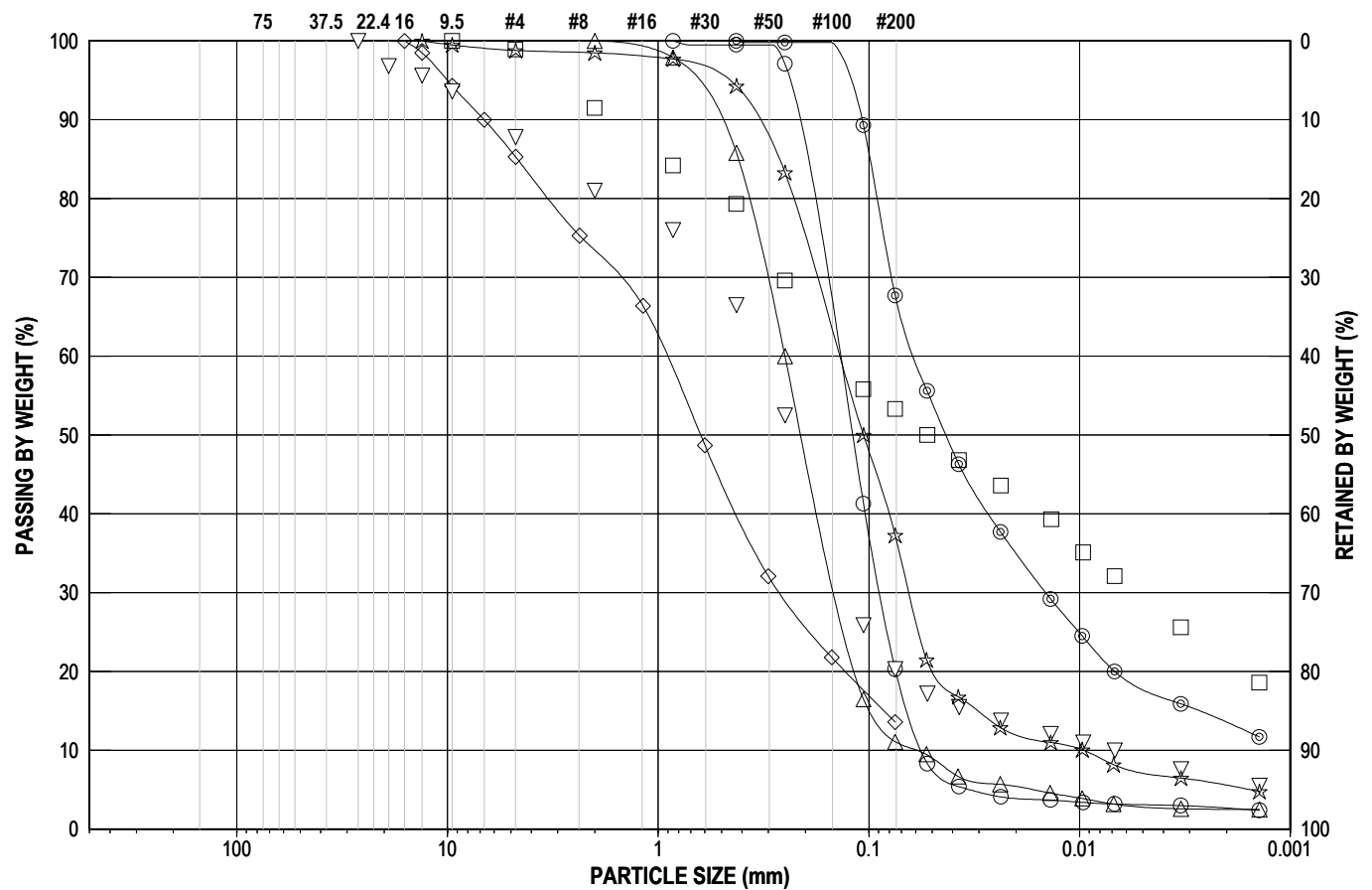
Figure No : **5.01**

Location: **Erbsville Road and Wideman Road, Waterloo, Ontario**

File No : **P-0002619-0-01-300**

UNIFIED SOIL CLASSIFICATION

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	
U.S. SIEVE SIZE IN MILLIMETRES			U.S. STANDARD SIEVE No.			HYDROMETER



Symbol	Borehole n°	Sample n°	Depth (m)	Description
○	BH-01A-13	SS-8	12.19 - 12.65	SAND, some Silt, trace Clay
□	BH-01B-13	SS-4	3.05 - 3.51	Silty Clayey SAND, trace Gravel
▽	BH-01C-13	SS-1	0.76 - 1.22	SAND, some Silt and Gravel, trace Clay
☆	BH-02-13	SS-2	1.52 - 1.98	Silty SAND, trace Clay and Gravel
⊙	BH-02-13	SS-8	15.24 - 15.70	Sandy SILT, some Clay
◇	BH-03-13	SS-12	28.04 - 28.50	SAND, some Gravel and Silt
△	BH-03-13	SS-2	1.52 - 1.98	SAND, trace Silt

Project: **Erbville South Environmental Study**

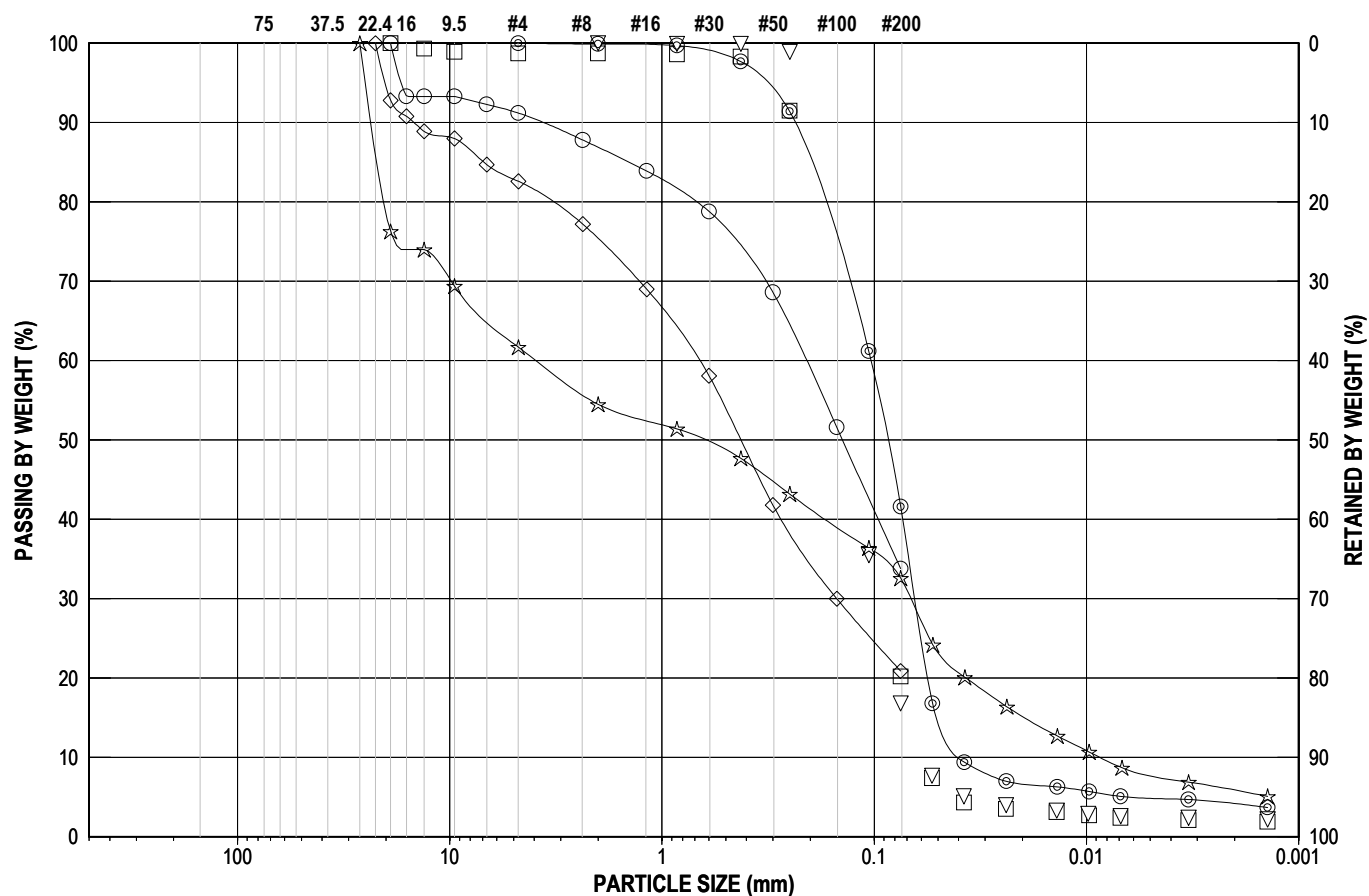
Figure No : **5.02**

Location: **Erbville Road and Wideman Road, Waterloo, Ontario**

File No : **P-0002619-0-01-300**

UNIFIED SOIL CLASSIFICATION

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	
U.S. SIEVE SIZE IN MILLIMETRES			U.S. STANDARD SIEVE No.			HYDROMETER



Symbol	Borehole n°	Sample n°	Depth (m)	Description
○	BH-04-13	SS-2	1.52 - 1.98	Silty SAND, trace Gravel
□	BH-04-13	SS-7	9.14 - 9.60	SAND, some Silt, trace Clay and Gravel
▽	BH-05-13	SS-2	1.52 - 1.98	SAND, some Silt, trace Clay
☆	BH-05-13	SS-8	15.85 - 16.31	Sandy Silty GRAVEL, trace Clay
⊙	BH-06A-13	SS-1	0.76 - 1.22	SAND and SILT, trace Clay
◇	BH-06A-13	SS-11	23.47 - 23.93	Silty SAND, some Gravel



LVM INC.
ATTN: CHRIS HELMER
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Date Received: 22-NOV-13
Report Date: 02-DEC-13 08:41 (MT)
Version: FINAL

Client Phone: 519-741-1313

Certificate of Analysis

Lab Work Order #: L1394993
Project P.O. #: NOT SUBMITTED
Job Reference: 160-P-0002619-0-01-300-01
C of C Numbers: 147257
Legal Site Desc:

Nancy Smith
Account Manager

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CRITERIA REPORT

L1394993 CONTD....

Page 2 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-1 O1A-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO ₃)	240		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	0.067		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								
Chloride	11.7		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	0.18		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	<0.10		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	36.9		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	37.2		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	533		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	0.0018		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.086		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	63.0		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	21.6		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0728		0.0010	mg/L		** 0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0047		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	1.5		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	7.3		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	16.7		0.50	mg/L	20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.406		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO ₃)	401		24	mg/L		** 80-100	29-NOV-13	

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 3 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-1 O1A-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Phosphate-P (ortho)	0.0054		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	306		20	mg/L		500	25-NOV-13	R2748721
Turbidity	9.98		0.10	NTU	**	5	22-NOV-13	R2747500
pH	7.94		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	2.03	DLM	0.10	mg/L	**	0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	<0.010	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.113	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	<0.00090	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	104	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	<0.0050	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	<0.010	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	3.32	DLM	0.50	mg/L	**	0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.0094	DLM	0.0050	mg/L	0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	34.3	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	0.329	DLM	0.010	mg/L	**	0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	<0.50	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	11	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	18.0	DLM	5.0	mg/L	20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.487	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.059	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.041	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527
L1394993-2 O1B-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	224		10	mg/L		30-500	22-NOV-13	R2747583

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 4 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-2 O1B-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER								
General Chemistry Package 1-Groundwater					STANDARDS	GUIDELINES		
Ammonia, Total (as N)	0.060		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								
Chloride	3.4		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	<0.10		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	40.5		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	40.8		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	489		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	0.0019		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.079		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	59.3		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	20.5		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0309		0.0010	mg/L		0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0011		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	1.1		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	6.4		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	11.4		0.50	mg/L	20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.222		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	512		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	0.0054		0.0030	mg/L			22-NOV-13	R2747525

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 6 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-3 O1C-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
CL,F,NO2,NO3,SO4								
Chloride	<2.0		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	<0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	0.20		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	2.2		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	34.2		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	506		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.019		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	78.0		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	17.3		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0109		0.0010	mg/L		0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	<1.0		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	5.0		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	1.27		0.50	mg/L	20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.0991		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	373		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	<0.0030		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	276		20	mg/L		500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 7 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-3 O1C-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	8.47		0.10	NTU	**	5	22-NOV-13	R2747500
pH	7.84		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	2.89	DLM	0.10	mg/L	**	0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	<0.010	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.041	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	<0.00090	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	109	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	<0.0050	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	0.013	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	4.71	DLM	0.50	mg/L	**	0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.0126	DLM	0.0050	mg/L	** 0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	24.3	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	0.283	DLM	0.010	mg/L	**	0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	<0.50	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	<5.0	DLM	5.0	mg/L	20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.163	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.078	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	0.0061	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.103	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527
L1394993-4 BH-03-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	251		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	<0.050		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 8 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-4 BH-03-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER								
General Chemistry Package 1-Groundwater					STANDARDS	GUIDELINES		
CL,F,NO2,NO3,SO4								
Chloride	23.5		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	0.30		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	78.3		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	72.2		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	667		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.093		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	61.1		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	20.1		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0343		0.0010	mg/L		0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0023		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	1.9		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	0.00056		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	5.0		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	49.6	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.226		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	770		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	0.0055		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	406		20	mg/L		500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 9 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-4 BH-03-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	17.4		0.10	NTU		** 5	22-NOV-13	R2747500
pH	7.99		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	13.7	DLM	0.10	mg/L		** 0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	<0.010	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.323	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	<0.00090	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	212	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	0.0124	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	0.0082	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	0.033	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	21.8	DLM	0.50	mg/L		** 0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.0470	DLM	0.0050	mg/L	** 0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	58.5	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	1.67	DLM	0.010	mg/L		** 0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	0.019	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	0.95	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	31	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	52.1	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.471	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.174	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	0.0183	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.127	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527
L1394993-5 BH-06A-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	283		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	0.100		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 10 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-5 BH-06A-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
CL,F,NO2,NO3,SO4								
Chloride	6.3		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	0.20		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	0.25		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	0.92		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	124		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	77.4		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	753		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	0.0013		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.062		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	24.2		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	0.0021		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	8.40		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0325		0.0010	mg/L		0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0166		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	2.2		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	0.00467		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	5.7		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	123	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.133		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	0.0058		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	3150		240	mg/L		** 80-100	30-NOV-13	
Phosphate-P (ortho)	0.0143		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	322		20	mg/L		500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 11 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-5 BH-06A-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	950		0.10	NTU		** 5	22-NOV-13	R2747500
pH	8.18		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	115	DLM	1.0	mg/L		** 0.1	29-NOV-13	R2751527
Antimony (Sb)-Total	<0.050	DLM	0.050	mg/L	* 0.006		29-NOV-13	R2751527
Arsenic (As)-Total	<0.10	DLM	0.10	mg/L	* 0.025		29-NOV-13	R2751527
Barium (Ba)-Total	1.84	DLM	0.20	mg/L	** 1		29-NOV-13	R2751527
Beryllium (Be)-Total	<0.050	DLM	0.050	mg/L			29-NOV-13	R2751527
Bismuth (Bi)-Total	<0.10	DLM	0.10	mg/L			29-NOV-13	R2751527
Boron (B)-Total	<1.0	DLM	1.0	mg/L	5		29-NOV-13	R2751527
Cadmium (Cd)-Total	<0.0090	DLM	0.0090	mg/L	* 0.005		29-NOV-13	R2751527
Calcium (Ca)-Total	918	DLM	50	mg/L			29-NOV-13	R2751527
Chromium (Cr)-Total	0.110	DLM	0.050	mg/L	** 0.05		29-NOV-13	R2751527
Cobalt (Co)-Total	0.061	DLM	0.050	mg/L			29-NOV-13	R2751527
Copper (Cu)-Total	0.21	DLM	0.10	mg/L		1	29-NOV-13	R2751527
Iron (Fe)-Total	189	DLM	5.0	mg/L		** 0.3	29-NOV-13	R2751527
Lead (Pb)-Total	0.324	DLM	0.050	mg/L	** 0.01		29-NOV-13	R2751527
Lithium (Li)-Total	<10	DLM	10	mg/L			29-NOV-13	R2751527
Magnesium (Mg)-Total	207	DLM	50	mg/L			29-NOV-13	R2751527
Manganese (Mn)-Total	14.8	DLM	0.10	mg/L		** 0.05	29-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.050	DLM	0.050	mg/L			29-NOV-13	R2751527
Nickel (Ni)-Total	0.15	DLM	0.10	mg/L			29-NOV-13	R2751527
Phosphorus (P)-Total	6.3	DLM	5.0	mg/L			29-NOV-13	R2751527
Potassium (K)-Total	<100	DLM	100	mg/L			29-NOV-13	R2751527
Selenium (Se)-Total	<0.040	DLM	0.040	mg/L	* 0.01		29-NOV-13	R2751527
Silicon (Si)-Total	190	DLM	100	mg/L			29-NOV-13	R2751527
Silver (Ag)-Total	<0.010	DLM	0.010	mg/L			29-NOV-13	R2751527
Sodium (Na)-Total	181	DLM	50	mg/L	** 20	200	29-NOV-13	R2751527
Strontium (Sr)-Total	1.74	DLM	0.10	mg/L			29-NOV-13	R2751527
Thallium (Tl)-Total	<0.030	DLM	0.030	mg/L			29-NOV-13	R2751527
Tin (Sn)-Total	<0.10	DLM	0.10	mg/L			29-NOV-13	R2751527
Titanium (Ti)-Total	0.28	DLM	0.20	mg/L			29-NOV-13	R2751527
Tungsten (W)-Total	<1.0	DLM	1.0	mg/L			29-NOV-13	R2751527
Uranium (U)-Total	<0.10	DLM	0.10	mg/L	* 0.02		29-NOV-13	R2751527
Vanadium (V)-Total	0.131	DLM	0.050	mg/L			29-NOV-13	R2751527
Zinc (Zn)-Total	1.21	DLM	0.30	mg/L		5	29-NOV-13	R2751527
Zirconium (Zr)-Total	<0.40	DLM	0.40	mg/L			29-NOV-13	R2751527
L1394993-6 BH-06B-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	253		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	0.067		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 12 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-6 BH-06B-13								
Sampled By: J.STROEDER on 21-NOV-13								
Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
CL,F,NO2,NO3,SO4								
Chloride	16.2		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	<0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	<0.10		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	35.6		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	54.3		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	553		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.094		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	73.2		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	21.9		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0791		0.0010	mg/L		** 0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0012		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	1.3		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	6.6		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	5.69		0.50	mg/L	20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.163		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	511		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	0.0037		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	319		20	mg/L		500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 13 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-6 BH-06B-13 Sampled By: J.STROEDER on 21-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	13.5		0.10	NTU		** 5	22-NOV-13	R2747500
pH	7.94		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	6.91	DLM	0.10	mg/L		** 0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	<0.010	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.192	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	<0.00090	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	144	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	0.0100	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	0.0056	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	0.017	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	12.7	DLM	0.50	mg/L		** 0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.0146	DLM	0.0050	mg/L	** 0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	37.0	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	0.616	DLM	0.010	mg/L		** 0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	0.012	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	<0.50	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	19	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	6.0	DLM	5.0	mg/L	20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.283	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.184	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	0.0136	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.067	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527
L1394993-7 BH-04-13 Sampled By: J.STROEDER on 22-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	264		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	<0.050		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 14 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-7 BH-04-13								
Sampled By: J.STROEDER on 22-NOV-13								
Matrix: WATER								
General Chemistry Package 1-Groundwater					STANDARDS	GUIDELINES		
CL,F,NO2,NO3,SO4								
Chloride	165		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	<0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	0.66		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	17.2		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	103		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	1030		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.084		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	121		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	0.00055		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	28.9		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.129		0.0010	mg/L		** 0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	0.0012		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	0.0021		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	1.8		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	5.8		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	35.0	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.286		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	2020		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	0.0041		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	615		20	mg/L		** 500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 15 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-7 BH-04-13 Sampled By: J.STROEDER on 22-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	52.0		0.10	NTU		** 5	22-NOV-13	R2747500
pH	7.84		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	27.5	DLM	0.10	mg/L		** 0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	0.019	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.297	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	0.00151	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	580	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	0.0394	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	0.0308	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	0.134	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	59.4	DLM	0.50	mg/L		** 0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.157	DLM	0.0050	mg/L	** 0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	139	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	2.85	DLM	0.010	mg/L		** 0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	0.059	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	2.45	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	45	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	35.5	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.892	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.623	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	0.0612	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.612	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527
L1394993-8 BH-05-13 Sampled By: J.STROEDER on 22-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Alkalinity, Total (as CaCO3)	265		10	mg/L		30-500	22-NOV-13	R2747583
Ammonia, Total (as N)	<0.050		0.050	mg/L			24-NOV-13	R2748081
CL,F,NO2,NO3,SO4								

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 16 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-8 BH-05-13								
Sampled By: J.STROEDER on 22-NOV-13								
Matrix: WATER								
General Chemistry Package 1-Groundwater					STANDARDS	GUIDELINES		
CL,F,NO2,NO3,SO4								
Chloride	56.6		2.0	mg/L		250	25-NOV-13	R2750374
Fluoride	<0.10		0.10	mg/L	1.5		25-NOV-13	R2750374
Nitrite-N	<0.10		0.10	mg/L	1		25-NOV-13	R2750374
Nitrate-N	1.18		0.10	mg/L	10		25-NOV-13	R2750374
Sulphate	57.9		2.0	mg/L		500	25-NOV-13	R2750374
Color, Apparent	90.0		1.0	C.U.		** 5	22-NOV-13	R2747589
Conductivity	767		3.0	umhos/cm			22-NOV-13	R2748441
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			22-NOV-13	R2747391
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-NOV-13	R2751433
Antimony (Sb)-Dissolved	<0.0050		0.0050	mg/L	0.006		28-NOV-13	R2751433
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-NOV-13	R2751433
Barium (Ba)-Dissolved	0.143		0.010	mg/L	1		28-NOV-13	R2751433
Beryllium (Be)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Boron (B)-Dissolved	<0.050		0.050	mg/L	5		28-NOV-13	R2751433
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-NOV-13	R2751433
Calcium (Ca)-Dissolved	84.1		0.50	mg/L			28-NOV-13	R2751433
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-NOV-13	R2751433
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-NOV-13	R2751433
Copper (Cu)-Dissolved	<0.0010		0.0010	mg/L		1	28-NOV-13	R2751433
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-NOV-13	R2751433
Lead (Pb)-Dissolved	<0.0010		0.0010	mg/L	0.01		28-NOV-13	R2751433
Magnesium (Mg)-Dissolved	27.3		0.50	mg/L			28-NOV-13	R2751433
Manganese (Mn)-Dissolved	0.0606		0.0010	mg/L		** 0.05	28-NOV-13	R2751433
Molybdenum (Mo)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Nickel (Ni)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-NOV-13	R2751433
Potassium (K)-Dissolved	2.3		1.0	mg/L			28-NOV-13	R2751433
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-NOV-13	R2751433
Silicon (Si)-Dissolved	6.2		1.0	mg/L			28-NOV-13	R2751433
Silver (Ag)-Dissolved	<0.00010		0.00010	mg/L			28-NOV-13	R2751433
Sodium (Na)-Dissolved	26.1		0.50	mg/L	** 20	200	28-NOV-13	R2751433
Strontium (Sr)-Dissolved	0.261		0.0010	mg/L			28-NOV-13	R2751433
Thallium (Tl)-Dissolved	<0.00030		0.00030	mg/L			28-NOV-13	R2751433
Tin (Sn)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Titanium (Ti)-Dissolved	<0.0020		0.0020	mg/L			28-NOV-13	R2751433
Tungsten (W)-Dissolved	<0.010		0.010	mg/L			28-NOV-13	R2751433
Uranium (U)-Dissolved	<0.0050		0.0050	mg/L	0.02		28-NOV-13	R2751433
Vanadium (V)-Dissolved	<0.0010		0.0010	mg/L			28-NOV-13	R2751433
Zinc (Zn)-Dissolved	<0.0030		0.0030	mg/L		5	28-NOV-13	R2751433
Zirconium (Zr)-Dissolved	<0.0040		0.0040	mg/L			28-NOV-13	R2751433
Hardness (as CaCO3)	1120		24	mg/L		** 80-100	29-NOV-13	
Phosphate-P (ortho)	0.0049		0.0030	mg/L			22-NOV-13	R2747525
Total Dissolved Solids	453		20	mg/L		500	25-NOV-13	R2748721

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1394993 CONTD....

Page 17 of 19

02-DEC-13 08:42:09

160-P-0002619-0-01-300-01

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1394993-8 BH-05-13 Sampled By: J.STROEDER on 22-NOV-13 Matrix: WATER					STANDARDS	GUIDELINES		
General Chemistry Package 1-Groundwater								
Turbidity	24.0		0.10	NTU		** 5	22-NOV-13	R2747500
pH	7.90		0.10	pH units		6.5-8.5	22-NOV-13	R2748420
Individual Analytes								
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	15.5	DLM	0.10	mg/L		** 0.1	28-NOV-13	R2751527
Antimony (Sb)-Total	<0.0050	DLM	0.0050	mg/L	0.006		28-NOV-13	R2751527
Arsenic (As)-Total	<0.010	DLM	0.010	mg/L	0.025		28-NOV-13	R2751527
Barium (Ba)-Total	0.355	DLM	0.020	mg/L	1		28-NOV-13	R2751527
Beryllium (Be)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Bismuth (Bi)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Boron (B)-Total	<0.10	DLM	0.10	mg/L	5		28-NOV-13	R2751527
Cadmium (Cd)-Total	<0.00090	DLM	0.00090	mg/L	0.005		28-NOV-13	R2751527
Calcium (Ca)-Total	310	DLM	5.0	mg/L			28-NOV-13	R2751527
Chromium (Cr)-Total	0.0169	DLM	0.0050	mg/L	0.05		28-NOV-13	R2751527
Cobalt (Co)-Total	0.0095	DLM	0.0050	mg/L			28-NOV-13	R2751527
Copper (Cu)-Total	0.031	DLM	0.010	mg/L		1	28-NOV-13	R2751527
Iron (Fe)-Total	24.8	DLM	0.50	mg/L		** 0.3	28-NOV-13	R2751527
Lead (Pb)-Total	0.0392	DLM	0.0050	mg/L	** 0.01		28-NOV-13	R2751527
Lithium (Li)-Total	<1.0	DLM	1.0	mg/L			28-NOV-13	R2751527
Magnesium (Mg)-Total	84.0	DLM	5.0	mg/L			28-NOV-13	R2751527
Manganese (Mn)-Total	1.93	DLM	0.010	mg/L		** 0.05	28-NOV-13	R2751527
Molybdenum (Mo)-Total	<0.0050	DLM	0.0050	mg/L			28-NOV-13	R2751527
Nickel (Ni)-Total	0.021	DLM	0.010	mg/L			28-NOV-13	R2751527
Phosphorus (P)-Total	1.42	DLM	0.50	mg/L			28-NOV-13	R2751527
Potassium (K)-Total	<10	DLM	10	mg/L			28-NOV-13	R2751527
Selenium (Se)-Total	<0.0040	DLM	0.0040	mg/L	0.01		28-NOV-13	R2751527
Silicon (Si)-Total	34	DLM	10	mg/L			28-NOV-13	R2751527
Silver (Ag)-Total	<0.0010	DLM	0.0010	mg/L			28-NOV-13	R2751527
Sodium (Na)-Total	26.9	DLM	5.0	mg/L	** 20	200	28-NOV-13	R2751527
Strontium (Sr)-Total	0.619	DLM	0.010	mg/L			28-NOV-13	R2751527
Thallium (Tl)-Total	<0.0030	DLM	0.0030	mg/L			28-NOV-13	R2751527
Tin (Sn)-Total	<0.010	DLM	0.010	mg/L			28-NOV-13	R2751527
Titanium (Ti)-Total	0.333	DLM	0.020	mg/L			28-NOV-13	R2751527
Tungsten (W)-Total	<0.10	DLM	0.10	mg/L			28-NOV-13	R2751527
Uranium (U)-Total	<0.010	DLM	0.010	mg/L	0.02		28-NOV-13	R2751527
Vanadium (V)-Total	0.0244	DLM	0.0050	mg/L			28-NOV-13	R2751527
Zinc (Zn)-Total	0.138	DLM	0.030	mg/L		5	28-NOV-13	R2751527
Zirconium (Zr)-Total	<0.040	DLM	0.040	mg/L			28-NOV-13	R2751527

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

Reference Information

160-P-0002619-0-01-300-01

L1394993 CONTD....

Page 18 of 19
02-DEC-13 08:42:09

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ALK-WT	Water	Alkalinity, Total (as CaCO ₃)		EPA 310.2
ANIONS5-WT	Water	CL,F,NO ₂ ,NO ₃ ,SO ₄		EPA 300.0 (IC)
COLOUR-WT	Water	Colour		APHA 2120
Apparent colour is determined by analysis of the decanted sample using the platinum-cobalt colourimetric method.				
EC-WT	Water	Conductivity		APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.				
ETL-HARDNESS-CALC-WT	Water	Hardness (as CaCO ₃)		APHA 2340 B
MET-D-MS-WT	Water	Dissolved Metals in Water by ICPMS		EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.				
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).				
MET-T-MS-WT	Water	Total Metals in Water by ICPMS		EPA 200.8
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).				
NH ₃ -WT	Water	Ammonia, Total as N		EPA 350.1
Sample is measured colorimetrically. When sample is turbid a distillation step is required, sample is distilled into a solution of boric acid and measured colorimetrically.				
P-ORTHO-LOW-WT	Water	Phosphorus-P (ortho)		APHA 4500-P B E
PH-WT	Water	pH		APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.				
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).				
SOLIDS-TDS-WT	Water	Total Dissolved Solids		APHA 2540C
A well-mixed sample is filtered through glass fibres filter. A known volume of the filtrate is evaporated and dried at 105–51C overnight and then 180–101C for 1hr.				
TURBIDITY-WT	Water	Turbidity		APHA 2130 B
Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.				

Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

147257

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

160-P-0002619-0-01-300-01

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of criteria limits is provided as is without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 1 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT Water								
Batch	R2747583							
WG1793645-3 CRM		WT-ALK-CRM						
Alkalinity, Total (as CaCO3)			92.2		%		80-120	22-NOV-13
WG1793645-2 CVS								
Alkalinity, Total (as CaCO3)			108.1		%		85-115	22-NOV-13
WG1793645-4 DUP		L1394300-1						
Alkalinity, Total (as CaCO3)		20	19		mg/L	5.8	20	22-NOV-13
WG1793645-5 DUP		L1394993-1						
Alkalinity, Total (as CaCO3)		240	242		mg/L	1.0	20	22-NOV-13
WG1793645-1 MB								
Alkalinity, Total (as CaCO3)			<10		mg/L		10	22-NOV-13
ANIONS5-WT Water								
Batch	R2750374							
WG1794541-5 DUP		L1394993-8						
Chloride		56.6	56.1		mg/L	0.8	20	25-NOV-13
Fluoride		<0.10	<0.10	RPD-NA	mg/L	N/A	20	25-NOV-13
Nitrite-N		<0.10	<0.10	RPD-NA	mg/L	N/A	20	25-NOV-13
Nitrate-N		1.18	1.18		mg/L	0.2	20	25-NOV-13
Sulphate		57.9	57.8		mg/L	0.3	20	25-NOV-13
WG1794541-2 LCS								
Chloride			101.6		%		85-115	25-NOV-13
Fluoride			102.6		%		85-115	25-NOV-13
Nitrite-N			102.3		%		85-115	25-NOV-13
Nitrate-N			101.3		%		85-115	25-NOV-13
Sulphate			101.4		%		85-115	25-NOV-13
WG1794541-3 LCSD		WG1794541-2						
Chloride		101.6	101.5		%	0.1	25	25-NOV-13
Fluoride		102.6	102.5		%	0.2	25	25-NOV-13
Nitrite-N		102.3	102.2		%	0.1	25	25-NOV-13
Nitrate-N		101.3	101.2		%	0.1	25	25-NOV-13
Sulphate		101.4	101.0		%	0.3	25	25-NOV-13
WG1794541-1 MB								
Chloride			<2.0		mg/L		2	25-NOV-13
Fluoride			<0.10		mg/L		0.1	25-NOV-13
Nitrite-N			<0.10		mg/L		0.1	25-NOV-13
Nitrate-N			<0.10		mg/L		0.1	25-NOV-13
Sulphate			<2.0		mg/L		2	25-NOV-13

Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 2 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-WT		Water						
Batch	R2747589							
WG1793660-3	CRM	WT-COLOUR-CRM						
Color, Apparent			96.5		%		80-120	22-NOV-13
WG1793660-2	CVS		99.2		%		85-115	22-NOV-13
Color, Apparent								
WG1793660-4	DUP	L1394993-1	37.2	37.0	C.U.	0.7	20	22-NOV-13
Color, Apparent								
WG1793660-1	MB		<1.0		C.U.		1	22-NOV-13
Color, Apparent								
EC-WT		Water						
Batch	R2748441							
WG1793377-2	CVS		100.1		%		90-110	22-NOV-13
Conductivity								
WG1793377-3	DUP	WG1793377-4	795	795	umhos/cm	0.0	10	22-NOV-13
Conductivity								
WG1793377-5	DUP	L1394898-1	97.5	97.4	umhos/cm	0.1	10	22-NOV-13
Conductivity								
WG1793377-6	DUP	L1394001-1	939	938	umhos/cm	0.1	10	22-NOV-13
Conductivity								
WG1793377-1	MB		<3.0		umhos/cm		3	22-NOV-13
Conductivity								
MET-D-MS-WT		Water						
Batch	R2751433							
WG1795272-1	CVS							
Aluminum (Al)-Dissolved			96.7		%		80-120	28-NOV-13
Antimony (Sb)-Dissolved			98.0		%		80-120	28-NOV-13
Arsenic (As)-Dissolved			94.9		%		80-120	28-NOV-13
Barium (Ba)-Dissolved			96.0		%		80-120	28-NOV-13
Beryllium (Be)-Dissolved			96.9		%		80-120	28-NOV-13
Bismuth (Bi)-Dissolved			110.9		%		80-120	28-NOV-13
Boron (B)-Dissolved			101.7		%		80-120	28-NOV-13
Cadmium (Cd)-Dissolved			97.5		%		80-120	28-NOV-13
Calcium (Ca)-Dissolved			97.3		%		80-120	28-NOV-13
Chromium (Cr)-Dissolved			97.0		%		80-120	28-NOV-13
Cobalt (Co)-Dissolved			97.9		%		80-120	28-NOV-13
Copper (Cu)-Dissolved			96.9		%		80-120	28-NOV-13
Iron (Fe)-Dissolved			100.5		%		80-120	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 3 of 22

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1795272-1		CVS						
Lead (Pb)-Dissolved			102.2		%		80-120	28-NOV-13
Magnesium (Mg)-Dissolved			102.8		%		80-120	28-NOV-13
Manganese (Mn)-Dissolved			97.9		%		80-120	28-NOV-13
Molybdenum (Mo)-Dissolved			98.4		%		80-120	28-NOV-13
Nickel (Ni)-Dissolved			99.4		%		80-120	28-NOV-13
Phosphorus (P)-Dissolved			93.9		%		80-120	28-NOV-13
Potassium (K)-Dissolved			98.0		%		80-120	28-NOV-13
Selenium (Se)-Dissolved			98.3		%		80-120	28-NOV-13
Silicon (Si)-Dissolved			96.3		%		80-120	28-NOV-13
Silver (Ag)-Dissolved			104.1		%		80-120	28-NOV-13
Sodium (Na)-Dissolved			97.5		%		80-120	28-NOV-13
Strontium (Sr)-Dissolved			99.7		%		80-120	28-NOV-13
Thallium (Tl)-Dissolved			109.6		%		80-120	28-NOV-13
Tin (Sn)-Dissolved			98.4		%		80-120	28-NOV-13
Titanium (Ti)-Dissolved			99.8		%		80-120	28-NOV-13
Tungsten (W)-Dissolved			102.4		%		80-120	28-NOV-13
Uranium (U)-Dissolved			107.2		%		80-120	28-NOV-13
Vanadium (V)-Dissolved			97.3		%		80-120	28-NOV-13
Zinc (Zn)-Dissolved			93.9		%		80-120	28-NOV-13
Zirconium (Zr)-Dissolved			98.5		%		80-120	28-NOV-13
WG1795272-3		CVS						
Aluminum (Al)-Dissolved			98.0		%		80-120	29-NOV-13
Antimony (Sb)-Dissolved			97.7		%		80-120	29-NOV-13
Arsenic (As)-Dissolved			96.3		%		80-120	29-NOV-13
Barium (Ba)-Dissolved			100.7		%		80-120	29-NOV-13
Beryllium (Be)-Dissolved			95.2		%		80-120	29-NOV-13
Bismuth (Bi)-Dissolved			107.5		%		80-120	29-NOV-13
Boron (B)-Dissolved			94.9		%		80-120	29-NOV-13
Cadmium (Cd)-Dissolved			103.1		%		80-120	29-NOV-13
Calcium (Ca)-Dissolved			96.0		%		80-120	29-NOV-13
Chromium (Cr)-Dissolved			99.7		%		80-120	29-NOV-13
Cobalt (Co)-Dissolved			100.7		%		80-120	29-NOV-13
Copper (Cu)-Dissolved			101.0		%		80-120	29-NOV-13
Iron (Fe)-Dissolved			94.5		%		80-120	29-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 4 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1795272-3		CVS						
Lead (Pb)-Dissolved			101.1		%		80-120	29-NOV-13
Magnesium (Mg)-Dissolved			95.7		%		80-120	29-NOV-13
Manganese (Mn)-Dissolved			100.5		%		80-120	29-NOV-13
Molybdenum (Mo)-Dissolved			94.2		%		80-120	29-NOV-13
Nickel (Ni)-Dissolved			101.0		%		80-120	29-NOV-13
Phosphorus (P)-Dissolved			98.7		%		80-120	29-NOV-13
Potassium (K)-Dissolved			96.7		%		80-120	29-NOV-13
Selenium (Se)-Dissolved			97.3		%		80-120	29-NOV-13
Silicon (Si)-Dissolved			97.7		%		80-120	29-NOV-13
Silver (Ag)-Dissolved			99.0		%		80-120	29-NOV-13
Sodium (Na)-Dissolved			94.1		%		80-120	29-NOV-13
Strontium (Sr)-Dissolved			105.4		%		80-120	29-NOV-13
Thallium (Tl)-Dissolved			107.3		%		80-120	29-NOV-13
Tin (Sn)-Dissolved			98.9		%		80-120	29-NOV-13
Titanium (Ti)-Dissolved			100.1		%		80-120	29-NOV-13
Tungsten (W)-Dissolved			101.1		%		80-120	29-NOV-13
Uranium (U)-Dissolved			105.8		%		80-120	29-NOV-13
Vanadium (V)-Dissolved			99.5		%		80-120	29-NOV-13
Zinc (Zn)-Dissolved			96.4		%		80-120	29-NOV-13
Zirconium (Zr)-Dissolved			96.4		%		80-120	29-NOV-13
WG1793491-4		DUP	WG1793491-3					
Aluminum (Al)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-NOV-13
Antimony (Sb)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Arsenic (As)-Dissolved		0.0018	0.0019		mg/L	4.1	20	28-NOV-13
Barium (Ba)-Dissolved		0.0858	0.0884		mg/L	2.9	20	28-NOV-13
Beryllium (Be)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Bismuth (Bi)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Boron (B)-Dissolved		0.020	0.021		mg/L	1.4	20	28-NOV-13
Cadmium (Cd)-Dissolved		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	28-NOV-13
Calcium (Ca)-Dissolved		64.6	64.7		mg/L	0.2	20	28-NOV-13
Chromium (Cr)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Cobalt (Co)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Copper (Cu)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 5 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1793491-4	DUP	WG1793491-3						
Iron (Fe)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-NOV-13
Lead (Pb)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Magnesium (Mg)-Dissolved		22.5	22.3		mg/L	0.6	20	28-NOV-13
Manganese (Mn)-Dissolved		0.0741	0.0754		mg/L	1.7	20	28-NOV-13
Molybdenum (Mo)-Dissolved		0.00457	0.00472		mg/L	3.2	20	28-NOV-13
Nickel (Ni)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-NOV-13
Potassium (K)-Dissolved		1.6	1.6		mg/L	1.7	20	28-NOV-13
Selenium (Se)-Dissolved		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	28-NOV-13
Silicon (Si)-Dissolved		7.3	7.5		mg/L	2.7	20	28-NOV-13
Silver (Ag)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	28-NOV-13
Sodium (Na)-Dissolved		17.4	17.6		mg/L	1.4	20	28-NOV-13
Strontium (Sr)-Dissolved		0.407	0.415		mg/L	2.1	20	28-NOV-13
Thallium (Tl)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	28-NOV-13
Tin (Sn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Titanium (Ti)-Dissolved		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	28-NOV-13
Tungsten (W)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-NOV-13
Uranium (U)-Dissolved		0.0023	0.0024		mg/L	2.5	20	28-NOV-13
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Zinc (Zn)-Dissolved		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	28-NOV-13
Zirconium (Zr)-Dissolved		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	28-NOV-13
WG1793491-2	LCS							
Aluminum (Al)-Dissolved			93.2		%		80-120	28-NOV-13
Antimony (Sb)-Dissolved			96.7		%		80-120	28-NOV-13
Arsenic (As)-Dissolved			93.1		%		80-120	28-NOV-13
Barium (Ba)-Dissolved			94.4		%		80-120	28-NOV-13
Beryllium (Be)-Dissolved			90.2		%		80-120	28-NOV-13
Bismuth (Bi)-Dissolved			100.6		%		80-120	28-NOV-13
Boron (B)-Dissolved			86.9		%		80-120	28-NOV-13
Cadmium (Cd)-Dissolved			94.6		%		80-120	28-NOV-13
Calcium (Ca)-Dissolved			97.0		%		80-120	28-NOV-13
Chromium (Cr)-Dissolved			93.2		%		80-120	28-NOV-13
Cobalt (Co)-Dissolved			92.5		%		80-120	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 6 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1793491-2	LCS							
Copper (Cu)-Dissolved			94.0		%		80-120	28-NOV-13
Iron (Fe)-Dissolved			97.5		%		80-120	28-NOV-13
Lead (Pb)-Dissolved			100.4		%		80-120	28-NOV-13
Magnesium (Mg)-Dissolved			94.9		%		80-120	28-NOV-13
Manganese (Mn)-Dissolved			93.3		%		80-120	28-NOV-13
Molybdenum (Mo)-Dissolved			98.6		%		80-120	28-NOV-13
Nickel (Ni)-Dissolved			93.7		%		80-120	28-NOV-13
Phosphorus (P)-Dissolved			92.8		%		80-120	28-NOV-13
Potassium (K)-Dissolved			96.1		%		80-120	28-NOV-13
Selenium (Se)-Dissolved			98.3		%		80-120	28-NOV-13
Silicon (Si)-Dissolved			96.8		%		80-120	28-NOV-13
Silver (Ag)-Dissolved			97.5		%		80-120	28-NOV-13
Sodium (Na)-Dissolved			94.8		%		80-120	28-NOV-13
Strontium (Sr)-Dissolved			98.1		%		80-120	28-NOV-13
Thallium (Tl)-Dissolved			100.7		%		80-120	28-NOV-13
Tin (Sn)-Dissolved			92.6		%		80-120	28-NOV-13
Titanium (Ti)-Dissolved			91.8		%		80-120	28-NOV-13
Tungsten (W)-Dissolved			97.6		%		80-120	28-NOV-13
Uranium (U)-Dissolved			99.3		%		80-120	28-NOV-13
Vanadium (V)-Dissolved			93.5		%		80-120	28-NOV-13
Zinc (Zn)-Dissolved			94.9		%		80-120	28-NOV-13
Zirconium (Zr)-Dissolved			97.1		%		80-120	28-NOV-13
WG1793491-1	MB							
Aluminum (Al)-Dissolved			<0.010		mg/L		0.01	28-NOV-13
Antimony (Sb)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Arsenic (As)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Barium (Ba)-Dissolved			<0.0020		mg/L		0.002	28-NOV-13
Beryllium (Be)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Bismuth (Bi)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Boron (B)-Dissolved			<0.010		mg/L		0.01	28-NOV-13
Cadmium (Cd)-Dissolved			<0.000090		mg/L		0.00009	28-NOV-13
Calcium (Ca)-Dissolved			<0.50		mg/L		0.5	28-NOV-13
Chromium (Cr)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Cobalt (Co)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 7 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1793491-1 MB								
Copper (Cu)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Iron (Fe)-Dissolved			<0.050		mg/L		0.05	28-NOV-13
Lead (Pb)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Magnesium (Mg)-Dissolved			<0.50		mg/L		0.5	28-NOV-13
Manganese (Mn)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Molybdenum (Mo)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Nickel (Ni)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	28-NOV-13
Potassium (K)-Dissolved			<1.0		mg/L		1	28-NOV-13
Selenium (Se)-Dissolved			<0.00040		mg/L		0.0004	28-NOV-13
Silicon (Si)-Dissolved			<1.0		mg/L		1	28-NOV-13
Silver (Ag)-Dissolved			<0.00010		mg/L		0.0001	28-NOV-13
Sodium (Na)-Dissolved			<0.50		mg/L		0.5	28-NOV-13
Strontium (Sr)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Thallium (Tl)-Dissolved			<0.00030		mg/L		0.0003	28-NOV-13
Tin (Sn)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Titanium (Ti)-Dissolved			<0.0020		mg/L		0.002	28-NOV-13
Tungsten (W)-Dissolved			<0.010		mg/L		0.01	28-NOV-13
Uranium (U)-Dissolved			<0.0010		mg/L		0.001	28-NOV-13
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	28-NOV-13
Zinc (Zn)-Dissolved			<0.0030		mg/L		0.003	28-NOV-13
Zirconium (Zr)-Dissolved			<0.0040		mg/L		0.004	28-NOV-13
WG1793491-5 MS		WG1793491-3						
Aluminum (Al)-Dissolved			87.5		%		70-130	28-NOV-13
Antimony (Sb)-Dissolved			85.5		%		70-130	28-NOV-13
Arsenic (As)-Dissolved			89.5		%		70-130	28-NOV-13
Barium (Ba)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Beryllium (Be)-Dissolved			80.2		%		70-130	28-NOV-13
Bismuth (Bi)-Dissolved			74.1		%		70-130	28-NOV-13
Boron (B)-Dissolved			74.5		%		70-130	28-NOV-13
Cadmium (Cd)-Dissolved			90.7		%		70-130	28-NOV-13
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Chromium (Cr)-Dissolved			87.6		%		70-130	28-NOV-13
Cobalt (Co)-Dissolved			83.5		%		70-130	28-NOV-13

Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 8 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2751433							
WG1793491-5 MS		WG1793491-3						
Copper (Cu)-Dissolved			82.9		%		70-130	28-NOV-13
Iron (Fe)-Dissolved			90.4		%		70-130	28-NOV-13
Lead (Pb)-Dissolved			85.8		%		70-130	28-NOV-13
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Manganese (Mn)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Molybdenum (Mo)-Dissolved			88.5		%		70-130	28-NOV-13
Nickel (Ni)-Dissolved			83.9		%		70-130	28-NOV-13
Phosphorus (P)-Dissolved			87.6		%		70-130	28-NOV-13
Potassium (K)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Selenium (Se)-Dissolved			92.6		%		70-130	28-NOV-13
Silicon (Si)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Silver (Ag)-Dissolved			84.8		%		70-130	28-NOV-13
Sodium (Na)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	28-NOV-13
Thallium (Tl)-Dissolved			89.8		%		70-130	28-NOV-13
Tin (Sn)-Dissolved			83.7		%		70-130	28-NOV-13
Titanium (Ti)-Dissolved			86.9		%		70-130	28-NOV-13
Tungsten (W)-Dissolved			87.8		%		70-130	28-NOV-13
Uranium (U)-Dissolved			90.3		%		70-130	28-NOV-13
Vanadium (V)-Dissolved			88.5		%		70-130	28-NOV-13
Zinc (Zn)-Dissolved			88.4		%		70-130	28-NOV-13
Zirconium (Zr)-Dissolved			87.1		%		70-130	28-NOV-13
MET-T-MS-WT		Water						
Batch	R2751527							
WG1796735-1 CVS								
Aluminum (Al)-Total			98.0		%		80-120	28-NOV-13
Antimony (Sb)-Total			97.7		%		80-120	28-NOV-13
Arsenic (As)-Total			96.3		%		80-120	28-NOV-13
Barium (Ba)-Total			100.7		%		80-120	28-NOV-13
Beryllium (Be)-Total			95.2		%		80-120	28-NOV-13
Bismuth (Bi)-Total			107.5		%		80-120	28-NOV-13
Boron (B)-Total			94.9		%		80-120	28-NOV-13
Cadmium (Cd)-Total			103.1		%		80-120	28-NOV-13
Calcium (Ca)-Total			96.0		%		80-120	



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 9 of 22

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1796735-1 CVS								
Calcium (Ca)-Total			96.0		%		80-120	28-NOV-13
Chromium (Cr)-Total			99.7		%		80-120	28-NOV-13
Cobalt (Co)-Total			100.7		%		80-120	28-NOV-13
Copper (Cu)-Total			101.0		%		80-120	28-NOV-13
Iron (Fe)-Total			94.5		%		80-120	28-NOV-13
Lead (Pb)-Total			101.1		%		80-120	28-NOV-13
Lithium (Li)-Total			98.8		%		80-120	28-NOV-13
Magnesium (Mg)-Total			95.7		%		80-120	28-NOV-13
Manganese (Mn)-Total			100.5		%		80-120	28-NOV-13
Molybdenum (Mo)-Total			94.2		%		80-120	28-NOV-13
Nickel (Ni)-Total			101.0		%		80-120	28-NOV-13
Phosphorus (P)-Total			98.7		%		80-120	28-NOV-13
Potassium (K)-Total			96.7		%		80-120	28-NOV-13
Selenium (Se)-Total			97.3		%		80-120	28-NOV-13
Silicon (Si)-Total			97.7		%		80-120	28-NOV-13
Silver (Ag)-Total			99.0		%		80-120	28-NOV-13
Sodium (Na)-Total			94.1		%		80-120	28-NOV-13
Strontium (Sr)-Total			105.4		%		80-120	28-NOV-13
Thallium (Tl)-Total			107.3		%		80-120	28-NOV-13
Tin (Sn)-Total			98.9		%		80-120	28-NOV-13
Titanium (Ti)-Total			100.1		%		80-120	28-NOV-13
Tungsten (W)-Total			101.1		%		80-120	28-NOV-13
Uranium (U)-Total			105.8		%		80-120	28-NOV-13
Vanadium (V)-Total			99.5		%		80-120	28-NOV-13
Zinc (Zn)-Total			96.4		%		80-120	28-NOV-13
Zirconium (Zr)-Total			96.4		%		80-120	28-NOV-13
WG1796735-3 CVS								
Aluminum (Al)-Total			100.4		%		80-120	29-NOV-13
Antimony (Sb)-Total			98.4		%		80-120	29-NOV-13
Arsenic (As)-Total			95.7		%		80-120	29-NOV-13
Barium (Ba)-Total			95.0		%		80-120	29-NOV-13
Beryllium (Be)-Total			100.7		%		80-120	29-NOV-13
Bismuth (Bi)-Total			102.9		%		80-120	29-NOV-13
Boron (B)-Total			98.2		%		80-120	29-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 10 of 22

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1796735-3		CVS						
Cadmium (Cd)-Total			98.4		%		80-120	29-NOV-13
Calcium (Ca)-Total			102.9		%		80-120	29-NOV-13
Chromium (Cr)-Total			96.5		%		80-120	29-NOV-13
Cobalt (Co)-Total			98.7		%		80-120	29-NOV-13
Copper (Cu)-Total			98.4		%		80-120	29-NOV-13
Iron (Fe)-Total			101.1		%		80-120	29-NOV-13
Lead (Pb)-Total			102.4		%		80-120	29-NOV-13
Lithium (Li)-Total			106.1		%		80-120	29-NOV-13
Magnesium (Mg)-Total			100.6		%		80-120	29-NOV-13
Manganese (Mn)-Total			98.0		%		80-120	29-NOV-13
Molybdenum (Mo)-Total			92.9		%		80-120	29-NOV-13
Nickel (Ni)-Total			98.7		%		80-120	29-NOV-13
Phosphorus (P)-Total			96.1		%		80-120	29-NOV-13
Potassium (K)-Total			99.7		%		80-120	29-NOV-13
Selenium (Se)-Total			97.4		%		80-120	29-NOV-13
Silicon (Si)-Total			93.2		%		80-120	29-NOV-13
Silver (Ag)-Total			97.7		%		80-120	29-NOV-13
Sodium (Na)-Total			101.1		%		80-120	29-NOV-13
Strontium (Sr)-Total			97.0		%		80-120	29-NOV-13
Thallium (Tl)-Total			102.0		%		80-120	29-NOV-13
Tin (Sn)-Total			98.6		%		80-120	29-NOV-13
Titanium (Ti)-Total			96.0		%		80-120	29-NOV-13
Tungsten (W)-Total			100.2		%		80-120	29-NOV-13
Uranium (U)-Total			103.3		%		80-120	29-NOV-13
Vanadium (V)-Total			98.1		%		80-120	29-NOV-13
Zinc (Zn)-Total			92.7		%		80-120	29-NOV-13
Zirconium (Zr)-Total			93.0		%		80-120	29-NOV-13
WG1796735-5		CVS						
Aluminum (Al)-Total			90.8		%		80-120	30-NOV-13
Antimony (Sb)-Total			91.4		%		80-120	30-NOV-13
Arsenic (As)-Total			90.1		%		80-120	30-NOV-13
Barium (Ba)-Total			92.5		%		80-120	30-NOV-13
Beryllium (Be)-Total			88.4		%		80-120	30-NOV-13
Bismuth (Bi)-Total			92.4		%		80-120	30-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 11 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
MET-T-MS-WT		Water							
Batch	R2751527								
WG1796735-5		CVS							
Boron (B)-Total			87.4		%		80-120	30-NOV-13	
Cadmium (Cd)-Total			95.5		%		80-120	30-NOV-13	
Calcium (Ca)-Total			99.4		%		80-120	30-NOV-13	
Chromium (Cr)-Total			91.8		%		80-120	30-NOV-13	
Cobalt (Co)-Total			91.7		%		80-120	30-NOV-13	
Copper (Cu)-Total			93.6		%		80-120	30-NOV-13	
Iron (Fe)-Total			84.9		%		80-120	30-NOV-13	
Lead (Pb)-Total			92.5		%		80-120	30-NOV-13	
Lithium (Li)-Total			87.1		%		80-120	30-NOV-13	
Magnesium (Mg)-Total			95.8		%		80-120	30-NOV-13	
Manganese (Mn)-Total			93.4		%		80-120	30-NOV-13	
Molybdenum (Mo)-Total			86.4		%		80-120	30-NOV-13	
Nickel (Ni)-Total			95.6		%		80-120	30-NOV-13	
Phosphorus (P)-Total			88.5		%		80-120	30-NOV-13	
Potassium (K)-Total			96.3		%		80-120	30-NOV-13	
Selenium (Se)-Total			80.2		%		80-120	30-NOV-13	
Silver (Ag)-Total			92.1		%		80-120	30-NOV-13	
Sodium (Na)-Total			95.3		%		80-120	30-NOV-13	
Strontium (Sr)-Total			93.4		%		80-120	30-NOV-13	
Thallium (Tl)-Total			93.0		%		80-120	30-NOV-13	
Tin (Sn)-Total			95.7		%		80-120	30-NOV-13	
Titanium (Ti)-Total			91.1		%		80-120	30-NOV-13	
Tungsten (W)-Total			87.7		%		80-120	30-NOV-13	
Uranium (U)-Total			92.9		%		80-120	30-NOV-13	
Vanadium (V)-Total			96.6		%		80-120	30-NOV-13	
Zinc (Zn)-Total			88.0		%		80-120	30-NOV-13	
Zirconium (Zr)-Total			91.3		%		80-120	30-NOV-13	
WG1793851-4		DUP	WG1793851-3						
Aluminum (Al)-Total			0.017	0.021	mg/L	20	20	28-NOV-13	
Antimony (Sb)-Total			<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Arsenic (As)-Total			0.0012	0.0012	mg/L	1.0	20	28-NOV-13	
Barium (Ba)-Total			0.0435	0.0465	mg/L	6.6	20	28-NOV-13	
Beryllium (Be)-Total			<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13

Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 12 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1793851-4	DUP	WG1793851-3						
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Boron (B)-Total		0.034	0.035		mg/L	2.8	20	28-NOV-13
Cadmium (Cd)-Total		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	28-NOV-13
Calcium (Ca)-Total		75.1	76.8		mg/L	2.3	20	28-NOV-13
Chromium (Cr)-Total		0.00104	0.00107		mg/L	2.5	20	28-NOV-13
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Copper (Cu)-Total		0.0042	0.0044		mg/L	4.7	20	28-NOV-13
Iron (Fe)-Total		0.080	0.084		mg/L	4.9	20	28-NOV-13
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Lithium (Li)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	28-NOV-13
Magnesium (Mg)-Total		18.8	19.5		mg/L	4.1	20	28-NOV-13
Manganese (Mn)-Total		0.0193	0.0198		mg/L	2.8	20	28-NOV-13
Molybdenum (Mo)-Total		0.00664	0.00702		mg/L	5.6	20	28-NOV-13
Nickel (Ni)-Total		0.0017	0.0017		mg/L	3.2	20	28-NOV-13
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-NOV-13
Potassium (K)-Total		4.8	4.8		mg/L	0.2	20	28-NOV-13
Selenium (Se)-Total		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	28-NOV-13
Silicon (Si)-Total		2.0	2.0		mg/L	2.9	20	28-NOV-13
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	28-NOV-13
Sodium (Na)-Total		22.7	23.7		mg/L	4.2	20	28-NOV-13
Strontium (Sr)-Total		0.209	0.216		mg/L	3.3	20	28-NOV-13
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	28-NOV-13
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	28-NOV-13
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-NOV-13
Uranium (U)-Total		0.0028	0.0029		mg/L	3.7	20	28-NOV-13
Vanadium (V)-Total		0.00402	0.00410		mg/L	1.9	20	28-NOV-13
Zinc (Zn)-Total		0.0126	0.0146		mg/L	15	20	28-NOV-13
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	28-NOV-13
WG1793853-4	DUP	WG1793853-3						
Aluminum (Al)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-NOV-13
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Arsenic (As)-Total		0.0017	0.0018		mg/L	1.8	20	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 13 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1793853-4	DUP	WG1793853-3						
Barium (Ba)-Total		0.0670	0.0679		mg/L	1.4	20	28-NOV-13
Beryllium (Be)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Boron (B)-Total		0.016	0.016		mg/L	0.8	20	28-NOV-13
Cadmium (Cd)-Total		0.000096	0.000091		mg/L	5.7	20	28-NOV-13
Calcium (Ca)-Total		70.1	69.9		mg/L	0.3	20	28-NOV-13
Chromium (Cr)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Cobalt (Co)-Total		0.00092	0.00093		mg/L	1.2	20	28-NOV-13
Copper (Cu)-Total		0.0149	0.0151		mg/L	1.4	20	28-NOV-13
Iron (Fe)-Total		0.119	0.121		mg/L	1.3	20	28-NOV-13
Lead (Pb)-Total		0.00616	0.00616		mg/L	0.0	20	28-NOV-13
Lithium (Li)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	28-NOV-13
Magnesium (Mg)-Total		26.2	26.1		mg/L	0.3	20	28-NOV-13
Manganese (Mn)-Total		0.0284	0.0286		mg/L	0.4	20	28-NOV-13
Molybdenum (Mo)-Total		0.00247	0.00257		mg/L	3.9	20	28-NOV-13
Nickel (Ni)-Total		0.0053	0.0054		mg/L	2.3	20	28-NOV-13
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-NOV-13
Potassium (K)-Total		1.9	1.9		mg/L	1.6	20	28-NOV-13
Selenium (Se)-Total		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	28-NOV-13
Silicon (Si)-Total		3.7	3.7		mg/L	0.5	20	28-NOV-13
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	28-NOV-13
Sodium (Na)-Total		20.8	20.3		mg/L	2.4	20	28-NOV-13
Strontium (Sr)-Total		0.439	0.453		mg/L	3.2	20	28-NOV-13
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	28-NOV-13
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-NOV-13
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	28-NOV-13
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-NOV-13
Uranium (U)-Total		0.0025	0.0025		mg/L	0.2	20	28-NOV-13
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-NOV-13
Zinc (Zn)-Total		0.528	0.529		mg/L	0.2	20	28-NOV-13
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	28-NOV-13
WG1793851-2	LCS							
Aluminum (Al)-Total			107.2		%		80-120	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 15 of 22

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1793853-2		LCS						
Aluminum (Al)-Total			98.8		%		80-120	28-NOV-13
Antimony (Sb)-Total			93.6		%		80-120	28-NOV-13
Arsenic (As)-Total			97.3		%		80-120	28-NOV-13
Barium (Ba)-Total			99.8		%		80-120	28-NOV-13
Beryllium (Be)-Total			91.5		%		80-120	28-NOV-13
Bismuth (Bi)-Total			95.6		%		80-120	28-NOV-13
Boron (B)-Total			88.4		%		80-120	28-NOV-13
Cadmium (Cd)-Total			99.5		%		80-120	28-NOV-13
Calcium (Ca)-Total			93.8		%		80-120	28-NOV-13
Chromium (Cr)-Total			96.0		%		80-120	28-NOV-13
Cobalt (Co)-Total			97.1		%		80-120	28-NOV-13
Copper (Cu)-Total			97.6		%		80-120	28-NOV-13
Iron (Fe)-Total			95.2		%		80-120	28-NOV-13
Lead (Pb)-Total			95.8		%		80-120	28-NOV-13
Lithium (Li)-Total			95.8		%		80-120	28-NOV-13
Magnesium (Mg)-Total			88.5		%		80-120	28-NOV-13
Manganese (Mn)-Total			97.9		%		80-120	28-NOV-13
Molybdenum (Mo)-Total			93.8		%		80-120	28-NOV-13
Nickel (Ni)-Total			97.3		%		80-120	28-NOV-13
Phosphorus (P)-Total			97.3		%		80-120	28-NOV-13
Potassium (K)-Total			94.6		%		80-120	28-NOV-13
Selenium (Se)-Total			99.1		%		80-120	28-NOV-13
Silicon (Si)-Total			99.0		%		80-120	28-NOV-13
Silver (Ag)-Total			92.8		%		80-120	28-NOV-13
Sodium (Na)-Total			90.7		%		80-120	28-NOV-13
Strontium (Sr)-Total			96.3		%		80-120	28-NOV-13
Thallium (Tl)-Total			97.1		%		80-120	28-NOV-13
Tin (Sn)-Total			90.1		%		80-120	28-NOV-13
Titanium (Ti)-Total			97.7		%		80-120	28-NOV-13
Tungsten (W)-Total			93.2		%		80-120	28-NOV-13
Uranium (U)-Total			93.8		%		80-120	28-NOV-13
Vanadium (V)-Total			97.2		%		80-120	28-NOV-13
Zinc (Zn)-Total			99.2		%		80-120	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 16 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2751527							
WG1793853-2 LCS								
Zirconium (Zr)-Total			91.6		%		80-120	28-NOV-13
WG1793851-1 MB								
Aluminum (Al)-Total			<0.010		mg/L		0.01	28-NOV-13
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Arsenic (As)-Total			<0.0010		mg/L		0.001	28-NOV-13
Barium (Ba)-Total			<0.0020		mg/L		0.002	28-NOV-13
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	28-NOV-13
Boron (B)-Total			<0.010		mg/L		0.01	28-NOV-13
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	28-NOV-13
Calcium (Ca)-Total			<0.50		mg/L		0.5	28-NOV-13
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Copper (Cu)-Total			<0.0010		mg/L		0.001	28-NOV-13
Iron (Fe)-Total			<0.050		mg/L		0.05	28-NOV-13
Lead (Pb)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Lithium (Li)-Total			<0.10		mg/L		0.1	28-NOV-13
Magnesium (Mg)-Total			<0.50		mg/L		0.5	28-NOV-13
Manganese (Mn)-Total			<0.0010		mg/L		0.001	28-NOV-13
Molybdenum (Mo)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Nickel (Ni)-Total			<0.0010		mg/L		0.001	28-NOV-13
Phosphorus (P)-Total			<0.050		mg/L		0.05	28-NOV-13
Potassium (K)-Total			<1.0		mg/L		1	28-NOV-13
Selenium (Se)-Total			<0.00040		mg/L		0.0004	28-NOV-13
Silicon (Si)-Total			<1.0		mg/L		1	28-NOV-13
Silver (Ag)-Total			<0.00010		mg/L		0.0001	28-NOV-13
Sodium (Na)-Total			<0.50		mg/L		0.5	28-NOV-13
Strontium (Sr)-Total			<0.0010		mg/L		0.001	28-NOV-13
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	28-NOV-13
Tin (Sn)-Total			<0.0010		mg/L		0.001	28-NOV-13
Titanium (Ti)-Total			<0.0020		mg/L		0.002	28-NOV-13
Tungsten (W)-Total			<0.010		mg/L		0.01	28-NOV-13
Uranium (U)-Total			<0.0010		mg/L		0.001	28-NOV-13
Vanadium (V)-Total			<0.00050		mg/L		0.0005	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 17 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2751527							
WG1793851-1 MB								
Zinc (Zn)-Total			<0.0030		mg/L		0.003	28-NOV-13
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	28-NOV-13
WG1793853-1 MB								
Aluminum (Al)-Total			<0.010		mg/L		0.01	28-NOV-13
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Arsenic (As)-Total			<0.0010		mg/L		0.001	28-NOV-13
Barium (Ba)-Total			<0.0020		mg/L		0.002	28-NOV-13
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	28-NOV-13
Boron (B)-Total			<0.010		mg/L		0.01	28-NOV-13
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	28-NOV-13
Calcium (Ca)-Total			<0.50		mg/L		0.5	28-NOV-13
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Copper (Cu)-Total			<0.0010		mg/L		0.001	28-NOV-13
Iron (Fe)-Total			<0.050		mg/L		0.05	28-NOV-13
Lead (Pb)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Lithium (Li)-Total			<0.10		mg/L		0.1	28-NOV-13
Magnesium (Mg)-Total			<0.50		mg/L		0.5	28-NOV-13
Manganese (Mn)-Total			<0.0010		mg/L		0.001	28-NOV-13
Molybdenum (Mo)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Nickel (Ni)-Total			<0.0010		mg/L		0.001	28-NOV-13
Phosphorus (P)-Total			<0.050		mg/L		0.05	28-NOV-13
Potassium (K)-Total			<1.0		mg/L		1	28-NOV-13
Selenium (Se)-Total			<0.00040		mg/L		0.0004	28-NOV-13
Silicon (Si)-Total			<1.0		mg/L		1	28-NOV-13
Silver (Ag)-Total			<0.00010		mg/L		0.0001	28-NOV-13
Sodium (Na)-Total			<0.50		mg/L		0.5	28-NOV-13
Strontium (Sr)-Total			<0.0010		mg/L		0.001	28-NOV-13
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	28-NOV-13
Tin (Sn)-Total			<0.0010		mg/L		0.001	28-NOV-13
Titanium (Ti)-Total			<0.0020		mg/L		0.002	28-NOV-13
Tungsten (W)-Total			<0.010		mg/L		0.01	28-NOV-13
Uranium (U)-Total			<0.0010		mg/L		0.001	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 18 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2751527							
WG1793853-1 MB								
Vanadium (V)-Total			<0.00050		mg/L		0.0005	28-NOV-13
Zinc (Zn)-Total			<0.0030		mg/L		0.003	28-NOV-13
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	28-NOV-13
WG1793851-5 MS		WG1793851-3						
Aluminum (Al)-Total			107.2		%		70-130	28-NOV-13
Antimony (Sb)-Total			101.6		%		70-130	28-NOV-13
Arsenic (As)-Total			105.8		%		70-130	28-NOV-13
Barium (Ba)-Total			97.9		%		70-130	28-NOV-13
Beryllium (Be)-Total			96.8		%		70-130	28-NOV-13
Bismuth (Bi)-Total			100.6		%		70-130	28-NOV-13
Boron (B)-Total			94.1		%		70-130	28-NOV-13
Cadmium (Cd)-Total			102.6		%		70-130	28-NOV-13
Calcium (Ca)-Total			N/A	MS-B	%		-	28-NOV-13
Chromium (Cr)-Total			102.5		%		70-130	28-NOV-13
Cobalt (Co)-Total			100.5		%		70-130	28-NOV-13
Copper (Cu)-Total			99.2		%		70-130	28-NOV-13
Iron (Fe)-Total			98.6		%		70-130	28-NOV-13
Lead (Pb)-Total			97.3		%		70-130	28-NOV-13
Lithium (Li)-Total			99.7		%		70-130	28-NOV-13
Magnesium (Mg)-Total			N/A	MS-B	%		-	28-NOV-13
Manganese (Mn)-Total			102.7		%		70-130	28-NOV-13
Molybdenum (Mo)-Total			99.6		%		70-130	28-NOV-13
Nickel (Ni)-Total			99.8		%		70-130	28-NOV-13
Phosphorus (P)-Total			108.4		%		70-130	28-NOV-13
Potassium (K)-Total			N/A	MS-B	%		-	28-NOV-13
Selenium (Se)-Total			101.2		%		70-130	28-NOV-13
Silicon (Si)-Total			98.5		%		70-130	28-NOV-13
Silver (Ag)-Total			97.6		%		70-130	28-NOV-13
Sodium (Na)-Total			N/A	MS-B	%		-	28-NOV-13
Strontium (Sr)-Total			N/A	MS-B	%		-	28-NOV-13
Thallium (Tl)-Total			97.7		%		70-130	28-NOV-13
Tin (Sn)-Total			97.3		%		70-130	28-NOV-13
Titanium (Ti)-Total			105.4		%		70-130	28-NOV-13
Tungsten (W)-Total			98.7		%		70-130	28-NOV-13

Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 19 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1793851-5 MS		WG1793851-3						
Uranium (U)-Total			101.0		%		70-130	28-NOV-13
Vanadium (V)-Total			104.6		%		70-130	28-NOV-13
Zinc (Zn)-Total			103.9		%		70-130	28-NOV-13
Zirconium (Zr)-Total			94.7		%		70-130	28-NOV-13
WG1793853-5 MS		WG1793853-3						
Aluminum (Al)-Total			106.4		%		70-130	28-NOV-13
Antimony (Sb)-Total			100.7		%		70-130	28-NOV-13
Arsenic (As)-Total			102.8		%		70-130	28-NOV-13
Barium (Ba)-Total			97.6		%		70-130	28-NOV-13
Beryllium (Be)-Total			95.5		%		70-130	28-NOV-13
Bismuth (Bi)-Total			102.4		%		70-130	28-NOV-13
Boron (B)-Total			92.5		%		70-130	28-NOV-13
Cadmium (Cd)-Total			99.9		%		70-130	28-NOV-13
Calcium (Ca)-Total			N/A	MS-B	%		-	28-NOV-13
Chromium (Cr)-Total			99.97		%		70-130	28-NOV-13
Cobalt (Co)-Total			96.5		%		70-130	28-NOV-13
Copper (Cu)-Total			95.2		%		70-130	28-NOV-13
Iron (Fe)-Total			95.6		%		70-130	28-NOV-13
Lead (Pb)-Total			101.8		%		70-130	28-NOV-13
Lithium (Li)-Total			96.3		%		70-130	28-NOV-13
Magnesium (Mg)-Total			N/A	MS-B	%		-	28-NOV-13
Manganese (Mn)-Total			98.7		%		70-130	28-NOV-13
Molybdenum (Mo)-Total			99.3		%		70-130	28-NOV-13
Nickel (Ni)-Total			96.4		%		70-130	28-NOV-13
Phosphorus (P)-Total			102.4		%		70-130	28-NOV-13
Potassium (K)-Total			95.5		%		70-130	28-NOV-13
Selenium (Se)-Total			97.3		%		70-130	28-NOV-13
Silicon (Si)-Total			N/A	MS-B	%		-	28-NOV-13
Silver (Ag)-Total			96.7		%		70-130	28-NOV-13
Sodium (Na)-Total			N/A	MS-B	%		-	28-NOV-13
Strontium (Sr)-Total			N/A	MS-B	%		-	28-NOV-13
Thallium (Tl)-Total			104.1		%		70-130	28-NOV-13
Tin (Sn)-Total			94.7		%		70-130	28-NOV-13
Titanium (Ti)-Total			99.3		%		70-130	28-NOV-13



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 20 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2751527							
WG1793853-5 MS		WG1793853-3						
Tungsten (W)-Total			99.4		%		70-130	28-NOV-13
Uranium (U)-Total			104.0		%		70-130	28-NOV-13
Vanadium (V)-Total			101.1		%		70-130	28-NOV-13
Zinc (Zn)-Total			N/A	MS-B	%		-	28-NOV-13
Zirconium (Zr)-Total			97.0		%		70-130	28-NOV-13
NH3-WT		Water						
Batch	R2748081							
WG1794211-2 CVS								
Ammonia, Total (as N)			93.4		%		85-115	24-NOV-13
WG1794211-3 DUP		L1395241-1						
Ammonia, Total (as N)		0.072	0.073		mg/L	0.7	20	24-NOV-13
WG1794211-5 DUP		L1395241-2						
Ammonia, Total (as N)		0.598	0.601		mg/L	0.6	20	24-NOV-13
WG1794211-7 DUP		L1395088-1						
Ammonia, Total (as N)		0.288	0.307		mg/L	6.5	20	25-NOV-13
WG1794211-9 DUP		L1394898-1						
Ammonia, Total (as N)		0.052	0.053		mg/L	1.0	20	24-NOV-13
WG1794211-1 MB								
Ammonia, Total (as N)			<0.050		mg/L		0.05	24-NOV-13
WG1794211-10 MS		L1394898-1						
Ammonia, Total (as N)			91.2		%		75-125	24-NOV-13
WG1794211-4 MS		L1395241-1						
Ammonia, Total (as N)			93.8		%		75-125	24-NOV-13
WG1794211-6 MS		L1395241-2						
Ammonia, Total (as N)			88.5		%		75-125	24-NOV-13
WG1794211-8 MS		L1395088-1						
Ammonia, Total (as N)			94.6		%		75-125	25-NOV-13
P-ORTHO-LOW-WT		Water						
Batch	R2747525							
WG1793570-3 DUP		L1394698-1						
Phosphate-P (ortho)		0.0040	0.0035		mg/L	11	20	22-NOV-13
WG1793570-5 DUP		L1394993-8						
Phosphate-P (ortho)		0.0049	0.0050		mg/L	1.4	20	22-NOV-13
WG1793570-2 LCS								
Phosphate-P (ortho)			102.8		%		80-120	22-NOV-13
WG1793570-1 MB								



Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Page 21 of 22

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-ORTHO-LOW-WT		Water						
Batch	R2747525							
WG1793570-1 MB								
Phosphate-P (ortho)			<0.0030		mg/L		0.003	22-NOV-13
WG1793570-4 MS		L1394698-1						
Phosphate-P (ortho)			94.3		%		70-130	22-NOV-13
WG1793570-6 MS		L1394993-8						
Phosphate-P (ortho)			90.4		%		70-130	22-NOV-13
PH-WT		Water						
Batch	R2748420							
WG1793376-10 DUP		L1394304-1						
pH		8.09	8.10	J	pH units	0.00	0.2	22-NOV-13
WG1793376-11 DUP		L1394898-1						
pH		7.72	7.73	J	pH units	0.01	0.2	22-NOV-13
WG1793376-12 DUP		WG1793376-13						
pH		7.94	7.95	J	pH units	0.01	0.2	22-NOV-13
WG1793376-8 DUP		WG1793376-9						
pH		7.80	7.79	J	pH units	0.01	0.2	22-NOV-13
WG1793376-7 LCS								
pH			6.96		pH units		6.9-7.1	22-NOV-13
SOLIDS-TDS-WT		Water						
Batch	R2748721							
WG1793358-3 DUP		L1394993-8						
Total Dissolved Solids		453	457		mg/L	0.9	20	25-NOV-13
WG1793358-2 LCS								
Total Dissolved Solids			97.1		%		85-115	25-NOV-13
WG1793358-1 MB								
Total Dissolved Solids			<20		mg/L		20	25-NOV-13
TURBIDITY-WT		Water						
Batch	R2747500							
WG1793536-2 CVS								
Turbidity			108.0		%		85-115	22-NOV-13
WG1793536-4 DUP		L1394993-2						
Turbidity		8.53	8.68		NTU	1.7	20	22-NOV-13
WG1793536-1 MB								
Turbidity			<0.10		NTU		0.1	22-NOV-13

Quality Control Report

Workorder: L1394993

Report Date: 02-DEC-13

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 22 of 22

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

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60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8

L1394993-COFC

OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM Page 1 of 1

Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878



Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm on Saturday, Sunday begin the next day.

Specify date required

Service requested

2 gqv TAT (50%)

5 day (regular)

Next day TAT (100%)	
---------------------	--

3-4 day (25%)

Same day TAT (200%)

[illegible]

Notes

1. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. 3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

chain of custody in comments section.



LVM INC.
ATTN: CHRIS HELMER
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Date Received: 15-JAN-14
Report Date: 24-JAN-14 12:47 (MT)
Version: FINAL REV. 2

Client Phone: 519-741-1313

Certificate of Analysis

Lab Work Order #: L1412202
Project P.O. #: 210001
Job Reference: P-0002619-0-01-300-01
C of C Numbers: 146585
Legal Site Desc:

Comments: ADDITIONAL 23-JAN-14 08:30
24-JAN-2014 ADDED DISSOLVED METALS

Nancy Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1412202-1	BH02-13							
Sampled By: J. STROEDER on 15-JAN-14 @ 16:20								
Matrix: WATER								
Physical Tests								
Color, Apparent		15.0		1.0	C.U.		16-JAN-14	R2774308
Conductivity		943		3.0	umhos/cm		20-JAN-14	R2776300
Hardness (as CaCO3)		448		24	mg/L		20-JAN-14	
pH		7.90		0.10	pH units		16-JAN-14	R2776281
Total Dissolved Solids		569		20	mg/L	16-JAN-14	17-JAN-14	R2776141
Turbidity		36.0		0.10	NTU	16-JAN-14	16-JAN-14	R2774470
Anions and Nutrients								
Alkalinity, Total (as CaCO3)		277		10	mg/L		17-JAN-14	R2775002
Ammonia, Total (as N)		<0.050		0.050	mg/L		16-JAN-14	R2774303
Chloride		84.8		2.0	mg/L		16-JAN-14	R2775150
Fluoride		0.13		0.10	mg/L		16-JAN-14	R2775150
Nitrate-N		<0.10		0.10	mg/L		16-JAN-14	R2775150
Nitrite-N		<0.10		0.10	mg/L		16-JAN-14	R2775150
Phosphate-P (ortho)		<0.0030		0.0030	mg/L		16-JAN-14	R2774589
Sulphate		113		2.0	mg/L		16-JAN-14	R2775150
Total Metals								
Aluminum (Al)-Total		6.63	DLM	0.10	mg/L	16-JAN-14	16-JAN-14	R2775197
Antimony (Sb)-Total		<0.0050	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Arsenic (As)-Total		<0.010	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Barium (Ba)-Total		0.266	DLM	0.020	mg/L	16-JAN-14	16-JAN-14	R2775197
Beryllium (Be)-Total		<0.0050	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Bismuth (Bi)-Total		<0.010	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Boron (B)-Total		<0.10	DLM	0.10	mg/L	16-JAN-14	16-JAN-14	R2775197
Cadmium (Cd)-Total		<0.00090	DLM	0.00090	mg/L	16-JAN-14	16-JAN-14	R2775197
Calcium (Ca)-Total		120	DLM	5.0	mg/L	16-JAN-14	16-JAN-14	R2775197
Chromium (Cr)-Total		0.0085	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Cobalt (Co)-Total		<0.0050	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Copper (Cu)-Total		0.011	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Iron (Fe)-Total		6.73	DLM	0.50	mg/L	16-JAN-14	16-JAN-14	R2775197
Lead (Pb)-Total		0.0131	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Lithium (Li)-Total		<1.0	DLM	1.0	mg/L	16-JAN-14	16-JAN-14	R2775197
Magnesium (Mg)-Total		36.2	DLM	5.0	mg/L	16-JAN-14	16-JAN-14	R2775197
Manganese (Mn)-Total		0.259	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Molybdenum (Mo)-Total		0.0079	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Nickel (Ni)-Total		0.015	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Phosphorus (P)-Total		<0.50	DLM	0.50	mg/L	16-JAN-14	16-JAN-14	R2775197
Potassium (K)-Total		<10	DLM	10	mg/L	16-JAN-14	16-JAN-14	R2775197
Selenium (Se)-Total		<0.0040	DLM	0.0040	mg/L	16-JAN-14	16-JAN-14	R2775197
Silicon (Si)-Total		22	DLM	10	mg/L	16-JAN-14	16-JAN-14	R2775197
Silver (Ag)-Total		<0.0010	DLM	0.0010	mg/L	16-JAN-14	16-JAN-14	R2775197
Sodium (Na)-Total		88.4	DLM	5.0	mg/L	16-JAN-14	16-JAN-14	R2775197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1412202-1	BH02-13							
Sampled By: J. STROEDER on 15-JAN-14 @ 16:20								
Matrix: WATER								
Total Metals								
Strontium (Sr)-Total		0.339	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Thallium (Tl)-Total		<0.0030	DLM	0.0030	mg/L	16-JAN-14	16-JAN-14	R2775197
Tin (Sn)-Total		<0.010	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Titanium (Ti)-Total		0.222	DLM	0.020	mg/L	16-JAN-14	16-JAN-14	R2775197
Tungsten (W)-Total		<0.10	DLM	0.10	mg/L	16-JAN-14	16-JAN-14	R2775197
Uranium (U)-Total		<0.010	DLM	0.010	mg/L	16-JAN-14	16-JAN-14	R2775197
Vanadium (V)-Total		0.0105	DLM	0.0050	mg/L	16-JAN-14	16-JAN-14	R2775197
Zinc (Zn)-Total		0.046	DLM	0.030	mg/L	16-JAN-14	20-JAN-14	R2775197
Zirconium (Zr)-Total		<0.040	DLM	0.040	mg/L	16-JAN-14	16-JAN-14	R2775197
Dissolved Metals								
Dissolved Metals Filtration Location		LAB					23-JAN-14	R2778227
Aluminum (Al)-Dissolved		<0.010		0.010	mg/L	23-JAN-14	23-JAN-14	R2779067
Antimony (Sb)-Dissolved		<0.0050		0.0050	mg/L	23-JAN-14	23-JAN-14	R2779067
Arsenic (As)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Barium (Ba)-Dissolved		0.171		0.010	mg/L	23-JAN-14	23-JAN-14	R2779067
Beryllium (Be)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Bismuth (Bi)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Boron (B)-Dissolved		<0.050		0.050	mg/L	23-JAN-14	23-JAN-14	R2779067
Cadmium (Cd)-Dissolved		<0.000090		0.000090	mg/L	23-JAN-14	23-JAN-14	R2779067
Calcium (Ca)-Dissolved		79.5		0.50	mg/L	23-JAN-14	23-JAN-14	R2779067
Chromium (Cr)-Dissolved		<0.00050		0.00050	mg/L	23-JAN-14	23-JAN-14	R2779067
Cobalt (Co)-Dissolved		0.00067		0.00050	mg/L	23-JAN-14	23-JAN-14	R2779067
Copper (Cu)-Dissolved		0.0016		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Iron (Fe)-Dissolved		<0.050		0.050	mg/L	23-JAN-14	23-JAN-14	R2779067
Lead (Pb)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Magnesium (Mg)-Dissolved		25.0		0.50	mg/L	23-JAN-14	23-JAN-14	R2779067
Manganese (Mn)-Dissolved		0.0443		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Molybdenum (Mo)-Dissolved		0.0084		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Nickel (Ni)-Dissolved		0.0066		0.0020	mg/L	23-JAN-14	23-JAN-14	R2779067
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	23-JAN-14	23-JAN-14	R2779067
Potassium (K)-Dissolved		3.0		1.0	mg/L	23-JAN-14	23-JAN-14	R2779067
Selenium (Se)-Dissolved		0.00081		0.00040	mg/L	23-JAN-14	23-JAN-14	R2779067
Silicon (Si)-Dissolved		5.9		1.0	mg/L	23-JAN-14	23-JAN-14	R2779067
Silver (Ag)-Dissolved		<0.00010		0.00010	mg/L	23-JAN-14	23-JAN-14	R2779067
Sodium (Na)-Dissolved		83.0	DLM	5.0	mg/L	23-JAN-14	23-JAN-14	R2779067
Strontium (Sr)-Dissolved		0.306		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Thallium (Tl)-Dissolved		<0.00030		0.00030	mg/L	23-JAN-14	23-JAN-14	R2779067
Tin (Sn)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Titanium (Ti)-Dissolved		<0.0020		0.0020	mg/L	23-JAN-14	23-JAN-14	R2779067
Tungsten (W)-Dissolved		<0.010		0.010	mg/L	23-JAN-14	23-JAN-14	R2779067
Uranium (U)-Dissolved		<0.0050		0.0050	mg/L	23-JAN-14	23-JAN-14	R2779067

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1412202-1	BH02-13							
Sampled By:		J. STROEDER on 15-JAN-14 @ 16:20						
Matrix:		WATER						
Dissolved Metals								
Vanadium (V)-Dissolved		<0.0010		0.0010	mg/L	23-JAN-14	23-JAN-14	R2779067
Zinc (Zn)-Dissolved		<0.0030		0.0030	mg/L	23-JAN-14	23-JAN-14	R2779067
Zirconium (Zr)-Dissolved		<0.0040		0.0040	mg/L	23-JAN-14	23-JAN-14	R2779067

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Sodium (Na)-Dissolved	DLM	L1412202-1
Matrix Spike	Ammonia, Total (as N)	MS-B	L1412202-1
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1412202-1
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1412202-1
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1412202-1
Matrix Spike	Potassium (K)-Dissolved	MS-B	L1412202-1
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1412202-1
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1412202-1
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1412202-1

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-WT	Water	Alkalinity, Total (as CaCO3)	EPA 310.2
ANIONS5-WT	Water	CL,F,NO2,NO3,SO4	EPA 300.0 (IC)
COLOUR-WT	Water	Colour	APHA 2120
Apparent colour is determined by analysis of the decanted sample using the platinum-cobalt colourimetric method.			
EC-WT	Water	Conductivity	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
ETL-HARDNESS-CALC-WT	Water	Hardness (as CaCO3)	APHA 2340 B
MET-D-MS-WT	Water	Dissolved Metals in Water by ICPMS	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-T-MS-WT	Water	Total Metals in Water by ICPMS	EPA 200.8
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
NH3-WT	Water	Ammonia, Total as N	EPA 350.1
Sample is measured colorimetrically. When sample is turbid a distillation step is required, sample is distilled into a solution of boric acid and measured colorimetrically.			
P-ORTHO-LOW-WT	Water	Phosphorus-P (ortho)	APHA 4500-P B E
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C
A well-mixed sample is filtered though glass fibres filter. A known volume of the filtrate is evaporated and dried at 105–5 C overnight and then 180–10 C for 1hr.			
TURBIDITY-WT	Water	Turbidity	APHA 2130 B
Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
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Reference Information

WT ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

146585

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg wwvt - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid weight of sample
- mg/L - unit of concentration based on volume, parts per million.

< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 1 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT Water								
Batch	R2775002							
WG1817928-3 CRM		WT-ALK-CRM						
Alkalinity, Total (as CaCO3)			105.3		%		80-120	17-JAN-14
WG1817928-2 CVS								
Alkalinity, Total (as CaCO3)			106.5		%		85-115	17-JAN-14
WG1817928-4 DUP		L1411505-1						
Alkalinity, Total (as CaCO3)		96	98		mg/L	1.9	20	17-JAN-14
WG1817928-5 DUP		L1412550-4						
Alkalinity, Total (as CaCO3)		14	16		mg/L	11	20	17-JAN-14
WG1817928-1 MB								
Alkalinity, Total (as CaCO3)			<10		mg/L		10	17-JAN-14
ANIONS5-WT Water								
Batch	R2775150							
WG1817464-2 LCS								
Chloride			100.2		%		85-115	16-JAN-14
Fluoride			100.8		%		85-115	16-JAN-14
Nitrite-N			100.6		%		85-115	16-JAN-14
Nitrate-N			99.96		%		85-115	16-JAN-14
Sulphate			99.9		%		85-115	16-JAN-14
WG1817464-3 LCSD		WG1817464-2						
Chloride		100.2	100.2		%	0.0	25	16-JAN-14
Fluoride		100.8	100.7		%	0.1	25	16-JAN-14
Nitrite-N		100.6	100.6		%	0.0	25	16-JAN-14
Nitrate-N		99.96	99.95		%	0.0	25	16-JAN-14
Sulphate		99.9	99.8		%	0.1	25	16-JAN-14
WG1817464-1 MB								
Chloride			<2.0		mg/L		2	16-JAN-14
Fluoride			<0.10		mg/L		0.1	16-JAN-14
Nitrite-N			<0.10		mg/L		0.1	16-JAN-14
Nitrate-N			<0.10		mg/L		0.1	16-JAN-14
Sulphate			<2.0		mg/L		2	16-JAN-14
COLOUR-WT Water								
Batch	R2774308							
WG1817284-3 CRM		WT-COLOUR-CRM						
Color, Apparent			98.4		%		80-120	16-JAN-14
WG1817284-2 CVS								
Color, Apparent			101.0		%		85-115	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 2 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-WT		Water						
Batch	R2774308							
WG1817284-4	DUP	L1411909-4						
Color, Apparent		1.3	1.4		C.U.	5.1	20	16-JAN-14
WG1817284-1	MB							
Color, Apparent			<1.0		C.U.		1	16-JAN-14
EC-WT		Water						
Batch	R2776300							
WG1817717-2	CVS							
Conductivity			100.6		%		90-110	20-JAN-14
WG1817717-3	DUP	L1412299-1						
Conductivity		153	153		umhos/cm	0.1	10	20-JAN-14
WG1817717-1	MB							
Conductivity			<3.0		umhos/cm		3	20-JAN-14
MET-D-MS-WT		Water						
Batch	R2779067							
WG1820893-1	CVS							
Aluminum (Al)-Dissolved			102.4		%		80-120	23-JAN-14
Antimony (Sb)-Dissolved			107.0		%		80-120	23-JAN-14
Arsenic (As)-Dissolved			100.7		%		80-120	23-JAN-14
Barium (Ba)-Dissolved			94.1		%		80-120	23-JAN-14
Beryllium (Be)-Dissolved			105.4		%		80-120	23-JAN-14
Bismuth (Bi)-Dissolved			107.2		%		80-120	23-JAN-14
Boron (B)-Dissolved			111.2		%		80-120	23-JAN-14
Cadmium (Cd)-Dissolved			99.7		%		80-120	23-JAN-14
Calcium (Ca)-Dissolved			104.8		%		80-120	23-JAN-14
Chromium (Cr)-Dissolved			101.8		%		80-120	23-JAN-14
Cobalt (Co)-Dissolved			104.1		%		80-120	23-JAN-14
Copper (Cu)-Dissolved			104.0		%		80-120	23-JAN-14
Iron (Fe)-Dissolved			98.8		%		80-120	23-JAN-14
Lead (Pb)-Dissolved			102.1		%		80-120	23-JAN-14
Magnesium (Mg)-Dissolved			104.1		%		80-120	23-JAN-14
Manganese (Mn)-Dissolved			104.6		%		80-120	23-JAN-14
Molybdenum (Mo)-Dissolved			101.6		%		80-120	23-JAN-14
Nickel (Ni)-Dissolved			105.1		%		80-120	23-JAN-14
Phosphorus (P)-Dissolved			101.9		%		80-120	23-JAN-14
Potassium (K)-Dissolved			100.2		%		80-120	23-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 3 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
MET-D-MS-WT		Water							
Batch	R2779067								
WG1820893-1		CVS							
Selenium (Se)-Dissolved			98.4		%		80-120	23-JAN-14	
Silicon (Si)-Dissolved			94.9		%		80-120	23-JAN-14	
Silver (Ag)-Dissolved			107.2		%		80-120	23-JAN-14	
Sodium (Na)-Dissolved			102.2		%		80-120	23-JAN-14	
Strontium (Sr)-Dissolved			109.4		%		80-120	23-JAN-14	
Thallium (Tl)-Dissolved			104.1		%		80-120	23-JAN-14	
Tin (Sn)-Dissolved			101.8		%		80-120	23-JAN-14	
Titanium (Ti)-Dissolved			104.1		%		80-120	23-JAN-14	
Tungsten (W)-Dissolved			104.8		%		80-120	23-JAN-14	
Uranium (U)-Dissolved			106.4		%		80-120	23-JAN-14	
Vanadium (V)-Dissolved			100.1		%		80-120	23-JAN-14	
Zinc (Zn)-Dissolved			97.1		%		80-120	23-JAN-14	
Zirconium (Zr)-Dissolved			106.5		%		80-120	23-JAN-14	
WG1820830-4		DUP	WG1820830-3						
Aluminum (Al)-Dissolved			<0.010	<0.010	RPD-NA	mg/L	N/A	20	23-JAN-14
Antimony (Sb)-Dissolved			0.00092	0.00089		mg/L	2.9	20	23-JAN-14
Arsenic (As)-Dissolved			<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	23-JAN-14
Barium (Ba)-Dissolved			0.172	0.172		mg/L	0.1	20	23-JAN-14
Beryllium (Be)-Dissolved			<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	23-JAN-14
Bismuth (Bi)-Dissolved			<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	23-JAN-14
Boron (B)-Dissolved			0.036	0.038		mg/L	4.3	20	23-JAN-14
Cadmium (Cd)-Dissolved			<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	23-JAN-14
Calcium (Ca)-Dissolved			81.1	81.6		mg/L	0.7	20	23-JAN-14
Chromium (Cr)-Dissolved			<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	23-JAN-14
Cobalt (Co)-Dissolved			0.00068	0.00068		mg/L	0.2	20	23-JAN-14
Copper (Cu)-Dissolved			0.0016	0.0016		mg/L	0.6	20	23-JAN-14
Iron (Fe)-Dissolved			<0.050	<0.050	RPD-NA	mg/L	N/A	20	23-JAN-14
Lead (Pb)-Dissolved			<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	23-JAN-14
Magnesium (Mg)-Dissolved			25.5	25.7		mg/L	1.1	20	23-JAN-14
Manganese (Mn)-Dissolved			0.0451	0.0452		mg/L	0.3	20	23-JAN-14
Molybdenum (Mo)-Dissolved			0.00803	0.00853		mg/L	6.1	20	23-JAN-14
Nickel (Ni)-Dissolved			0.0068	0.0066		mg/L	1.7	20	23-JAN-14
Phosphorus (P)-Dissolved			<0.050	<0.050	RPD-NA	mg/L	N/A	20	23-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 4 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2779067							
WG1820830-4	DUP	WG1820830-3						
Potassium (K)-Dissolved		3.0	3.0		mg/L	0.6	20	23-JAN-14
Selenium (Se)-Dissolved		0.00083	0.00085		mg/L	1.9	20	23-JAN-14
Silicon (Si)-Dissolved		5.9	5.9		mg/L	0.8	20	23-JAN-14
Silver (Ag)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	23-JAN-14
Sodium (Na)-Dissolved		84.4	83.9		mg/L	0.6	20	23-JAN-14
Strontium (Sr)-Dissolved		0.304	0.313		mg/L	3.0	20	23-JAN-14
Thallium (Tl)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	23-JAN-14
Tin (Sn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	23-JAN-14
Titanium (Ti)-Dissolved		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	23-JAN-14
Tungsten (W)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	23-JAN-14
Uranium (U)-Dissolved		0.0043	0.0043		mg/L	1.9	20	23-JAN-14
Vanadium (V)-Dissolved		0.00095	0.00093		mg/L	2.7	20	23-JAN-14
Zinc (Zn)-Dissolved		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	23-JAN-14
Zirconium (Zr)-Dissolved		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	23-JAN-14
WG1820830-2		LCS						
Aluminum (Al)-Dissolved			101.2		%		80-120	23-JAN-14
Antimony (Sb)-Dissolved			105.3		%		80-120	23-JAN-14
Arsenic (As)-Dissolved			98.0		%		80-120	23-JAN-14
Barium (Ba)-Dissolved			92.2		%		80-120	23-JAN-14
Beryllium (Be)-Dissolved			100.8		%		80-120	23-JAN-14
Bismuth (Bi)-Dissolved			101.2		%		80-120	23-JAN-14
Boron (B)-Dissolved			101.5		%		80-120	23-JAN-14
Cadmium (Cd)-Dissolved			93.5		%		80-120	23-JAN-14
Calcium (Ca)-Dissolved			103.9		%		80-120	23-JAN-14
Chromium (Cr)-Dissolved			98.1		%		80-120	23-JAN-14
Cobalt (Co)-Dissolved			98.9		%		80-120	23-JAN-14
Copper (Cu)-Dissolved			99.5		%		80-120	23-JAN-14
Iron (Fe)-Dissolved			98.5		%		80-120	23-JAN-14
Lead (Pb)-Dissolved			100.1		%		80-120	23-JAN-14
Magnesium (Mg)-Dissolved			95.8		%		80-120	23-JAN-14
Manganese (Mn)-Dissolved			99.3		%		80-120	23-JAN-14
Molybdenum (Mo)-Dissolved			97.3		%		80-120	23-JAN-14
Nickel (Ni)-Dissolved			98.3		%		80-120	23-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 5 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch R2779067								
WG1820830-2 LCS								
Phosphorus (P)-Dissolved			101.6		%		80-120	23-JAN-14
Potassium (K)-Dissolved			102.8		%		80-120	23-JAN-14
Selenium (Se)-Dissolved			96.8		%		80-120	23-JAN-14
Silicon (Si)-Dissolved			94.6		%		80-120	23-JAN-14
Silver (Ag)-Dissolved			105.8		%		80-120	23-JAN-14
Sodium (Na)-Dissolved			98.9		%		80-120	23-JAN-14
Strontium (Sr)-Dissolved			99.8		%		80-120	23-JAN-14
Thallium (Tl)-Dissolved			103.1		%		80-120	23-JAN-14
Tin (Sn)-Dissolved			95.1		%		80-120	23-JAN-14
Titanium (Ti)-Dissolved			98.7		%		80-120	23-JAN-14
Tungsten (W)-Dissolved			103.6		%		80-120	23-JAN-14
Uranium (U)-Dissolved			101.8		%		80-120	23-JAN-14
Vanadium (V)-Dissolved			98.2		%		80-120	23-JAN-14
Zinc (Zn)-Dissolved			98.1		%		80-120	23-JAN-14
Zirconium (Zr)-Dissolved			96.3		%		80-120	23-JAN-14
WG1820830-1 MB								
Aluminum (Al)-Dissolved			<0.010		mg/L		0.01	23-JAN-14
Antimony (Sb)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Arsenic (As)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Barium (Ba)-Dissolved			<0.0020		mg/L		0.002	23-JAN-14
Beryllium (Be)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Bismuth (Bi)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Boron (B)-Dissolved			<0.010		mg/L		0.01	23-JAN-14
Cadmium (Cd)-Dissolved			<0.000090		mg/L		0.00009	23-JAN-14
Calcium (Ca)-Dissolved			<0.50		mg/L		0.5	23-JAN-14
Chromium (Cr)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Cobalt (Co)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Copper (Cu)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Iron (Fe)-Dissolved			<0.050		mg/L		0.05	23-JAN-14
Lead (Pb)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Magnesium (Mg)-Dissolved			<0.50		mg/L		0.5	23-JAN-14
Manganese (Mn)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Molybdenum (Mo)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Nickel (Ni)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 6 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2779067							
WG1820830-1 MB								
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	23-JAN-14
Potassium (K)-Dissolved			<1.0		mg/L		1	23-JAN-14
Selenium (Se)-Dissolved			<0.00040		mg/L		0.0004	23-JAN-14
Silicon (Si)-Dissolved			<1.0		mg/L		1	23-JAN-14
Silver (Ag)-Dissolved			<0.00010		mg/L		0.0001	23-JAN-14
Sodium (Na)-Dissolved			<0.50		mg/L		0.5	23-JAN-14
Strontium (Sr)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Thallium (Tl)-Dissolved			<0.00030		mg/L		0.0003	23-JAN-14
Tin (Sn)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Titanium (Ti)-Dissolved			<0.0020		mg/L		0.002	23-JAN-14
Tungsten (W)-Dissolved			<0.010		mg/L		0.01	23-JAN-14
Uranium (U)-Dissolved			<0.0010		mg/L		0.001	23-JAN-14
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	23-JAN-14
Zinc (Zn)-Dissolved			<0.0030		mg/L		0.003	23-JAN-14
Zirconium (Zr)-Dissolved			<0.0040		mg/L		0.004	23-JAN-14
WG1820830-5 MS		WG1820830-3						
Aluminum (Al)-Dissolved			100.7		%		70-130	23-JAN-14
Antimony (Sb)-Dissolved			99.6		%		70-130	23-JAN-14
Arsenic (As)-Dissolved			102.6		%		70-130	23-JAN-14
Barium (Ba)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Beryllium (Be)-Dissolved			99.2		%		70-130	23-JAN-14
Bismuth (Bi)-Dissolved			74.2		%		70-130	23-JAN-14
Boron (B)-Dissolved			94.3		%		70-130	23-JAN-14
Cadmium (Cd)-Dissolved			92.4		%		70-130	23-JAN-14
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Chromium (Cr)-Dissolved			95.4		%		70-130	23-JAN-14
Cobalt (Co)-Dissolved			90.6		%		70-130	23-JAN-14
Copper (Cu)-Dissolved			88.9		%		70-130	23-JAN-14
Iron (Fe)-Dissolved			95.6		%		70-130	23-JAN-14
Lead (Pb)-Dissolved			93.9		%		70-130	23-JAN-14
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Manganese (Mn)-Dissolved			80.9		%		70-130	23-JAN-14
Molybdenum (Mo)-Dissolved			93.6		%		70-130	23-JAN-14
Nickel (Ni)-Dissolved			88.0		%		70-130	23-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 7 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2779067							
WG1820830-5	MS	WG1820830-3						
Phosphorus (P)-Dissolved			103.4		%		70-130	23-JAN-14
Potassium (K)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Selenium (Se)-Dissolved			104.7		%		70-130	23-JAN-14
Silicon (Si)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Silver (Ag)-Dissolved			93.8		%		70-130	23-JAN-14
Sodium (Na)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	23-JAN-14
Thallium (Tl)-Dissolved			95.8		%		70-130	23-JAN-14
Tin (Sn)-Dissolved			97.9		%		70-130	23-JAN-14
Titanium (Ti)-Dissolved			98.4		%		70-130	23-JAN-14
Tungsten (W)-Dissolved			99.6		%		70-130	23-JAN-14
Uranium (U)-Dissolved			100.1		%		70-130	23-JAN-14
Vanadium (V)-Dissolved			97.6		%		70-130	23-JAN-14
Zinc (Zn)-Dissolved			96.3		%		70-130	23-JAN-14
Zirconium (Zr)-Dissolved			95.6		%		70-130	23-JAN-14
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817613-1	CVS							
Aluminum (Al)-Total			104.3		%		80-120	16-JAN-14
Antimony (Sb)-Total			100.0		%		80-120	16-JAN-14
Arsenic (As)-Total			102.5		%		80-120	16-JAN-14
Barium (Ba)-Total			102.0		%		80-120	16-JAN-14
Beryllium (Be)-Total			100.5		%		80-120	16-JAN-14
Bismuth (Bi)-Total			98.8		%		80-120	16-JAN-14
Boron (B)-Total			103.7		%		80-120	16-JAN-14
Cadmium (Cd)-Total			108.8		%		80-120	16-JAN-14
Calcium (Ca)-Total			106.1		%		80-120	16-JAN-14
Chromium (Cr)-Total			98.3		%		80-120	16-JAN-14
Cobalt (Co)-Total			101.6		%		80-120	16-JAN-14
Copper (Cu)-Total			101.9		%		80-120	16-JAN-14
Iron (Fe)-Total			100.0		%		80-120	16-JAN-14
Lead (Pb)-Total			98.6		%		80-120	16-JAN-14
Lithium (Li)-Total			100.6		%		80-120	16-JAN-14
Magnesium (Mg)-Total			105.2		%		80-120	



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 8 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817613-1	CVS							
Magnesium (Mg)-Total			105.2		%		80-120	16-JAN-14
Manganese (Mn)-Total			102.9		%		80-120	16-JAN-14
Molybdenum (Mo)-Total			92.3		%		80-120	16-JAN-14
Nickel (Ni)-Total			103.3		%		80-120	16-JAN-14
Phosphorus (P)-Total			102.5		%		80-120	16-JAN-14
Potassium (K)-Total			100.1		%		80-120	16-JAN-14
Selenium (Se)-Total			111.6		%		80-120	16-JAN-14
Silicon (Si)-Total			94.1		%		80-120	16-JAN-14
Silver (Ag)-Total			102.4		%		80-120	16-JAN-14
Sodium (Na)-Total			105.3		%		80-120	16-JAN-14
Strontium (Sr)-Total			99.3		%		80-120	16-JAN-14
Thallium (Tl)-Total			99.7		%		80-120	16-JAN-14
Tin (Sn)-Total			99.4		%		80-120	16-JAN-14
Titanium (Ti)-Total			102.3		%		80-120	16-JAN-14
Tungsten (W)-Total			98.1		%		80-120	16-JAN-14
Uranium (U)-Total			96.6		%		80-120	16-JAN-14
Vanadium (V)-Total			99.8		%		80-120	16-JAN-14
Zirconium (Zr)-Total			96.6		%		80-120	16-JAN-14
WG1817613-3	CVS							
Aluminum (Al)-Total			100.7		%		80-120	17-JAN-14
Antimony (Sb)-Total			102.7		%		80-120	17-JAN-14
Arsenic (As)-Total			101.5		%		80-120	17-JAN-14
Barium (Ba)-Total			101.5		%		80-120	17-JAN-14
Beryllium (Be)-Total			102.4		%		80-120	17-JAN-14
Bismuth (Bi)-Total			105.6		%		80-120	17-JAN-14
Boron (B)-Total			110.7		%		80-120	17-JAN-14
Cadmium (Cd)-Total			105.9		%		80-120	17-JAN-14
Calcium (Ca)-Total			104.3		%		80-120	17-JAN-14
Chromium (Cr)-Total			99.6		%		80-120	17-JAN-14
Cobalt (Co)-Total			101.6		%		80-120	17-JAN-14
Copper (Cu)-Total			102.9		%		80-120	17-JAN-14
Iron (Fe)-Total			101.1		%		80-120	17-JAN-14
Lead (Pb)-Total			104.4		%		80-120	17-JAN-14
Lithium (Li)-Total			108.0		%		80-120	17-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 9 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2775197							
WG1817613-3 CVS								
Magnesium (Mg)-Total			101.6		%		80-120	17-JAN-14
Manganese (Mn)-Total			103.2		%		80-120	17-JAN-14
Molybdenum (Mo)-Total			97.0		%		80-120	17-JAN-14
Nickel (Ni)-Total			104.0		%		80-120	17-JAN-14
Phosphorus (P)-Total			100.5		%		80-120	17-JAN-14
Potassium (K)-Total			105.3		%		80-120	17-JAN-14
Selenium (Se)-Total			109.7		%		80-120	17-JAN-14
Silicon (Si)-Total			99.3		%		80-120	17-JAN-14
Silver (Ag)-Total			105.4		%		80-120	17-JAN-14
Sodium (Na)-Total			102.4		%		80-120	17-JAN-14
Strontium (Sr)-Total			108.7		%		80-120	17-JAN-14
Thallium (Tl)-Total			103.6		%		80-120	17-JAN-14
Tin (Sn)-Total			103.1		%		80-120	17-JAN-14
Titanium (Ti)-Total			96.6		%		80-120	17-JAN-14
Tungsten (W)-Total			101.5		%		80-120	17-JAN-14
Uranium (U)-Total			103.0		%		80-120	17-JAN-14
Vanadium (V)-Total			101.2		%		80-120	17-JAN-14
Zinc (Zn)-Total			103.9		%		80-120	17-JAN-14
Zirconium (Zr)-Total			106.1		%		80-120	17-JAN-14
WG1817613-4 CVS								
Aluminum (Al)-Total			105.5		%		80-120	20-JAN-14
Antimony (Sb)-Total			113.1		%		80-120	20-JAN-14
Arsenic (As)-Total			105.9		%		80-120	20-JAN-14
Barium (Ba)-Total			105.8		%		80-120	20-JAN-14
Beryllium (Be)-Total			104.8		%		80-120	20-JAN-14
Bismuth (Bi)-Total			95.2		%		80-120	20-JAN-14
Boron (B)-Total			104.9		%		80-120	20-JAN-14
Cadmium (Cd)-Total			111.8		%		80-120	20-JAN-14
Calcium (Ca)-Total			105.3		%		80-120	20-JAN-14
Chromium (Cr)-Total			101.7		%		80-120	20-JAN-14
Cobalt (Co)-Total			101.5		%		80-120	20-JAN-14
Copper (Cu)-Total			106.5		%		80-120	20-JAN-14
Iron (Fe)-Total			101.3		%		80-120	20-JAN-14
Lead (Pb)-Total			102.4		%		80-120	20-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 10 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817613-4	CVS							
Lithium (Li)-Total			107.3		%		80-120	20-JAN-14
Magnesium (Mg)-Total			110.6		%		80-120	20-JAN-14
Manganese (Mn)-Total			105.8		%		80-120	20-JAN-14
Molybdenum (Mo)-Total			93.9		%		80-120	20-JAN-14
Nickel (Ni)-Total			107.4		%		80-120	20-JAN-14
Phosphorus (P)-Total			107.5		%		80-120	20-JAN-14
Potassium (K)-Total			101.7		%		80-120	20-JAN-14
Selenium (Se)-Total			116.3		%		80-120	20-JAN-14
Silicon (Si)-Total			100.7		%		80-120	20-JAN-14
Silver (Ag)-Total			109.4		%		80-120	20-JAN-14
Sodium (Na)-Total			104.4		%		80-120	20-JAN-14
Strontium (Sr)-Total			107.3		%		80-120	20-JAN-14
Thallium (Tl)-Total			103.7		%		80-120	20-JAN-14
Tin (Sn)-Total			109.0		%		80-120	20-JAN-14
Titanium (Ti)-Total			104.0		%		80-120	20-JAN-14
Tungsten (W)-Total			98.8		%		80-120	20-JAN-14
Uranium (U)-Total			102.4		%		80-120	20-JAN-14
Vanadium (V)-Total			106.2		%		80-120	20-JAN-14
Zinc (Zn)-Total			103.0		%		80-120	20-JAN-14
Zirconium (Zr)-Total			102.5		%		80-120	20-JAN-14
WG1817292-4	DUP	WG1817292-3						
Aluminum (Al)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	16-JAN-14
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Barium (Ba)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-JAN-14
Beryllium (Be)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Boron (B)-Total		0.014	0.014		mg/L	0.3	20	16-JAN-14
Cadmium (Cd)-Total		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	16-JAN-14
Calcium (Ca)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	16-JAN-14
Chromium (Cr)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Copper (Cu)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 11 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817292-4	DUP	WG1817292-3						
Iron (Fe)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JAN-14
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Lithium (Li)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	16-JAN-14
Magnesium (Mg)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	16-JAN-14
Manganese (Mn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Molybdenum (Mo)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Nickel (Ni)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JAN-14
Potassium (K)-Total		<1.0	<1.0	RPD-NA	mg/L	N/A	20	16-JAN-14
Selenium (Se)-Total		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	16-JAN-14
Silicon (Si)-Total		<1.0	<1.0	RPD-NA	mg/L	N/A	20	16-JAN-14
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-JAN-14
Sodium (Na)-Total		2.99	3.02		mg/L	1.2	20	16-JAN-14
Strontium (Sr)-Total		0.0023	0.0024		mg/L	0.4	20	16-JAN-14
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	16-JAN-14
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-JAN-14
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	16-JAN-14
Uranium (U)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-JAN-14
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	16-JAN-14
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	17-JAN-14
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	16-JAN-14
WG1817292-2	LCS							
Aluminum (Al)-Total			97.1		%		80-120	16-JAN-14
Antimony (Sb)-Total			96.9		%		80-120	16-JAN-14
Arsenic (As)-Total			96.7		%		80-120	16-JAN-14
Barium (Ba)-Total			98.4		%		80-120	16-JAN-14
Beryllium (Be)-Total			93.1		%		80-120	16-JAN-14
Bismuth (Bi)-Total			98.0		%		80-120	16-JAN-14
Boron (B)-Total			96.1		%		80-120	16-JAN-14
Cadmium (Cd)-Total			97.7		%		80-120	16-JAN-14
Calcium (Ca)-Total			105.9		%		80-120	16-JAN-14
Chromium (Cr)-Total			97.0		%		80-120	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 12 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2775197							
WG1817292-2 LCS								
Cobalt (Co)-Total			98.6		%		80-120	16-JAN-14
Copper (Cu)-Total			98.3		%		80-120	16-JAN-14
Iron (Fe)-Total			102.0		%		80-120	16-JAN-14
Lead (Pb)-Total			96.3		%		80-120	16-JAN-14
Lithium (Li)-Total			97.0		%		80-120	16-JAN-14
Magnesium (Mg)-Total			97.3		%		80-120	16-JAN-14
Manganese (Mn)-Total			96.4		%		80-120	16-JAN-14
Molybdenum (Mo)-Total			103.4		%		80-120	16-JAN-14
Nickel (Ni)-Total			98.9		%		80-120	16-JAN-14
Phosphorus (P)-Total			99.7		%		80-120	16-JAN-14
Potassium (K)-Total			96.2		%		80-120	16-JAN-14
Selenium (Se)-Total			101.6		%		80-120	16-JAN-14
Silicon (Si)-Total			95.0		%		80-120	16-JAN-14
Silver (Ag)-Total			98.0		%		80-120	16-JAN-14
Sodium (Na)-Total			100.2		%		80-120	16-JAN-14
Strontium (Sr)-Total			99.9		%		80-120	16-JAN-14
Thallium (Tl)-Total			97.8		%		80-120	16-JAN-14
Tin (Sn)-Total			96.0		%		80-120	16-JAN-14
Titanium (Ti)-Total			97.9		%		80-120	16-JAN-14
Tungsten (W)-Total			95.6		%		80-120	16-JAN-14
Uranium (U)-Total			95.6		%		80-120	16-JAN-14
Vanadium (V)-Total			98.0		%		80-120	16-JAN-14
Zinc (Zn)-Total			101.8		%		80-120	17-JAN-14
Zirconium (Zr)-Total			96.7		%		80-120	16-JAN-14
WG1817292-1 MB								
Aluminum (Al)-Total			<0.010		mg/L		0.01	16-JAN-14
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Arsenic (As)-Total			<0.0010		mg/L		0.001	16-JAN-14
Barium (Ba)-Total			<0.0020		mg/L		0.002	16-JAN-14
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	16-JAN-14
Boron (B)-Total			<0.010		mg/L		0.01	16-JAN-14
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	16-JAN-14
Calcium (Ca)-Total			<0.50		mg/L		0.5	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 13 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817292-1 MB								
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	16-JAN-14
Iron (Fe)-Total			<0.050		mg/L		0.05	16-JAN-14
Lead (Pb)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Lithium (Li)-Total			<0.10		mg/L		0.1	16-JAN-14
Magnesium (Mg)-Total			<0.50		mg/L		0.5	16-JAN-14
Manganese (Mn)-Total			<0.0010		mg/L		0.001	16-JAN-14
Molybdenum (Mo)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Nickel (Ni)-Total			<0.0010		mg/L		0.001	16-JAN-14
Phosphorus (P)-Total			<0.050		mg/L		0.05	16-JAN-14
Potassium (K)-Total			<1.0		mg/L		1	16-JAN-14
Selenium (Se)-Total			<0.00040		mg/L		0.0004	16-JAN-14
Silicon (Si)-Total			<1.0		mg/L		1	16-JAN-14
Silver (Ag)-Total			<0.00010		mg/L		0.0001	16-JAN-14
Sodium (Na)-Total			<0.50		mg/L		0.5	16-JAN-14
Strontium (Sr)-Total			<0.0010		mg/L		0.001	16-JAN-14
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	16-JAN-14
Tin (Sn)-Total			<0.0010		mg/L		0.001	16-JAN-14
Titanium (Ti)-Total			<0.0020		mg/L		0.002	16-JAN-14
Tungsten (W)-Total			<0.010		mg/L		0.01	16-JAN-14
Uranium (U)-Total			<0.0010		mg/L		0.001	16-JAN-14
Vanadium (V)-Total			<0.00050		mg/L		0.0005	16-JAN-14
Zinc (Zn)-Total			<0.0030		mg/L		0.003	17-JAN-14
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	16-JAN-14
WG1817292-5 MS		WG1817292-3						
Aluminum (Al)-Total			102.1		%		70-130	16-JAN-14
Antimony (Sb)-Total			95.1		%		70-130	16-JAN-14
Arsenic (As)-Total			99.5		%		70-130	16-JAN-14
Barium (Ba)-Total			103.4		%		70-130	16-JAN-14
Beryllium (Be)-Total			90.6		%		70-130	16-JAN-14
Bismuth (Bi)-Total			96.4		%		70-130	16-JAN-14
Boron (B)-Total			91.4		%		70-130	16-JAN-14
Cadmium (Cd)-Total			100.7		%		70-130	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 14 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2775197							
WG1817292-5 MS		WG1817292-3						
Calcium (Ca)-Total			111.5		%		70-130	16-JAN-14
Chromium (Cr)-Total			99.0		%		70-130	16-JAN-14
Cobalt (Co)-Total			102.3		%		70-130	16-JAN-14
Copper (Cu)-Total			99.9		%		70-130	16-JAN-14
Iron (Fe)-Total			99.7		%		70-130	16-JAN-14
Lead (Pb)-Total			93.5		%		70-130	16-JAN-14
Lithium (Li)-Total			93.2		%		70-130	16-JAN-14
Magnesium (Mg)-Total			101.9		%		70-130	16-JAN-14
Manganese (Mn)-Total			98.4		%		70-130	16-JAN-14
Molybdenum (Mo)-Total			102.3		%		70-130	16-JAN-14
Nickel (Ni)-Total			100.4		%		70-130	16-JAN-14
Phosphorus (P)-Total			99.5		%		70-130	16-JAN-14
Potassium (K)-Total			101.3		%		70-130	16-JAN-14
Selenium (Se)-Total			99.5		%		70-130	16-JAN-14
Silicon (Si)-Total			96.9		%		70-130	16-JAN-14
Silver (Ag)-Total			91.8		%		70-130	16-JAN-14
Sodium (Na)-Total			101.2		%		70-130	16-JAN-14
Strontium (Sr)-Total			98.3		%		70-130	16-JAN-14
Thallium (Tl)-Total			94.6		%		70-130	16-JAN-14
Tin (Sn)-Total			91.2		%		70-130	16-JAN-14
Titanium (Ti)-Total			99.3		%		70-130	16-JAN-14
Tungsten (W)-Total			95.4		%		70-130	16-JAN-14
Uranium (U)-Total			94.6		%		70-130	16-JAN-14
Vanadium (V)-Total			100.2		%		70-130	16-JAN-14
Zinc (Zn)-Total			102.9		%		70-130	17-JAN-14
Zirconium (Zr)-Total			94.8		%		70-130	16-JAN-14
NH3-WT		Water						
Batch	R2774303							
WG1817268-2 CVS								
Ammonia, Total (as N)			98.1		%		85-115	16-JAN-14
WG1817268-3 DUP		L1411630-1						
Ammonia, Total (as N)		13.5	13.5		mg/L	0.1	20	16-JAN-14
WG1817268-5 DUP		L1411630-2						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JAN-14



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 15 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-WT		Water						
Batch	R2774303							
WG1817268-7	DUP	L1411905-7						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JAN-14
WG1817268-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	16-JAN-14
WG1817268-4	MS	L1411630-1						
Ammonia, Total (as N)			N/A	MS-B	%		-	16-JAN-14
WG1817268-6	MS	L1411630-2						
Ammonia, Total (as N)			99.9		%		75-125	16-JAN-14
WG1817268-8	MS	L1411905-7						
Ammonia, Total (as N)			99.0		%		75-125	16-JAN-14
P-ORTHO-LOW-WT		Water						
Batch	R2774589							
WG1817323-3	DUP	L1411297-1						
Phosphate-P (ortho)		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	16-JAN-14
WG1817323-5	DUP	L1411743-3						
Phosphate-P (ortho)		0.0096	0.0081		mg/L	18	20	16-JAN-14
WG1817323-2	LCS							
Phosphate-P (ortho)			93.7		%		80-120	16-JAN-14
WG1817323-1	MB							
Phosphate-P (ortho)			<0.0030		mg/L		0.003	16-JAN-14
WG1817323-4	MS	L1411297-1						
Phosphate-P (ortho)			106.2		%		70-130	16-JAN-14
WG1817323-6	MS	L1411743-3						
Phosphate-P (ortho)			105.4		%		70-130	16-JAN-14
PH-WT		Water						
Batch	R2776281							
WG1817709-2	DUP	L1412299-1						
pH		7.28	7.26	J	pH units	0.02	0.2	16-JAN-14
WG1817709-4	DUP	WG1817709-3						
pH		7.59	7.57	J	pH units	0.01	0.2	16-JAN-14
WG1817709-1	LCS							
pH			6.94		pH units		6.9-7.1	16-JAN-14
SOLIDS-TDS-WT		Water						
Batch	R2776141							
WG1817643-3	DUP	L1412186-2						
Total Dissolved Solids		2540	2540		mg/L	0.1	20	17-JAN-14
WG1817643-2	LCS							



Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Page 16 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TDS-WT	Water							
Batch	R2776141							
WG1817643-2	LCS							
Total Dissolved Solids			100.5		%		85-115	17-JAN-14
WG1817643-1	MB							
Total Dissolved Solids			<20		mg/L		20	17-JAN-14
TURBIDITY-WT	Water							
Batch	R2774470							
WG1817347-4	CVS							
Turbidity			102.0		%		85-115	16-JAN-14
WG1817347-2	DUP	L1412182-3						
Turbidity		0.11	0.10		NTU	9.5	20	16-JAN-14
WG1817347-1	MB							
Turbidity			<0.10		NTU		0.1	16-JAN-14

Quality Control Report

Workorder: L1412202

Report Date: 24-JAN-14

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 17 of 17

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Toll Free: 1-800-668-9878



CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM Page 1 of 1

146585
C of C # 00000

[illegible]

Notes

i. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. 3. Any known or suspected matrix related to a sample must be noted on the chain of custody document to section. Please contact the lab to confirm TATs.



LVM INC.
ATTN: CHRIS HELMER
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Date Received: 24-JAN-14
Report Date: 30-JAN-14 14:05 (MT)
Version: FINAL

Client Phone: 519-741-1313

Certificate of Analysis

Lab Work Order #: L1415234
Project P.O. #: NOT SUBMITTED
Job Reference: P-0002619-0-01-302
C of C Numbers: 146621
Legal Site Desc:

Nancy Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
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CRITERIA REPORT

L1415234 CONTD....

Page 2 of 7

30-JAN-14 14:08:16

P-0002619-0-01-302

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1415234-1 724 SCHNARR ST								
Sampled By: J. STROEDER on 24-JAN-14 @ 10:00								
Matrix: WATER					STANDARDS	GUIDELINES		
General Water Quality Package								
Ammonia, Total (as N)	<0.050		0.050	mg/L			27-JAN-14	R2779855
Anion Scan (IC)								
Chloride	26.5		2.0	mg/L		250	28-JAN-14	R2782087
Bromide	<0.10		0.10	mg/L			28-JAN-14	R2782087
Fluoride	<0.10		0.10	mg/L	1.5		28-JAN-14	R2782087
Nitrite-N	<0.10		0.10	mg/L	1		28-JAN-14	R2782087
Nitrate-N	0.95		0.10	mg/L	10		28-JAN-14	R2782087
Sulphate	8.5		2.0	mg/L		500	28-JAN-14	R2782087
Silica	13.5		2.1	mg/L			28-JAN-14	
Color, Apparent	<1.0		1.0	C.U.		5	24-JAN-14	R2779400
Conductivity	567		3.0	umhos/cm			28-JAN-14	R2781219
Detailed Ion Balance Calculation								
Ion Balance	113			%			29-JAN-14	
Cation - Anion Balance	6.2			%			29-JAN-14	
Computed Conductivity	500			uS/cm			29-JAN-14	
Conductivity % Difference	-12.7			%			29-JAN-14	
TDS (Calculated)	301			mg/L			29-JAN-14	
Anion Sum	5.23			me/L			29-JAN-14	
Cation Sum	5.93			me/L			29-JAN-14	
Saturation pH	7.13			pH			29-JAN-14	
Langelier Index	0.7			No Unit			29-JAN-14	
Hardness (as CaCO3)	272			mg/L	**	80-100	29-JAN-14	
E. Coli	0		0	CFU/100mL	0		25-JAN-14	R2779747
Phosphate-P (ortho)	0.0050		0.0030	mg/L			27-JAN-14	R2780581
Total Coliform Background	560		0	CFU/100mL			25-JAN-14	R2779746
Redox Potential	226	PEHT	-1000	mV			30-JAN-14	R2782817
Sodium Adsorption Ratio	0.3		0.030	SAR			28-JAN-14	
Total Coliforms	1		0	CFU/100mL**	0		25-JAN-14	R2779746
Total Dissolved Solids	313		20	mg/L		500	29-JAN-14	R2782182
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	<0.010		0.010	mg/L		0.1	27-JAN-14	R2780345
Antimony (Sb)-Total	<0.0050		0.0050	mg/L	0.006		27-JAN-14	R2780345
Arsenic (As)-Total	<0.0010		0.0010	mg/L	0.025		27-JAN-14	R2780345
Barium (Ba)-Total	0.016		0.010	mg/L	1		27-JAN-14	R2780345
Beryllium (Be)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Bismuth (Bi)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Boron (B)-Total	<0.050		0.050	mg/L	5		27-JAN-14	R2780345
Cadmium (Cd)-Total	<0.000090		0.000090	mg/L	0.005		27-JAN-14	R2780345
Calcium (Ca)-Total	77.0		0.50	mg/L			27-JAN-14	R2780345
Chromium (Cr)-Total	0.00053		0.00050	mg/L	0.05		27-JAN-14	R2780345
Cobalt (Co)-Total	<0.00050		0.00050	mg/L			27-JAN-14	R2780345
Copper (Cu)-Total	0.0180		0.0010	mg/L		1	27-JAN-14	R2780345
Iron (Fe)-Total	<0.050		0.050	mg/L		0.3	27-JAN-14	R2780345
Lead (Pb)-Total	<0.0010		0.0010	mg/L	0.01		27-JAN-14	R2780345
Magnesium (Mg)-Total	19.3		0.50	mg/L			27-JAN-14	R2780345

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1415234 CONTD....

Page 4 of 7

30-JAN-14 14:08:16

P-0002619-0-01-302

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1415234-2 719 ERBSVILLE RD								
Sampled By: J. STROEDER on 24-JAN-14 @ 11:15								
Matrix: WATER					STANDARDS	GUIDELINES		
General Water Quality Package								
Detailed Ion Balance Calculation								
Cation - Anion Balance	5.7			%			29-JAN-14	
Computed Conductivity	701			uS/cm			29-JAN-14	
Conductivity % Difference	-9.3			%			29-JAN-14	
TDS (Calculated)	422			mg/L			29-JAN-14	
Anion Sum	7.26			me/L			29-JAN-14	
Cation Sum	8.14			me/L			29-JAN-14	
Saturation pH	7.08			pH			29-JAN-14	
Langelier Index	0.7			No Unit			29-JAN-14	
Hardness (as CaCO3)	348			mg/L		** 80-100	29-JAN-14	
E. Coli	0		0	CFU/100mL	0		25-JAN-14	R2779747
Phosphate-P (ortho)	<0.0030		0.0030	mg/L			27-JAN-14	R2780581
Total Coliform Background	0		0	CFU/100mL			25-JAN-14	R2779746
Redox Potential	222	PEHT	-1000	mV			30-JAN-14	R2782817
Sodium Adsorption Ratio	0.61		0.030	SAR			28-JAN-14	
Total Coliforms	0		0	CFU/100mL	0		25-JAN-14	R2779746
Total Dissolved Solids	437		20	mg/L		500	29-JAN-14	R2782182
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	<0.010		0.010	mg/L		0.1	27-JAN-14	R2780345
Antimony (Sb)-Total	<0.0050		0.0050	mg/L	0.006		27-JAN-14	R2780345
Arsenic (As)-Total	<0.0010		0.0010	mg/L	0.025		27-JAN-14	R2780345
Barium (Ba)-Total	0.143		0.010	mg/L	1		27-JAN-14	R2780345
Beryllium (Be)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Bismuth (Bi)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Boron (B)-Total	<0.050		0.050	mg/L	5		27-JAN-14	R2780345
Cadmium (Cd)-Total	<0.000090		0.000090	mg/L	0.005		27-JAN-14	R2780345
Calcium (Ca)-Total	88.0		0.50	mg/L			27-JAN-14	R2780345
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	0.05		27-JAN-14	R2780345
Cobalt (Co)-Total	<0.00050		0.00050	mg/L			27-JAN-14	R2780345
Copper (Cu)-Total	0.0027		0.0010	mg/L		1	27-JAN-14	R2780345
Iron (Fe)-Total	0.651		0.050	mg/L		** 0.3	27-JAN-14	R2780345
Lead (Pb)-Total	<0.0010		0.0010	mg/L	0.01		27-JAN-14	R2780345
Magnesium (Mg)-Total	31.1		0.50	mg/L			27-JAN-14	R2780345
Manganese (Mn)-Total	0.0194		0.0010	mg/L		0.05	27-JAN-14	R2780345
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Nickel (Ni)-Total	<0.0020		0.0020	mg/L			27-JAN-14	R2780345
Phosphorus (P)-Total	<0.050		0.050	mg/L			27-JAN-14	R2780345
Potassium (K)-Total	2.1		1.0	mg/L			27-JAN-14	R2780345
Selenium (Se)-Total	<0.00040		0.00040	mg/L	0.01		27-JAN-14	R2780345
Silicon (Si)-Total	5.7		1.0	mg/L			27-JAN-14	R2780345
Silver (Ag)-Total	<0.00010		0.00010	mg/L			27-JAN-14	R2780345
Sodium (Na)-Total	26.0		0.50	mg/L	** 20	200	27-JAN-14	R2780345
Strontium (Sr)-Total	0.227		0.0010	mg/L			27-JAN-14	R2780345
Thallium (Tl)-Total	<0.00030		0.00030	mg/L			27-JAN-14	R2780345
Tin (Sn)-Total	<0.0010		0.0010	mg/L			27-JAN-14	R2780345
Titanium (Ti)-Total	<0.0020		0.0020	mg/L			27-JAN-14	R2780345

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

Reference Information

P-0002619-0-01-302

L1415234 CONTD....

Page 6 of 7

30-JAN-14 14:08:16

Sample Parameter Qualifier key listed:

Qualifier	Description
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ALK-SPEC-WT	Water	Speciated Alkalinity		EPA 310.2
ANIONS-WT	Water	Anion Scan (IC)		EPA 300.0 (IC)
COLOUR-WT	Water	Colour		APHA 2120

Apparent colour is determined by analysis of the decanted sample using the platinum-cobalt colourimetric method.

EC-MF-WT	Water	E. coli		SM 9222D
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A 100mL volume of sample is filtered through a membrane, the membrane is placed on mFC-BCIG agar and incubated at @44.5–0.2 C for 24–2h.
Method ID: WT-TM-1200

EC-WT	Water	Conductivity		APHA 2510 B
-------	-------	--------------	--	-------------

Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-SAR-CALC-WT	Water	Sodium Adsorption Ratio		Calculation
ETL-SILICA-CALC-WT	Water	Calculate from SI-TOT-WT		EPA 200.8
IONBALANCE-OP03-WT	Water	Detailed Ion Balance Calculation		APHA 1030E, 2330B, 2510A
MET-T-MS-WT	Water	Total Metals in Water by ICPMS		EPA 200.8

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

NH3-WT	Water	Ammonia, Total as N		EPA 350.1
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Sample is measured colorimetrically. When sample is turbid a distillation step is required, sample is distilled into a solution of boric acid and measured colorimetrically.

P-ORTHO-LOW-WT	Water	Phosphorus-P (ortho)		APHA 4500-P B E
PH-ALK-WT	Water	pH		APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

REDOX-POTENTIAL-WT	Water	Redox Potential		APHA 2580
SOLIDS-TDS-WT	Water	Total Dissolved Solids		APHA 2540C

A well-mixed sample is filtered though glass fibres filter. A known volume of the filtrate is evaporated and dried at 105–5 C overnight and then 180–10 C for 1hr.

TC-MF-WT	Water	Total Coliforms		SM 9222B
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A 100mL volume of sample is filtered through a membrane, the membrane is placed on mENDO LES agar and incubated at 35–0.5 C for 24–2h.
Method ID: WT-TM-1200

TCB-MF-WT	Water	REG		SM 9222B
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A 100mL volume of sample is filtered through a membrane, the membrane is placed on mENDO LES agar and incubated at 35–0.5 C for 24–2h.
Method ID: WT-TM-1200.

TURBIDITY-WT	Water	Turbidity		APHA 2130 B
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Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.

Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

146621

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

P-0002619-0-01-302

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of criteria limits is provided as is without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 1 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-SPEC-WT		Water						
Batch	R2781317							
WG1822786-3 CRM		WT-ALK-CRM						
Alkalinity, Total (as CaCO3)			100.8		%		80-120	28-JAN-14
WG1822786-2 CVS								
Alkalinity, Total (as CaCO3)			105.5		%		85-115	28-JAN-14
WG1822786-4 DUP		L1414024-1						
Alkalinity, Total (as CaCO3)		277	261		mg/L	5.8	20	28-JAN-14
Alkalinity, Bicarbonate (as CaCO3)		276	260		mg/L	5.8	25	28-JAN-14
Alkalinity, Carbonate (as CaCO3)		<10	<10	RPD-NA	mg/L	N/A	25	28-JAN-14
Alkalinity, Hydroxide (as CaCO3)		<10	<10	RPD-NA	mg/L	N/A	25	28-JAN-14
WG1822786-1 MB								
Alkalinity, Total (as CaCO3)			<10		mg/L		10	28-JAN-14
Alkalinity, Bicarbonate (as CaCO3)			<10		mg/L		10	28-JAN-14
Alkalinity, Carbonate (as CaCO3)			<10		mg/L		10	28-JAN-14
Alkalinity, Hydroxide (as CaCO3)			<10		mg/L		10	28-JAN-14
ANIONS-WT		Water						
Batch	R2782087							
WG1822773-2 LCS								
Chloride			100.8		%		85-115	28-JAN-14
Bromide			98.3		%		85-115	28-JAN-14
Fluoride			100.7		%		85-115	28-JAN-14
Nitrite-N			101.2		%		85-115	28-JAN-14
Nitrate-N			100.4		%		85-115	28-JAN-14
Sulphate			100.6		%		85-115	28-JAN-14
WG1822773-3 LCSD		WG1822773-2						
Chloride		100.8	100.6		%	0.2	25	28-JAN-14
Bromide		98.3	99.7		%	1.4	25	28-JAN-14
Fluoride		100.7	100.7		%	0.1	25	28-JAN-14
Nitrite-N		101.2	101.0		%	0.2	25	28-JAN-14
Nitrate-N		100.4	100.3		%	0.1	25	28-JAN-14
Sulphate		100.6	100.3		%	0.3	25	28-JAN-14
WG1822773-1 MB								
Chloride			<2.0		mg/L		2	28-JAN-14
Bromide			<0.10		mg/L		0.1	28-JAN-14
Fluoride			<0.10		mg/L		0.1	28-JAN-14
Nitrite-N			<0.10		mg/L		0.1	28-JAN-14

Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 2 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-WT	Water							
Batch	R2782087							
WG1822773-1 MB								
Nitrate-N			<0.10		mg/L		0.1	28-JAN-14
Sulphate			<2.0		mg/L		2	28-JAN-14
COLOUR-WT	Water							
Batch	R2779400							
WG1821703-3 CRM		WT-COLOUR-CRM						
Color, Apparent			95.7		%		80-120	24-JAN-14
WG1821703-2 CVS								
Color, Apparent			95.6		%		85-115	24-JAN-14
WG1821703-4 DUP		L1415234-2						
Color, Apparent		27.0	28.3		C.U.	4.5	20	24-JAN-14
WG1821703-1 MB								
Color, Apparent			<1.0		C.U.		1	24-JAN-14
EC-MF-WT	Water							
Batch	R2779747							
WG1821649-3 DUP		L1414995-1						
E. Coli		0	0		CFU/100mL	0.0	50	25-JAN-14
WG1821649-1 MB								
E. Coli			0		CFU/100mL		1	25-JAN-14
WG1821649-2 MB								
E. Coli			0		CFU/100mL		1	25-JAN-14
EC-WT	Water							
Batch	R2781219							
WG1822598-2 CVS								
Conductivity			99.1		%		90-110	28-JAN-14
WG1822598-3 DUP		L1415234-1						
Conductivity		567	566		umhos/cm	0.2	10	28-JAN-14
WG1822598-1 MB								
Conductivity			<3.0		umhos/cm		3	28-JAN-14
MET-T-MS-WT	Water							
Batch	R2780345							
WG1822316-1 CVS								
Aluminum (Al)-Total			98.4		%		80-120	27-JAN-14
Antimony (Sb)-Total			101.8		%		80-120	27-JAN-14
Arsenic (As)-Total			96.9		%		80-120	27-JAN-14
Barium (Ba)-Total			101.9		%		80-120	27-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 3 of 12

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch R2780345								
WG1822316-1 CVS								
Beryllium (Be)-Total			104.0		%		80-120	27-JAN-14
Bismuth (Bi)-Total			100.7		%		80-120	27-JAN-14
Boron (B)-Total			107.3		%		80-120	27-JAN-14
Cadmium (Cd)-Total			102.9		%		80-120	27-JAN-14
Calcium (Ca)-Total			101.4		%		80-120	27-JAN-14
Chromium (Cr)-Total			101.8		%		80-120	27-JAN-14
Cobalt (Co)-Total			99.0		%		80-120	27-JAN-14
Copper (Cu)-Total			101.0		%		80-120	27-JAN-14
Iron (Fe)-Total			101.8		%		80-120	27-JAN-14
Lead (Pb)-Total			100.5		%		80-120	27-JAN-14
Magnesium (Mg)-Total			93.7		%		80-120	27-JAN-14
Manganese (Mn)-Total			103.6		%		80-120	27-JAN-14
Molybdenum (Mo)-Total			98.4		%		80-120	27-JAN-14
Nickel (Ni)-Total			100.5		%		80-120	27-JAN-14
Phosphorus (P)-Total			99.4		%		80-120	27-JAN-14
Potassium (K)-Total			96.6		%		80-120	27-JAN-14
Selenium (Se)-Total			97.4		%		80-120	27-JAN-14
Silicon (Si)-Total			98.5		%		80-120	27-JAN-14
Silver (Ag)-Total			103.9		%		80-120	27-JAN-14
Sodium (Na)-Total			92.9		%		80-120	27-JAN-14
Strontium (Sr)-Total			98.6		%		80-120	27-JAN-14
Thallium (Tl)-Total			99.9		%		80-120	27-JAN-14
Tin (Sn)-Total			102.4		%		80-120	27-JAN-14
Titanium (Ti)-Total			100.4		%		80-120	27-JAN-14
Tungsten (W)-Total			99.7		%		80-120	27-JAN-14
Uranium (U)-Total			101.3		%		80-120	27-JAN-14
Vanadium (V)-Total			100.2		%		80-120	27-JAN-14
Zinc (Zn)-Total			98.0		%		80-120	27-JAN-14
Zirconium (Zr)-Total			100.3		%		80-120	27-JAN-14
WG1822316-3 CVS								
Aluminum (Al)-Total			98.3		%		80-120	28-JAN-14
Antimony (Sb)-Total			99.7		%		80-120	28-JAN-14
Arsenic (As)-Total			97.7		%		80-120	28-JAN-14
Barium (Ba)-Total			100.8		%		80-120	28-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 4 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2780345							
WG1822316-3	CVS							
Beryllium (Be)-Total			102.8		%		80-120	28-JAN-14
Bismuth (Bi)-Total			99.4		%		80-120	28-JAN-14
Boron (B)-Total			104.0		%		80-120	28-JAN-14
Cadmium (Cd)-Total			100.7		%		80-120	28-JAN-14
Calcium (Ca)-Total			99.1		%		80-120	28-JAN-14
Chromium (Cr)-Total			98.6		%		80-120	28-JAN-14
Cobalt (Co)-Total			98.9		%		80-120	28-JAN-14
Copper (Cu)-Total			100.6		%		80-120	28-JAN-14
Iron (Fe)-Total			101.9		%		80-120	28-JAN-14
Lead (Pb)-Total			99.4		%		80-120	28-JAN-14
Magnesium (Mg)-Total			94.0		%		80-120	28-JAN-14
Manganese (Mn)-Total			100.2		%		80-120	28-JAN-14
Molybdenum (Mo)-Total			95.3		%		80-120	28-JAN-14
Nickel (Ni)-Total			98.4		%		80-120	28-JAN-14
Phosphorus (P)-Total			94.5		%		80-120	28-JAN-14
Potassium (K)-Total			96.0		%		80-120	28-JAN-14
Selenium (Se)-Total			95.8		%		80-120	28-JAN-14
Silicon (Si)-Total			93.0		%		80-120	28-JAN-14
Silver (Ag)-Total			102.9		%		80-120	28-JAN-14
Sodium (Na)-Total			92.4		%		80-120	28-JAN-14
Strontium (Sr)-Total			100.4		%		80-120	28-JAN-14
Thallium (Tl)-Total			99.8		%		80-120	28-JAN-14
Tin (Sn)-Total			101.2		%		80-120	28-JAN-14
Titanium (Ti)-Total			98.6		%		80-120	28-JAN-14
Tungsten (W)-Total			100.2		%		80-120	28-JAN-14
Uranium (U)-Total			100.1		%		80-120	28-JAN-14
Vanadium (V)-Total			95.5		%		80-120	28-JAN-14
Zinc (Zn)-Total			99.8		%		80-120	28-JAN-14
Zirconium (Zr)-Total			98.0		%		80-120	28-JAN-14
WG1822000-4	DUP	WG1822000-3						
Aluminum (Al)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-JAN-14
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-JAN-14
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-JAN-14
Barium (Ba)-Total		0.0133	0.0140					



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 5 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2780345							
WG1822000-4	DUP	WG1822000-3						
Barium (Ba)-Total		0.0133	0.0140		mg/L	5.0	20	27-JAN-14
Beryllium (Be)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-JAN-14
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-JAN-14
Boron (B)-Total		0.016	0.017		mg/L	5.4	20	27-JAN-14
Cadmium (Cd)-Total		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	27-JAN-14
Calcium (Ca)-Total		24.7	25.8		mg/L	4.3	20	27-JAN-14
Chromium (Cr)-Total		0.00073	0.00077		mg/L	5.0	20	27-JAN-14
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-JAN-14
Copper (Cu)-Total		0.0015	0.0015		mg/L	1.7	20	27-JAN-14
Iron (Fe)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	27-JAN-14
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-JAN-14
Magnesium (Mg)-Total		6.33	6.62		mg/L	4.6	20	27-JAN-14
Manganese (Mn)-Total		0.0067	0.0070		mg/L	4.8	20	27-JAN-14
Molybdenum (Mo)-Total		0.00153	0.00161		mg/L	4.9	20	27-JAN-14
Nickel (Ni)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-JAN-14
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	27-JAN-14
Potassium (K)-Total		1.2	1.3		mg/L	3.4	20	27-JAN-14
Selenium (Se)-Total		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	27-JAN-14
Silicon (Si)-Total		<1.0	<1.0	RPD-NA	mg/L	N/A	20	27-JAN-14
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-JAN-14
Sodium (Na)-Total		8.15	8.55		mg/L	4.8	20	27-JAN-14
Strontium (Sr)-Total		0.0890	0.0935		mg/L	4.9	20	27-JAN-14
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	27-JAN-14
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-JAN-14
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	27-JAN-14
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-JAN-14
Uranium (U)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-JAN-14
Vanadium (V)-Total		0.00075	0.00079		mg/L	5.5	20	27-JAN-14
Zinc (Zn)-Total		0.0068	0.0079		mg/L	14	20	27-JAN-14
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	27-JAN-14
WG1822000-2	LCS							
Aluminum (Al)-Total			102.8		%		80-120	27-JAN-14
Antimony (Sb)-Total			95.8		%		80-120	27-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 6 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2780345							
WG1822000-2		LCS						
Arsenic (As)-Total			91.9		%		80-120	27-JAN-14
Barium (Ba)-Total			93.3		%		80-120	27-JAN-14
Beryllium (Be)-Total			98.7		%		80-120	27-JAN-14
Bismuth (Bi)-Total			92.3		%		80-120	27-JAN-14
Boron (B)-Total			98.5		%		80-120	27-JAN-14
Cadmium (Cd)-Total			94.3		%		80-120	27-JAN-14
Calcium (Ca)-Total			96.7		%		80-120	27-JAN-14
Chromium (Cr)-Total			95.2		%		80-120	27-JAN-14
Cobalt (Co)-Total			90.9		%		80-120	27-JAN-14
Copper (Cu)-Total			91.1		%		80-120	27-JAN-14
Iron (Fe)-Total			95.7		%		80-120	27-JAN-14
Lead (Pb)-Total			93.2		%		80-120	27-JAN-14
Magnesium (Mg)-Total			92.7		%		80-120	27-JAN-14
Manganese (Mn)-Total			95.5		%		80-120	27-JAN-14
Molybdenum (Mo)-Total			91.8		%		80-120	27-JAN-14
Nickel (Ni)-Total			91.2		%		80-120	27-JAN-14
Phosphorus (P)-Total			109.7		%		80-120	27-JAN-14
Potassium (K)-Total			92.3		%		80-120	27-JAN-14
Selenium (Se)-Total			91.0		%		80-120	27-JAN-14
Silicon (Si)-Total			99.5		%		80-120	27-JAN-14
Silver (Ag)-Total			93.8		%		80-120	27-JAN-14
Sodium (Na)-Total			92.9		%		80-120	27-JAN-14
Strontium (Sr)-Total			90.2		%		80-120	27-JAN-14
Thallium (Tl)-Total			93.1		%		80-120	27-JAN-14
Tin (Sn)-Total			95.5		%		80-120	27-JAN-14
Titanium (Ti)-Total			94.6		%		80-120	27-JAN-14
Tungsten (W)-Total			95.3		%		80-120	27-JAN-14
Uranium (U)-Total			91.3		%		80-120	27-JAN-14
Vanadium (V)-Total			95.9		%		80-120	27-JAN-14
Zinc (Zn)-Total			91.7		%		80-120	27-JAN-14
Zirconium (Zr)-Total			89.1		%		80-120	27-JAN-14
WG1822000-1		MB						
Aluminum (Al)-Total			<0.010		mg/L		0.01	27-JAN-14
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	27-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 7 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2780345							
WG1822000-1 MB								
Arsenic (As)-Total			<0.0010		mg/L		0.001	27-JAN-14
Barium (Ba)-Total			<0.0020		mg/L		0.002	27-JAN-14
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	27-JAN-14
Boron (B)-Total			<0.010		mg/L		0.01	27-JAN-14
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	27-JAN-14
Calcium (Ca)-Total			<0.50		mg/L		0.5	27-JAN-14
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	27-JAN-14
Iron (Fe)-Total			<0.050		mg/L		0.05	27-JAN-14
Lead (Pb)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Magnesium (Mg)-Total			<0.50		mg/L		0.5	27-JAN-14
Manganese (Mn)-Total			<0.0010		mg/L		0.001	27-JAN-14
Molybdenum (Mo)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Nickel (Ni)-Total			<0.0010		mg/L		0.001	27-JAN-14
Phosphorus (P)-Total			<0.050		mg/L		0.05	27-JAN-14
Potassium (K)-Total			<1.0		mg/L		1	27-JAN-14
Selenium (Se)-Total			<0.00040		mg/L		0.0004	27-JAN-14
Silicon (Si)-Total			<1.0		mg/L		1	27-JAN-14
Silver (Ag)-Total			<0.00010		mg/L		0.0001	27-JAN-14
Sodium (Na)-Total			<0.50		mg/L		0.5	27-JAN-14
Strontium (Sr)-Total			<0.0010		mg/L		0.001	27-JAN-14
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	27-JAN-14
Tin (Sn)-Total			<0.0010		mg/L		0.001	27-JAN-14
Titanium (Ti)-Total			<0.0020		mg/L		0.002	27-JAN-14
Tungsten (W)-Total			<0.010		mg/L		0.01	27-JAN-14
Uranium (U)-Total			<0.0010		mg/L		0.001	27-JAN-14
Vanadium (V)-Total			<0.00050		mg/L		0.0005	27-JAN-14
Zinc (Zn)-Total			<0.0060		mg/L		0.006	27-JAN-14
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	27-JAN-14
WG1822000-5 MS		WG1822000-3						
Aluminum (Al)-Total			112.7		%		70-130	27-JAN-14
Antimony (Sb)-Total			98.6		%		70-130	27-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 9 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-WT		Water						
Batch	R2779855							
WG1822097-2	CVS							
Ammonia, Total (as N)			102.4		%		85-115	27-JAN-14
WG1822097-3	DUP	L1415159-1						
Ammonia, Total (as N)		0.384	0.397		mg/L	3.5	20	27-JAN-14
WG1822097-5	DUP	L1414723-1						
Ammonia, Total (as N)		0.134	0.134		mg/L	0.2	20	27-JAN-14
WG1822097-1	MB							
Ammonia, Total (as N)			<0.050		mg/L		0.05	27-JAN-14
WG1822097-4	MS	L1415159-1						
Ammonia, Total (as N)			86.5		%		75-125	27-JAN-14
WG1822097-6	MS	L1414723-1						
Ammonia, Total (as N)			91.5		%		75-125	27-JAN-14
P-ORTHO-LOW-WT		Water						
Batch	R2780581							
WG1822339-3	DUP	L1414688-2						
Phosphate-P (ortho)		0.573	0.554		mg/L	3.3	20	27-JAN-14
WG1822339-5	DUP	L1415597-3						
Phosphate-P (ortho)		0.0308	0.0303		mg/L	1.8	20	27-JAN-14
WG1822339-2	LCS							
Phosphate-P (ortho)			110.2		%		80-120	27-JAN-14
WG1822339-1	MB							
Phosphate-P (ortho)			<0.0030		mg/L		0.003	27-JAN-14
WG1822339-4	MS	L1414688-2						
Phosphate-P (ortho)			N/A	MS-B	%		-	27-JAN-14
WG1822339-6	MS	L1415597-3						
Phosphate-P (ortho)			86.3		%		70-130	27-JAN-14
PH-ALK-WT		Water						
Batch	R2781232							
WG1822597-2	DUP	L1415234-1						
pH		7.79	7.74	J	pH units	0.00	0.2	27-JAN-14
WG1822597-1	LCS							
pH			6.99		pH units		6.9-7.1	27-JAN-14
REDOX-POTENTIAL-WT		Water						
Batch	R2782817							
WG1824234-1	DUP	L1414724-1						
Redox Potential		248	260		mV	4.7	25	30-JAN-14



Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Page 10 of 12

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TDS-WT		Water						
Batch	R2782182							
WG1823143-3 DUP		L1415334-2						
Total Dissolved Solids		410	400		mg/L	2.5	20	29-JAN-14
WG1823143-2 LCS								
Total Dissolved Solids			101.2		%		85-115	29-JAN-14
WG1823143-1 MB								
Total Dissolved Solids			<20		mg/L		20	29-JAN-14
TC-MF-WT		Water						
Batch	R2779746							
WG1821651-3 DUP		L1415277-2						
Total Coliforms		0	0		CFU/100mL	0.0	50	25-JAN-14
WG1821651-1 MB								
Total Coliforms			0		CFU/100mL		1	25-JAN-14
WG1821651-2 MB								
Total Coliforms			0		CFU/100mL		1	25-JAN-14
TCB-MF-WT		Water						
Batch	R2779746							
WG1821651-1 MB								
Total Coliform Background			0		CFU/100mL		1	25-JAN-14
WG1821651-2 MB								
Total Coliform Background			0		CFU/100mL		1	25-JAN-14
TURBIDITY-WT		Water						
Batch	R2779216							
WG1821554-2 CVS								
Turbidity			99.0		%		85-115	24-JAN-14
WG1821554-4 DUP		L1415234-1						
Turbidity		0.24	0.24		NTU	0.0	20	24-JAN-14
WG1821554-1 MB								
Turbidity			<0.10		NTU		0.1	24-JAN-14

Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 11 of 12

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1415234

Report Date: 30-JAN-14

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 12 of 12

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Redox Potential	1	24-JAN-14 10:00	30-JAN-14 13:51	0.25	148	hours	EHTR-FM
	2	24-JAN-14 11:15	30-JAN-14 13:52	0.25	147	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1415234 were received on 24-JAN-14 12:14.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Toll Free: 1-800-668-9878

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM Page 1 of 1

146621

C of C # 00000

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date
required

Service requested

22 day TAT (50%)

5 day (regular)

Next day TAT (100%)

3-4 day (25%)

Some day TAT (200%)

COMPANY NAME		CRITERIA		Criteria on report YES NO	
OFFICE		Reg 153/04		Reg 511/09	
PROJECT MANAGER		TCLP MISA PWQO			
PROJECT #		ODWS OTHER			
PHONE		REPORT FORMAT/DISTRIBUTION			
FAX		EMAIL FAX BOTH			
ACCOUNT #		SELECT: PDF DIGITAL BOTH			
QUOTATION #		EMAIL 1 EMAIL 2			
SAMPLING INFORMATION					
Sample Date/Time		TYPE		MATRIX	
Date (dd-mm-yy)	Time (24hr) (hh:mm)	COMP	GRAB	WATER	SOIL OTHER
SAMPLE DESCRIPTION TO APPEAR ON REPORT					
724 SCHNAPP ST					
719 FORTBELLER RD					
ANALYSIS REQUEST					
PLEASE INDICATE FILTERED, PRESERVED OR BOTH <---- (F, P, F/P)					
SUBMISSION #					
ENTERED BY					
DATE/TIME ENTERED:					
BIN #					
COMMENTS					
LAB ID					
NUMBER OF CONTAINERS					
POTABILITY PKG					
SPECIAL INSTRUCTIONS/COMMENTS					
THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)					
SAMPLE CONDITION					
Are any samples taken from a regulated DW System?					
If yes, an authorized drinking water COC MUST be used for this submission.					
Is the water sampled intended to be potable for human consumption?					
FROZEN COLD COOLING INITIATED AMBIENT					
OBSERVATIONS					
yes no If yes add SIF					
SAMPLED BY		DATE & TIME		RECEIVED BY	
RELINQUISHED BY		DATE & TIME		RECEIVED AT LAB BY	

Notes

3. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Any delay in or suspension of analysis must be noted on the report and a copy of comments is sent.



LVM INC.
ATTN: CHRIS HELMER
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Date Received: 27-JAN-14
Report Date: 30-JAN-14 14:07 (MT)
Version: FINAL

Client Phone: 519-741-1313

Certificate of Analysis

Lab Work Order #: L1415630
Project P.O. #: NOT SUBMITTED
Job Reference: P-0002619-0-01-300
C of C Numbers: 146633
Legal Site Desc:

Nancy Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

CRITERIA REPORT

L1415630 CONTD....

Page 2 of 6

30-JAN-14 14:09:30

P-0002619-0-01-300

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1415630-1 720 ERBSVILLE								
Sampled By: JS on 27-JAN-14 @ 10:30								
Matrix: WATER					STANDARDS	GUIDELINES		
General Water Quality Package								
Ammonia, Total (as N)	0.064		0.050	mg/L			28-JAN-14	R2781214
Anion Scan (IC)								
Chloride	36.0		2.0	mg/L		250	28-JAN-14	R2782087
Bromide	<0.10		0.10	mg/L			28-JAN-14	R2782087
Fluoride	0.34		0.10	mg/L	1.5		28-JAN-14	R2782087
Nitrite-N	<0.10		0.10	mg/L	1		28-JAN-14	R2782087
Nitrate-N	<0.10		0.10	mg/L	10		28-JAN-14	R2782087
Sulphate	53.2		2.0	mg/L		500	28-JAN-14	R2782087
Silica	12.6		2.1	mg/L			28-JAN-14	
Color, Apparent	<1.0		1.0	C.U.		5	28-JAN-14	R2780869
Conductivity	637		3.0	umhos/cm			28-JAN-14	R2781219
Detailed Ion Balance Calculation								
Ion Balance	111			%			29-JAN-14	
Cation - Anion Balance	5.3			%			29-JAN-14	
Computed Conductivity	547			uS/cm			29-JAN-14	
Conductivity % Difference	-15.2			%			29-JAN-14	
TDS (Calculated)	321			mg/L			29-JAN-14	
Anion Sum	5.52			me/L			29-JAN-14	
Cation Sum	6.14			me/L			29-JAN-14	
Saturation pH	7.27			pH			29-JAN-14	
Langelier Index	0.5			No Unit			29-JAN-14	
Hardness (as CaCO3)	281			mg/L	**	80-100	29-JAN-14	
E. Coli	0		0	CFU/100mL	0		28-JAN-14	R2781348
Phosphate-P (ortho)	0.0030		0.0030	mg/L			29-JAN-14	R2782387
Total Coliform Background	10		0	CFU/100mL			28-JAN-14	R2781346
Redox Potential	213	PEHT	-1000	mV			30-JAN-14	R2782817
Sodium Adsorption Ratio	0.31		0.030	SAR			28-JAN-14	
Total Coliforms	0		0	CFU/100mL	0		28-JAN-14	R2781346
Total Dissolved Solids	371		20	mg/L		500	29-JAN-14	R2782182
Total Metals in Water by ICPMS								
Aluminum (Al)-Total	<0.010		0.010	mg/L		0.1	28-JAN-14	R2781211
Antimony (Sb)-Total	<0.0050		0.0050	mg/L	0.006		28-JAN-14	R2781211
Arsenic (As)-Total	<0.0010		0.0010	mg/L	0.025		28-JAN-14	R2781211
Barium (Ba)-Total	0.037		0.010	mg/L	1		28-JAN-14	R2781211
Beryllium (Be)-Total	<0.0010		0.0010	mg/L			28-JAN-14	R2781211
Bismuth (Bi)-Total	<0.0010		0.0010	mg/L			28-JAN-14	R2781211
Boron (B)-Total	<0.050		0.050	mg/L	5		28-JAN-14	R2781211
Cadmium (Cd)-Total	<0.000090		0.000090	mg/L	0.005		28-JAN-14	R2781211
Calcium (Ca)-Total	72.1		0.50	mg/L			28-JAN-14	R2781211
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	0.05		28-JAN-14	R2781211
Cobalt (Co)-Total	<0.00050		0.00050	mg/L			28-JAN-14	R2781211
Copper (Cu)-Total	0.0058		0.0010	mg/L		1	28-JAN-14	R2781211
Iron (Fe)-Total	<0.050		0.050	mg/L		0.3	28-JAN-14	R2781211
Lead (Pb)-Total	<0.0010		0.0010	mg/L	0.01		28-JAN-14	R2781211
Magnesium (Mg)-Total	24.6		0.50	mg/L			28-JAN-14	R2781211

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

CRITERIA REPORT

L1415630 CONTD....

Page 3 of 6

30-JAN-14 14:09:30

P-0002619-0-01-300

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits		Analyzed	Batch
L1415630-1 720 ERBSVILLE								
Sampled By: JS on 27-JAN-14 @ 10:30								
Matrix: WATER								
General Water Quality Package								
Total Metals in Water by ICPMS								
Manganese (Mn)-Total	<0.0010		0.0010	mg/L		0.05	28-JAN-14	R2781211
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L			28-JAN-14	R2781211
Nickel (Ni)-Total	<0.0020		0.0020	mg/L			28-JAN-14	R2781211
Phosphorus (P)-Total	<0.050		0.050	mg/L			28-JAN-14	R2781211
Potassium (K)-Total	<1.0		1.0	mg/L			28-JAN-14	R2781211
Selenium (Se)-Total	<0.00040		0.00040	mg/L	0.01		28-JAN-14	R2781211
Silicon (Si)-Total	5.9		1.0	mg/L			28-JAN-14	R2781211
Silver (Ag)-Total	<0.00010		0.00010	mg/L			28-JAN-14	R2781211
Sodium (Na)-Total	11.8		0.50	mg/L	20	200	28-JAN-14	R2781211
Strontium (Sr)-Total	1.14		0.0010	mg/L			28-JAN-14	R2781211
Thallium (Tl)-Total	<0.00030		0.00030	mg/L			28-JAN-14	R2781211
Tin (Sn)-Total	<0.0010		0.0010	mg/L			28-JAN-14	R2781211
Titanium (Ti)-Total	<0.0020		0.0020	mg/L			28-JAN-14	R2781211
Tungsten (W)-Total	<0.010		0.010	mg/L			28-JAN-14	R2781211
Uranium (U)-Total	<0.0050		0.0050	mg/L	0.02		28-JAN-14	R2781211
Vanadium (V)-Total	<0.0010		0.0010	mg/L			28-JAN-14	R2781211
Zinc (Zn)-Total	0.0139		0.0060	mg/L		5	28-JAN-14	R2781211
Zirconium (Zr)-Total	<0.0040		0.0040	mg/L			28-JAN-14	R2781211
Turbidity	0.23		0.10	NTU		5	28-JAN-14	R2781265
pH	7.75		0.10	pH units		6.5-8.5	27-JAN-14	R2781232
Individual Analytes								
Dissolved Metals in Water by ICPMS								
Dissolved Metals Filtration Location	LAB			No Unit			28-JAN-14	R2780887
Aluminum (Al)-Dissolved	<0.010		0.010	mg/L		0.1	28-JAN-14	R2781208
Antimony (Sb)-Dissolved	<0.00050		0.00050	mg/L	0.006		28-JAN-14	R2781208
Arsenic (As)-Dissolved	<0.0010		0.0010	mg/L	0.025		28-JAN-14	R2781208
Barium (Ba)-Dissolved	0.0381		0.0020	mg/L	1		28-JAN-14	R2781208
Beryllium (Be)-Dissolved	<0.00050		0.00050	mg/L			28-JAN-14	R2781208
Bismuth (Bi)-Dissolved	<0.0010		0.0010	mg/L			28-JAN-14	R2781208
Boron (B)-Dissolved	0.014		0.010	mg/L	5		28-JAN-14	R2781208
Cadmium (Cd)-Dissolved	<0.000090		0.000090	mg/L	0.005		28-JAN-14	R2781208
Calcium (Ca)-Dissolved	74.4		0.50	mg/L			28-JAN-14	R2781208
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	0.05		28-JAN-14	R2781208
Cobalt (Co)-Dissolved	<0.00050		0.00050	mg/L			28-JAN-14	R2781208
Copper (Cu)-Dissolved	0.0054		0.0010	mg/L		1	28-JAN-14	R2781208
Iron (Fe)-Dissolved	<0.050		0.050	mg/L		0.3	28-JAN-14	R2781208
Lead (Pb)-Dissolved	<0.00050		0.00050	mg/L	0.01		28-JAN-14	R2781208
Lithium (Li)-Dissolved	<0.10		0.10	mg/L			28-JAN-14	R2781208
Magnesium (Mg)-Dissolved	25.1		0.50	mg/L			28-JAN-14	R2781208
Manganese (Mn)-Dissolved	0.0011		0.0010	mg/L		0.05	28-JAN-14	R2781208
Molybdenum (Mo)-Dissolved	0.00101		0.00050	mg/L			28-JAN-14	R2781208
Nickel (Ni)-Dissolved	<0.0010		0.0010	mg/L			28-JAN-14	R2781208
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L			28-JAN-14	R2781208
Potassium (K)-Dissolved	<1.0		1.0	mg/L			28-JAN-14	R2781208
Selenium (Se)-Dissolved	<0.00040		0.00040	mg/L	0.01		28-JAN-14	R2781208
Silicon (Si)-Dissolved	7.9		1.0	mg/L			28-JAN-14	R2781208

* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

** Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

Reference Information

P-0002619-0-01-300

L1415630 CONTD....

Page 5 of 6
30-JAN-14 14:09:30

Sample Parameter Qualifier key listed:

Qualifier	Description
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ALK-SPEC-WT	Water	Speciated Alkalinity		EPA 310.2
ANIONS-WT	Water	Anion Scan (IC)		EPA 300.0 (IC)
COLOUR-WT	Water	Colour		APHA 2120

Apparent colour is determined by analysis of the decanted sample using the platinum-cobalt colourimetric method.

EC-MF-WT	Water	E. coli		SM 9222D
EC-WT	Water	Conductivity		APHA 2510 B

A 100mL volume of sample is filtered through a membrane, the membrane is placed on mFC-BCIG agar and incubated at @44.5–0.2 C for 24–2h.
Method ID: WT-TM-1200

ETL-SAR-CALC-WT	Water	Sodium Adsorption Ratio		Calculation
ETL-SILICA-CALC-WT	Water	Calculate from SI-TOT-WT		EPA 200.8
IONBALANCE-OP03-WT	Water	Detailed Ion Balance Calculation		APHA 1030E, 2330B, 2510A
MET-D-MS-WT	Water	Dissolved Metals in Water by ICPMS		EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-T-MS-WT	Water	Total Metals in Water by ICPMS		EPA 200.8
NH3-WT	Water	Ammonia, Total as N		EPA 350.1

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

P-ORTHO-LOW-WT	Water	Phosphorus-P (ortho)		APHA 4500-P B E
PH-ALK-WT	Water	pH		APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

REDOX-POTENTIAL-WT	Water	Redox Potential		APHA 2580
SOLIDS-TDS-WT	Water	Total Dissolved Solids		APHA 2540C

A well-mixed sample is filtered through glass fibres filter. A known volume of the filtrate is evaporated and dried at 105–5 C overnight and then 180–10 C for 1hr.

TC-MF-WT	Water	Total Coliforms		SM 9222B
TCB-MF-WT	Water	REG		SM 9222B

A 100mL volume of sample is filtered through a membrane, the membrane is placed on mENDO LES agar and incubated at 35–0.5 C for 24–2h.
Method ID: WT-TM-1200

TURBIDITY-WT	Water	Turbidity		APHA 2130 B
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Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.

Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

146633

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

P-0002619-0-01-300

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of criteria limits is provided as is without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 1 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-SPEC-WT		Water						
Batch	R2781317							
WG1822786-3 CRM		WT-ALK-CRM						
Alkalinity, Total (as CaCO ₃)			100.8		%		80-120	28-JAN-14
WG1822786-2 CVS								
Alkalinity, Total (as CaCO ₃)			105.5		%		85-115	28-JAN-14
WG1822786-4 DUP		L1414024-1						
Alkalinity, Total (as CaCO ₃)		277	261		mg/L	5.8	20	28-JAN-14
Alkalinity, Bicarbonate (as CaCO ₃)		276	260		mg/L	5.8	25	28-JAN-14
Alkalinity, Carbonate (as CaCO ₃)		<10	<10	RPD-NA	mg/L	N/A	25	28-JAN-14
Alkalinity, Hydroxide (as CaCO ₃)		<10	<10	RPD-NA	mg/L	N/A	25	28-JAN-14
WG1822786-1 MB								
Alkalinity, Total (as CaCO ₃)			<10		mg/L		10	28-JAN-14
Alkalinity, Bicarbonate (as CaCO ₃)			<10		mg/L		10	28-JAN-14
Alkalinity, Carbonate (as CaCO ₃)			<10		mg/L		10	28-JAN-14
Alkalinity, Hydroxide (as CaCO ₃)			<10		mg/L		10	28-JAN-14
ANIONS-WT		Water						
Batch	R2782087							
WG1822773-2 LCS								
Chloride			100.8		%		85-115	28-JAN-14
Bromide			98.3		%		85-115	28-JAN-14
Fluoride			100.7		%		85-115	28-JAN-14
Nitrite-N			101.2		%		85-115	28-JAN-14
Nitrate-N			100.4		%		85-115	28-JAN-14
Sulphate			100.6		%		85-115	28-JAN-14
WG1822773-3 LCSD		WG1822773-2						
Chloride		100.8	100.6		%	0.2	25	28-JAN-14
Bromide		98.3	99.7		%	1.4	25	28-JAN-14
Fluoride		100.7	100.7		%	0.1	25	28-JAN-14
Nitrite-N		101.2	101.0		%	0.2	25	28-JAN-14
Nitrate-N		100.4	100.3		%	0.1	25	28-JAN-14
Sulphate		100.6	100.3		%	0.3	25	28-JAN-14
WG1822773-1 MB								
Chloride			<2.0		mg/L		2	28-JAN-14
Bromide			<0.10		mg/L		0.1	28-JAN-14
Fluoride			<0.10		mg/L		0.1	28-JAN-14
Nitrite-N			<0.10		mg/L		0.1	28-JAN-14

Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 2 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-WT	Water							
Batch	R2782087							
WG1822773-1 MB								
Nitrate-N			<0.10		mg/L		0.1	28-JAN-14
Sulphate			<2.0		mg/L		2	28-JAN-14
COLOUR-WT	Water							
Batch	R2780869							
WG1822637-3 CRM		WT-COLOUR-CRM						
Color, Apparent			96.6		%		80-120	28-JAN-14
WG1822637-2 CVS								
Color, Apparent			97.4		%		85-115	28-JAN-14
WG1822637-4 DUP		L1415630-1						
Color, Apparent		<1.0	<1.0	RPD-NA	C.U.	N/A	20	28-JAN-14
WG1822637-1 MB								
Color, Apparent			<1.0		C.U.		1	28-JAN-14
EC-MF-WT	Water							
Batch	R2781348							
WG1822514-1 MB								
E. Coli			0		CFU/100mL		1	28-JAN-14
WG1822514-2 MB								
E. Coli			0		CFU/100mL		1	28-JAN-14
EC-WT	Water							
Batch	R2781219							
WG1822598-2 CVS								
Conductivity			99.1		%		90-110	28-JAN-14
WG1822598-3 DUP		L1415234-1						
Conductivity		567	566		umhos/cm	0.2	10	28-JAN-14
WG1822598-1 MB								
Conductivity			<3.0		umhos/cm		3	28-JAN-14
MET-D-MS-WT	Water							
Batch	R2781208							
WG1822896-1 CVS								
Aluminum (Al)-Dissolved			98.3		%		80-120	28-JAN-14
Antimony (Sb)-Dissolved			99.7		%		80-120	28-JAN-14
Arsenic (As)-Dissolved			97.7		%		80-120	28-JAN-14
Barium (Ba)-Dissolved			100.8		%		80-120	28-JAN-14
Beryllium (Be)-Dissolved			102.8		%		80-120	28-JAN-14
Bismuth (Bi)-Dissolved			99.4		%		80-120	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 3 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822896-1	CVS							
Boron (B)-Dissolved			104.0		%		80-120	28-JAN-14
Cadmium (Cd)-Dissolved			100.7		%		80-120	28-JAN-14
Calcium (Ca)-Dissolved			99.1		%		80-120	28-JAN-14
Chromium (Cr)-Dissolved			98.6		%		80-120	28-JAN-14
Cobalt (Co)-Dissolved			98.9		%		80-120	28-JAN-14
Copper (Cu)-Dissolved			100.6		%		80-120	28-JAN-14
Iron (Fe)-Dissolved			101.9		%		80-120	28-JAN-14
Lead (Pb)-Dissolved			99.4		%		80-120	28-JAN-14
Lithium (Li)-Dissolved			104.7		%		80-120	28-JAN-14
Magnesium (Mg)-Dissolved			94.0		%		80-120	28-JAN-14
Manganese (Mn)-Dissolved			100.2		%		80-120	28-JAN-14
Molybdenum (Mo)-Dissolved			95.3		%		80-120	28-JAN-14
Nickel (Ni)-Dissolved			98.4		%		80-120	28-JAN-14
Phosphorus (P)-Dissolved			94.5		%		80-120	28-JAN-14
Potassium (K)-Dissolved			96.0		%		80-120	28-JAN-14
Selenium (Se)-Dissolved			95.8		%		80-120	28-JAN-14
Silicon (Si)-Dissolved			93.0		%		80-120	28-JAN-14
Silver (Ag)-Dissolved			102.9		%		80-120	28-JAN-14
Sodium (Na)-Dissolved			92.4		%		80-120	28-JAN-14
Strontium (Sr)-Dissolved			100.4		%		80-120	28-JAN-14
Thallium (Tl)-Dissolved			99.8		%		80-120	28-JAN-14
Tin (Sn)-Dissolved			101.2		%		80-120	28-JAN-14
Titanium (Ti)-Dissolved			98.6		%		80-120	28-JAN-14
Tungsten (W)-Dissolved			100.2		%		80-120	28-JAN-14
Uranium (U)-Dissolved			100.1		%		80-120	28-JAN-14
Vanadium (V)-Dissolved			95.5		%		80-120	28-JAN-14
Zinc (Zn)-Dissolved			99.8		%		80-120	28-JAN-14
Zirconium (Zr)-Dissolved			98.0		%		80-120	28-JAN-14
WG1822896-3	CVS							
Aluminum (Al)-Dissolved			96.4		%		80-120	29-JAN-14
Antimony (Sb)-Dissolved			99.5		%		80-120	29-JAN-14
Arsenic (As)-Dissolved			96.6		%		80-120	29-JAN-14
Barium (Ba)-Dissolved			103.1		%		80-120	29-JAN-14
Beryllium (Be)-Dissolved			96.1		%		80-120	29-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 4 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822896-3	CVS							
Bismuth (Bi)-Dissolved			99.6		%		80-120	29-JAN-14
Boron (B)-Dissolved			96.9		%		80-120	29-JAN-14
Cadmium (Cd)-Dissolved			102.2		%		80-120	29-JAN-14
Calcium (Ca)-Dissolved			96.2		%		80-120	29-JAN-14
Chromium (Cr)-Dissolved			96.9		%		80-120	29-JAN-14
Cobalt (Co)-Dissolved			97.1		%		80-120	29-JAN-14
Copper (Cu)-Dissolved			98.8		%		80-120	29-JAN-14
Iron (Fe)-Dissolved			98.7		%		80-120	29-JAN-14
Lead (Pb)-Dissolved			98.9		%		80-120	29-JAN-14
Lithium (Li)-Dissolved			96.5		%		80-120	29-JAN-14
Magnesium (Mg)-Dissolved			95.8		%		80-120	29-JAN-14
Manganese (Mn)-Dissolved			96.4		%		80-120	29-JAN-14
Molybdenum (Mo)-Dissolved			95.9		%		80-120	29-JAN-14
Nickel (Ni)-Dissolved			98.6		%		80-120	29-JAN-14
Phosphorus (P)-Dissolved			96.4		%		80-120	29-JAN-14
Potassium (K)-Dissolved			92.2		%		80-120	29-JAN-14
Selenium (Se)-Dissolved			95.7		%		80-120	29-JAN-14
Silicon (Si)-Dissolved			95.7		%		80-120	29-JAN-14
Silver (Ag)-Dissolved			102.4		%		80-120	29-JAN-14
Sodium (Na)-Dissolved			95.7		%		80-120	29-JAN-14
Strontium (Sr)-Dissolved			100.2		%		80-120	29-JAN-14
Thallium (Tl)-Dissolved			98.3		%		80-120	29-JAN-14
Tin (Sn)-Dissolved			99.6		%		80-120	29-JAN-14
Titanium (Ti)-Dissolved			96.6		%		80-120	29-JAN-14
Tungsten (W)-Dissolved			99.2		%		80-120	29-JAN-14
Uranium (U)-Dissolved			99.8		%		80-120	29-JAN-14
Vanadium (V)-Dissolved			89.5		%		80-120	29-JAN-14
Zinc (Zn)-Dissolved			99.2		%		80-120	29-JAN-14
Zirconium (Zr)-Dissolved			96.5		%		80-120	29-JAN-14
WG1822664-4	DUP	WG1822664-3						
Aluminum (Al)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-JAN-14
Antimony (Sb)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Arsenic (As)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Barium (Ba)-Dissolved		0.0387	0.0377					



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 5 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822664-4	DUP	WG1822664-3						
Barium (Ba)-Dissolved		0.0387	0.0377		mg/L	2.5	20	28-JAN-14
Beryllium (Be)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Bismuth (Bi)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Boron (B)-Dissolved		0.013	0.013		mg/L	0.1	20	28-JAN-14
Cadmium (Cd)-Dissolved		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	28-JAN-14
Calcium (Ca)-Dissolved		75.5	75.4		mg/L	0.2	20	28-JAN-14
Chromium (Cr)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Cobalt (Co)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Copper (Cu)-Dissolved		0.0054	0.0052		mg/L	3.8	20	28-JAN-14
Iron (Fe)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-JAN-14
Lead (Pb)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Lithium (Li)-Dissolved		<0.10	<0.10	RPD-NA	mg/L	N/A	20	28-JAN-14
Magnesium (Mg)-Dissolved		25.3	25.5		mg/L	0.8	20	28-JAN-14
Manganese (Mn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Molybdenum (Mo)-Dissolved		0.00097	0.00099		mg/L	2.2	20	28-JAN-14
Nickel (Ni)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-JAN-14
Potassium (K)-Dissolved		<1.0	<1.0	RPD-NA	mg/L	N/A	20	28-JAN-14
Selenium (Se)-Dissolved		<0.00040	<0.00040	RPD-NA	mg/L	N/A	20	28-JAN-14
Silicon (Si)-Dissolved		7.9	7.9		mg/L	0.3	20	28-JAN-14
Silver (Ag)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	28-JAN-14
Sodium (Na)-Dissolved		11.9	11.8		mg/L	0.9	20	28-JAN-14
Strontium (Sr)-Dissolved		1.18	1.14		mg/L	2.9	20	28-JAN-14
Thallium (Tl)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	28-JAN-14
Tin (Sn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Titanium (Ti)-Dissolved		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	28-JAN-14
Tungsten (W)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-JAN-14
Uranium (U)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Zinc (Zn)-Dissolved		0.0125	0.0115		mg/L	8.2	20	28-JAN-14
Zirconium (Zr)-Dissolved		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	28-JAN-14
WG1822664-2	LCS							
Aluminum (Al)-Dissolved			100.9		%		80-120	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 7 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822664-1 MB								
Aluminum (Al)-Dissolved			<0.010		mg/L		0.01	28-JAN-14
Antimony (Sb)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Arsenic (As)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Barium (Ba)-Dissolved			<0.0020		mg/L		0.002	28-JAN-14
Beryllium (Be)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Bismuth (Bi)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Boron (B)-Dissolved			<0.010		mg/L		0.01	28-JAN-14
Cadmium (Cd)-Dissolved			<0.000090		mg/L		0.00009	28-JAN-14
Calcium (Ca)-Dissolved			<0.50		mg/L		0.5	28-JAN-14
Chromium (Cr)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Cobalt (Co)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Copper (Cu)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Iron (Fe)-Dissolved			<0.050		mg/L		0.05	28-JAN-14
Lead (Pb)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Lithium (Li)-Dissolved			<0.10		mg/L		0.1	28-JAN-14
Magnesium (Mg)-Dissolved			<0.50		mg/L		0.5	28-JAN-14
Manganese (Mn)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Molybdenum (Mo)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Nickel (Ni)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	28-JAN-14
Potassium (K)-Dissolved			<1.0		mg/L		1	28-JAN-14
Selenium (Se)-Dissolved			<0.00040		mg/L		0.0004	28-JAN-14
Silicon (Si)-Dissolved			<1.0		mg/L		1	28-JAN-14
Silver (Ag)-Dissolved			<0.00010		mg/L		0.0001	28-JAN-14
Sodium (Na)-Dissolved			<0.50		mg/L		0.5	28-JAN-14
Strontium (Sr)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Thallium (Tl)-Dissolved			<0.00030		mg/L		0.0003	28-JAN-14
Tin (Sn)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Titanium (Ti)-Dissolved			<0.0020		mg/L		0.002	28-JAN-14
Tungsten (W)-Dissolved			<0.010		mg/L		0.01	28-JAN-14
Uranium (U)-Dissolved			<0.0010		mg/L		0.001	28-JAN-14
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	28-JAN-14
Zinc (Zn)-Dissolved			<0.0030		mg/L		0.003	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 8 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822664-1	MB							
Zirconium (Zr)-Dissolved			<0.0040		mg/L		0.004	28-JAN-14
WG1822664-5	MS	WG1822664-3						
Aluminum (Al)-Dissolved			91.7		%		70-130	28-JAN-14
Antimony (Sb)-Dissolved			95.1		%		70-130	28-JAN-14
Arsenic (As)-Dissolved			121.1		%		70-130	28-JAN-14
Barium (Ba)-Dissolved			76.4		%		70-130	28-JAN-14
Beryllium (Be)-Dissolved			92.3		%		70-130	28-JAN-14
Bismuth (Bi)-Dissolved			85.3		%		70-130	28-JAN-14
Boron (B)-Dissolved			86.7		%		70-130	28-JAN-14
Cadmium (Cd)-Dissolved			92.8		%		70-130	28-JAN-14
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	28-JAN-14
Chromium (Cr)-Dissolved			89.9		%		70-130	28-JAN-14
Cobalt (Co)-Dissolved			87.8		%		70-130	28-JAN-14
Copper (Cu)-Dissolved			86.8		%		70-130	28-JAN-14
Iron (Fe)-Dissolved			96.6		%		70-130	28-JAN-14
Lead (Pb)-Dissolved			89.1		%		70-130	28-JAN-14
Lithium (Li)-Dissolved			88.0		%		70-130	28-JAN-14
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	28-JAN-14
Manganese (Mn)-Dissolved			92.1		%		70-130	28-JAN-14
Molybdenum (Mo)-Dissolved			87.3		%		70-130	28-JAN-14
Nickel (Ni)-Dissolved			88.1		%		70-130	28-JAN-14
Phosphorus (P)-Dissolved			115.9		%		70-130	28-JAN-14
Selenium (Se)-Dissolved			105.8		%		70-130	28-JAN-14
Silicon (Si)-Dissolved			N/A	MS-B	%		-	28-JAN-14
Silver (Ag)-Dissolved			89.2		%		70-130	28-JAN-14
Sodium (Na)-Dissolved			N/A	MS-B	%		-	28-JAN-14
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	28-JAN-14
Thallium (Tl)-Dissolved			88.4		%		70-130	28-JAN-14
Tin (Sn)-Dissolved			91.9		%		70-130	28-JAN-14
Titanium (Ti)-Dissolved			92.6		%		70-130	28-JAN-14
Tungsten (W)-Dissolved			93.4		%		70-130	28-JAN-14
Uranium (U)-Dissolved			93.1		%		70-130	28-JAN-14
Vanadium (V)-Dissolved			91.1		%		70-130	28-JAN-14
Zinc (Zn)-Dissolved			91.3		%		70-130	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 9 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-MS-WT		Water						
Batch	R2781208							
WG1822664-5	MS	WG1822664-3						
Zirconium (Zr)-Dissolved			84.0		%		70-130	28-JAN-14
MET-T-MS-WT		Water						
Batch	R2781211							
WG1822894-1	CVS							
Aluminum (Al)-Total			98.3		%		80-120	28-JAN-14
Antimony (Sb)-Total			99.7		%		80-120	28-JAN-14
Arsenic (As)-Total			97.7		%		80-120	28-JAN-14
Barium (Ba)-Total			100.8		%		80-120	28-JAN-14
Beryllium (Be)-Total			102.8		%		80-120	28-JAN-14
Bismuth (Bi)-Total			99.4		%		80-120	28-JAN-14
Boron (B)-Total			104.0		%		80-120	28-JAN-14
Cadmium (Cd)-Total			100.7		%		80-120	28-JAN-14
Calcium (Ca)-Total			99.1		%		80-120	28-JAN-14
Chromium (Cr)-Total			98.6		%		80-120	28-JAN-14
Cobalt (Co)-Total			98.9		%		80-120	28-JAN-14
Copper (Cu)-Total			100.6		%		80-120	28-JAN-14
Iron (Fe)-Total			101.9		%		80-120	28-JAN-14
Lead (Pb)-Total			99.4		%		80-120	28-JAN-14
Magnesium (Mg)-Total			94.0		%		80-120	28-JAN-14
Manganese (Mn)-Total			100.2		%		80-120	28-JAN-14
Molybdenum (Mo)-Total			95.3		%		80-120	28-JAN-14
Nickel (Ni)-Total			98.4		%		80-120	28-JAN-14
Phosphorus (P)-Total			94.5		%		80-120	28-JAN-14
Potassium (K)-Total			96.0		%		80-120	28-JAN-14
Selenium (Se)-Total			95.8		%		80-120	28-JAN-14
Silicon (Si)-Total			93.0		%		80-120	28-JAN-14
Silver (Ag)-Total			102.9		%		80-120	28-JAN-14
Sodium (Na)-Total			92.4		%		80-120	28-JAN-14
Strontium (Sr)-Total			100.4		%		80-120	28-JAN-14
Thallium (Tl)-Total			99.8		%		80-120	28-JAN-14
Tin (Sn)-Total			101.2		%		80-120	28-JAN-14
Titanium (Ti)-Total			98.6		%		80-120	28-JAN-14
Tungsten (W)-Total			100.2		%		80-120	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 10 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2781211							
WG1822894-1	CVS							
Uranium (U)-Total			100.1		%		80-120	28-JAN-14
Vanadium (V)-Total			95.5		%		80-120	28-JAN-14
Zinc (Zn)-Total			99.8		%		80-120	28-JAN-14
Zirconium (Zr)-Total			98.0		%		80-120	28-JAN-14
WG1822639-4	DUP	WG1822639-3						
Aluminum (Al)-Total		0.568	0.552		mg/L	2.9	20	28-JAN-14
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Barium (Ba)-Total		0.0519	0.0510		mg/L	1.6	20	28-JAN-14
Beryllium (Be)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Boron (B)-Total		0.049	0.049		mg/L	0.6	20	28-JAN-14
Cadmium (Cd)-Total		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	28-JAN-14
Calcium (Ca)-Total		94.1	90.9		mg/L	3.5	20	28-JAN-14
Chromium (Cr)-Total		0.00110	0.00106		mg/L	3.8	20	28-JAN-14
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Copper (Cu)-Total		0.0018	0.0015		mg/L	19	20	28-JAN-14
Iron (Fe)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	28-JAN-14
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	28-JAN-14
Magnesium (Mg)-Total		26.8	26.2		mg/L	2.2	20	28-JAN-14
Manganese (Mn)-Total		0.0023	0.0021		mg/L	6.3	20	28-JAN-14
Molybdenum (Mo)-Total		0.00253	0.00249		mg/L	1.7	20	28-JAN-14
Nickel (Ni)-Total		0.0018	0.0017		mg/L	4.5	20	28-JAN-14
Phosphorus (P)-Total		0.841	0.819		mg/L	2.6	20	28-JAN-14
Potassium (K)-Total		4.3	4.2		mg/L	2.4	20	28-JAN-14
Selenium (Se)-Total		0.00066	0.00059		mg/L	10	20	28-JAN-14
Silicon (Si)-Total		3.3	3.2		mg/L	2.9	20	28-JAN-14
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	28-JAN-14
Sodium (Na)-Total		26.1	25.7		mg/L	1.4	20	28-JAN-14
Strontium (Sr)-Total		0.374	0.364		mg/L	2.9	20	28-JAN-14
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	28-JAN-14
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 11 of 17

Client:

LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Contact:

CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2781211							
WG1822639-4		DUP	WG1822639-3					
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-JAN-14
Uranium (U)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	28-JAN-14
Vanadium (V)-Total		0.00129	0.00126		mg/L	2.4	20	28-JAN-14
Zinc (Zn)-Total		0.0244	0.0242		mg/L	0.8	20	28-JAN-14
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	28-JAN-14
WG1822639-2		LCS						
Aluminum (Al)-Total			108.8		%		80-120	28-JAN-14
Antimony (Sb)-Total			103.0		%		80-120	28-JAN-14
Arsenic (As)-Total			100.6		%		80-120	28-JAN-14
Barium (Ba)-Total			103.8		%		80-120	28-JAN-14
Beryllium (Be)-Total			104.1		%		80-120	28-JAN-14
Bismuth (Bi)-Total			101.7		%		80-120	28-JAN-14
Boron (B)-Total			101.4		%		80-120	28-JAN-14
Cadmium (Cd)-Total			102.3		%		80-120	28-JAN-14
Calcium (Ca)-Total			102.5		%		80-120	28-JAN-14
Chromium (Cr)-Total			101.3		%		80-120	28-JAN-14
Cobalt (Co)-Total			100.0		%		80-120	28-JAN-14
Copper (Cu)-Total			101.0		%		80-120	28-JAN-14
Iron (Fe)-Total			106.2		%		80-120	28-JAN-14
Lead (Pb)-Total			101.4		%		80-120	28-JAN-14
Magnesium (Mg)-Total			95.2		%		80-120	28-JAN-14
Manganese (Mn)-Total			103.8		%		80-120	28-JAN-14
Molybdenum (Mo)-Total			97.1		%		80-120	28-JAN-14
Nickel (Ni)-Total			99.1		%		80-120	28-JAN-14
Phosphorus (P)-Total			111.9		%		80-120	28-JAN-14
Potassium (K)-Total			98.8		%		80-120	28-JAN-14
Selenium (Se)-Total			98.8		%		80-120	28-JAN-14
Silicon (Si)-Total			103.7		%		80-120	28-JAN-14
Silver (Ag)-Total			103.2		%		80-120	28-JAN-14
Sodium (Na)-Total			95.8		%		80-120	28-JAN-14
Strontium (Sr)-Total			96.3		%		80-120	28-JAN-14
Thallium (Tl)-Total			100.7		%		80-120	28-JAN-14
Tin (Sn)-Total			102.7		%		80-120	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 12 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2781211							
WG1822639-2	LCS							
Titanium (Ti)-Total			102.2		%		80-120	28-JAN-14
Tungsten (W)-Total			102.7		%		80-120	28-JAN-14
Uranium (U)-Total			104.3		%		80-120	28-JAN-14
Vanadium (V)-Total			102.1		%		80-120	28-JAN-14
Zinc (Zn)-Total			105.7		%		80-120	28-JAN-14
Zirconium (Zr)-Total			91.8		%		80-120	28-JAN-14
WG1822639-1	MB							
Aluminum (Al)-Total			<0.010		mg/L		0.01	28-JAN-14
Antimony (Sb)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Arsenic (As)-Total			<0.0010		mg/L		0.001	28-JAN-14
Barium (Ba)-Total			<0.0020		mg/L		0.002	28-JAN-14
Beryllium (Be)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	28-JAN-14
Boron (B)-Total			<0.010		mg/L		0.01	28-JAN-14
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	28-JAN-14
Calcium (Ca)-Total			<0.50		mg/L		0.5	28-JAN-14
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Copper (Cu)-Total			<0.0010		mg/L		0.001	28-JAN-14
Iron (Fe)-Total			<0.050		mg/L		0.05	28-JAN-14
Lead (Pb)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Magnesium (Mg)-Total			<0.50		mg/L		0.5	28-JAN-14
Manganese (Mn)-Total			<0.0010		mg/L		0.001	28-JAN-14
Molybdenum (Mo)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Nickel (Ni)-Total			<0.0010		mg/L		0.001	28-JAN-14
Phosphorus (P)-Total			<0.050		mg/L		0.05	28-JAN-14
Potassium (K)-Total			<1.0		mg/L		1	28-JAN-14
Selenium (Se)-Total			<0.00040		mg/L		0.0004	28-JAN-14
Silicon (Si)-Total			<1.0		mg/L		1	28-JAN-14
Silver (Ag)-Total			<0.00010		mg/L		0.0001	28-JAN-14
Sodium (Na)-Total			<0.50		mg/L		0.5	28-JAN-14
Strontium (Sr)-Total			<0.0010		mg/L		0.001	28-JAN-14
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	28-JAN-14
Tin (Sn)-Total			<0.0010		mg/L		0.001	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 13 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT	Water							
Batch	R2781211							
WG1822639-1 MB								
Titanium (Ti)-Total			<0.0020		mg/L		0.002	28-JAN-14
Tungsten (W)-Total			<0.010		mg/L		0.01	28-JAN-14
Uranium (U)-Total			<0.0010		mg/L		0.001	28-JAN-14
Vanadium (V)-Total			<0.00050		mg/L		0.0005	28-JAN-14
Zinc (Zn)-Total			<0.0060		mg/L		0.006	28-JAN-14
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	28-JAN-14
WG1822639-5 MS		WG1822639-3						
Aluminum (Al)-Total			N/A	MS-B	%		-	28-JAN-14
Antimony (Sb)-Total			102.7		%		70-130	28-JAN-14
Arsenic (As)-Total			105.8		%		70-130	28-JAN-14
Barium (Ba)-Total			99.3		%		70-130	28-JAN-14
Beryllium (Be)-Total			97.2		%		70-130	28-JAN-14
Bismuth (Bi)-Total			97.8		%		70-130	28-JAN-14
Boron (B)-Total			99.3		%		70-130	28-JAN-14
Cadmium (Cd)-Total			100.3		%		70-130	28-JAN-14
Calcium (Ca)-Total			N/A	MS-B	%		-	28-JAN-14
Chromium (Cr)-Total			96.9		%		70-130	28-JAN-14
Cobalt (Co)-Total			103.6		%		70-130	28-JAN-14
Copper (Cu)-Total			100.2		%		70-130	28-JAN-14
Iron (Fe)-Total			104.1		%		70-130	28-JAN-14
Lead (Pb)-Total			98.9		%		70-130	28-JAN-14
Magnesium (Mg)-Total			N/A	MS-B	%		-	28-JAN-14
Manganese (Mn)-Total			100.4		%		70-130	28-JAN-14
Molybdenum (Mo)-Total			99.5		%		70-130	28-JAN-14
Nickel (Ni)-Total			102.2		%		70-130	28-JAN-14
Phosphorus (P)-Total			112.8		%		70-130	28-JAN-14
Potassium (K)-Total			N/A	MS-B	%		-	28-JAN-14
Selenium (Se)-Total			105.1		%		70-130	28-JAN-14
Silicon (Si)-Total			N/A	MS-B	%		-	28-JAN-14
Silver (Ag)-Total			98.8		%		70-130	28-JAN-14
Sodium (Na)-Total			N/A	MS-B	%		-	28-JAN-14
Strontium (Sr)-Total			N/A	MS-B	%		-	28-JAN-14
Thallium (Tl)-Total			98.8		%		70-130	28-JAN-14
Tin (Sn)-Total			92.2		%		70-130	28-JAN-14



Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 14 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-MS-WT		Water						
Batch	R2781211							
WG1822639-5 MS		WG1822639-3						
Titanium (Ti)-Total			102.2		%		70-130	28-JAN-14
Tungsten (W)-Total			103.5		%		70-130	28-JAN-14
Uranium (U)-Total			103.6		%		70-130	28-JAN-14
Vanadium (V)-Total			99.1		%		70-130	28-JAN-14
Zinc (Zn)-Total			106.5		%		70-130	28-JAN-14
Zirconium (Zr)-Total			73.7		%		70-130	28-JAN-14
NH3-WT		Water						
Batch	R2781214							
WG1822638-2 CVS								
Ammonia, Total (as N)			96.2		%		85-115	28-JAN-14
WG1822638-3 DUP		L1415630-1						
Ammonia, Total (as N)		0.064	0.078	J	mg/L	0.014	0.1	28-JAN-14
WG1822638-1 MB								
Ammonia, Total (as N)			<0.050		mg/L		0.05	28-JAN-14
WG1822638-4 MS		L1415630-1						
Ammonia, Total (as N)			82.7		%		75-125	28-JAN-14
P-ORTHO-LOW-WT		Water						
Batch	R2782387							
WG1823639-3 DUP		L1416320-1						
Phosphate-P (ortho)		0.0223	0.0231		mg/L	3.2	20	29-JAN-14
WG1823639-5 DUP		L1416622-4						
Phosphate-P (ortho)		0.0120	0.0123		mg/L	2.6	20	29-JAN-14
WG1823639-2 LCS								
Phosphate-P (ortho)			104.3		%		80-120	29-JAN-14
WG1823639-1 MB								
Phosphate-P (ortho)			<0.0030		mg/L		0.003	29-JAN-14
WG1823639-4 MS		L1416320-1						
Phosphate-P (ortho)			90.0		%		70-130	29-JAN-14
WG1823639-6 MS		L1416622-4						
Phosphate-P (ortho)			74.5		%		70-130	29-JAN-14
PH-ALK-WT		Water						
Batch	R2781232							
WG1822597-2 DUP		WG1822597-3						
pH		7.74	7.74	J	pH units	0.00	0.2	27-JAN-14
WG1822597-1 LCS								
pH			6.99		pH units		6.9-7.1	27-JAN-14

Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Page 15 of 17

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
REDOX-POTENTIAL-WT								
Water								
Batch	R2782817							
WG1824234-1	DUP	L1414724-1						
Redox Potential		248	260		mV	4.7	25	30-JAN-14
SOLIDS-TDS-WT								
Water								
Batch	R2782182							
WG1823143-3	DUP	L1415334-2						
Total Dissolved Solids		410	400		mg/L	2.5	20	29-JAN-14
WG1823143-2	LCS							
Total Dissolved Solids			101.2		%		85-115	29-JAN-14
WG1823143-1	MB							
Total Dissolved Solids			<20		mg/L		20	29-JAN-14
TC-MF-WT								
Water								
Batch	R2781346							
WG1822513-3	DUP	L1415630-1						
Total Coliforms		0	0		CFU/100mL	0.0	50	28-JAN-14
WG1822513-1	MB							
Total Coliforms			0		CFU/100mL		1	28-JAN-14
WG1822513-2	MB							
Total Coliforms			0		CFU/100mL		1	28-JAN-14
TCB-MF-WT								
Water								
Batch	R2781346							
WG1822513-3	DUP	L1415630-1						
Total Coliform Background		10	6	G	CFU/100mL	50	50	28-JAN-14
COMMENTS: plate 1 = 0 Total Coliform and 10 background dup = 0 Total Coliform and 6 background PH								
WG1822513-1	MB							
Total Coliform Background			0		CFU/100mL		1	28-JAN-14
WG1822513-2	MB							
Total Coliform Background			0		CFU/100mL		1	28-JAN-14
TURBIDITY-WT								
Water								
Batch	R2781265							
WG1822679-4	CVS							
Turbidity			95.0		%		85-115	28-JAN-14
WG1822679-2	DUP	L1415334-1						
Turbidity		0.27	0.26		NTU	3.8	20	28-JAN-14
WG1822679-1	MB							
Turbidity			<0.10		NTU		0.1	28-JAN-14

Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 16 of 17

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1415630

Report Date: 30-JAN-14

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Page 17 of 17

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Redox Potential	1	27-JAN-14 10:30	30-JAN-14 13:53	0.25	75	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1415630 were received on 27-JAN-14 11:20.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

146633

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878



CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date
required

Service requested

5 day (regular)

3-4 day (25%)

2 day TAT (50%)

Next day TAT (100%)

Same day TAT (200%)

COMPANY NAME

LUM

CRITERIA

Criteria on report YES ☒ NO ☐

OFFICE

KITCHENER

Reg 153/04 ☐

Reg 511/09 ☐

Table 1 2 3 4 5 6 7 8 9

PROJECT MANAGER

CHRIS HELMUTER

TCLP

MISA

PWQO

ODWS

OTHER ☒

PROJECT #

0-0002619-0-01-300

PHONE

(519) 741-1313

FAX

ACCOUNT #

QUOTATION #

PO #

REPORT FORMAT/DISTRIBUTION

EMAIL

FAX

BOTH

SELECT: PDF

DIGITAL

BOTH ☒

EMAIL 1

CHRIS.HEL MUTER@LUM-CA

EMAIL 2

SAMPLING INFORMATION

Sample Date/Time

TYPE

MATRIX

Date (dd-mm-yy)

Time (24hr)
(hh:mm)

COMP

GRAB

WATER

SOIL

OTHER

SAMPLE DESCRIPTION TO APPEAR ON REPORT

27-01-14

10:30

☒

☒

720 ALBANY

NUMBER OF CONTAINERS

POTABILITY PBL.



L1415630-COFC

PLEASE INDICATE FILTERED,

PRESERVED OR BOTH

<---- (F, P, F/P)

SUBMISSION #:

C141 5630

ENTERED BY

DATE/TIME ENTERED:

27 JAN 14

BIN #:

267

COMMENTS

LAB ID

1

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)

SAMPLE CONDITION

Are any samples taken from a regulated DW System?

Yes ☐ No ☒

If yes, an authorized drinking water COC MUST be used for this submission.

Is the water sampled intended to be potable for human consumption?

Yes ☒ No ☐

FROZEN

☐

COLD

☒

COOLING INITIATED

☐

AMBIENT

☐

MEAN

TEMP

5.2

SAMPLED BY:

J. S. GLOVER

JAN 27 14

DATE & TIME

RECEIVED BY:

DATE & TIME

RELINQUISHED BY:

[Signature]

JAN 27 14

DATE & TIME

RECEIVED AT LAB BY:

DATE & TIME

27 JAN 14 11:20

OBSERVATIONS

Yes ☐ No ☐

If yes add SIF

INIT

PH

Notes

1. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.

3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.



LVM INC.
ATTN: CHRIS HELMER
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5

Date Received: 15-AUG-14
Report Date: 22-AUG-14 14:44 (MT)
Version: FINAL

Client Phone: 519-741-1313

Certificate of Analysis

Lab Work Order #: L1503234
Project P.O. #: PENDING
Job Reference: 160-P-0002619-0-01-300-01
C of C Numbers: 14-397824
Legal Site Desc:

Nancy Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1503234-1 BH-02-13 Sampled By: J. STROEDER on 15-AUG-14 Matrix: WATER Anions and Nutrients Chloride (Cl) Total Metals Sodium (Na)-Total Dissolved Metals Dissolved Metals Filtration Location Sodium (Na)-Dissolved								
		60.6		1.0	mg/L		19-AUG-14	R2924046
		82.5	DLM	5.0	mg/L	17-AUG-14	18-AUG-14	R2922712
		LAB					17-AUG-14	R2921331
		80.0		0.50	mg/L	17-AUG-14	18-AUG-14	R2922681
L1503234-2 BH-04-13 Sampled By: J. STROEDER on 15-AUG-14 Matrix: WATER Anions and Nutrients Chloride (Cl) Total Metals Sodium (Na)-Total Dissolved Metals Dissolved Metals Filtration Location Sodium (Na)-Dissolved								
		288		1.0	mg/L		19-AUG-14	R2924046
		90.3	DLM	5.0	mg/L	17-AUG-14	18-AUG-14	R2922712
		LAB					17-AUG-14	R2921331
		92.8		0.50	mg/L	17-AUG-14	18-AUG-14	R2922681
L1503234-3 BH-05-13 Sampled By: J. STROEDER on 15-AUG-14 Matrix: WATER Anions and Nutrients Chloride (Cl) Total Metals Sodium (Na)-Total Dissolved Metals Dissolved Metals Filtration Location Sodium (Na)-Dissolved								
		55.2		1.0	mg/L		19-AUG-14	R2924046
		24.2	DLM	5.0	mg/L	17-AUG-14	18-AUG-14	R2922712
		LAB					17-AUG-14	R2921331
		23.6		0.50	mg/L	17-AUG-14	18-AUG-14	R2922681
L1503234-4 BH-06B-13 Sampled By: J. STROEDER on 15-AUG-14 Matrix: WATER Anions and Nutrients Chloride (Cl) Total Metals Sodium (Na)-Total Dissolved Metals Dissolved Metals Filtration Location Sodium (Na)-Dissolved								
		15.7		1.0	mg/L		19-AUG-14	R2924046
		<5.0	DLM	5.0	mg/L	17-AUG-14	18-AUG-14	R2922712
		LAB					17-AUG-14	R2921331
		4.43		0.50	mg/L	17-AUG-14	18-AUG-14	R2922681

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Sodium (Na)-Total	DLM	L1503234-1, -2, -3, -4
Matrix Spike	Sodium (Na)-Total	MS-B	L1503234-1, -2, -3, -4

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL-R511-WT	Water	Chloride-O.Reg 153/04 (July 2011)	EPA 300.0 (IC)
Aqueous samples are analyzed directly or may be filtered in the laboratory prior to analysis using ion chromatography.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-MS-WT	Water	Dissolved Metals in Water by ICPMS	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-T-MS-WT	Water	Total Metals in Water by ICPMS	EPA 200.8
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

14-397824

GLOSSARY OF REPORT TERMS
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1503234

Report Date: 22-AUG-14

Page 1 of 2

Client: LVM INC.
353 BRIDGE ST. E.
KITCHENER ON N2K 2Y5
Contact: CHRIS HELMER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-R511-WT		Water						
Batch	R2924046							
WG1933716-2	LCS							
Chloride (Cl)			100.8		%		85-115	19-AUG-14
WG1933716-1	MB							
Chloride (Cl)			<1.0		mg/L		1	19-AUG-14
WG1933716-5	MS	WG1933716-3						
Chloride (Cl)			94.2		%		75-125	19-AUG-14
MET-D-MS-WT		Water						
Batch	R2922681							
WG1932833-1	CVS							
Sodium (Na)-Dissolved			95.8		%		80-120	18-AUG-14
WG1932833-3	CVS							
Sodium (Na)-Dissolved			91.7		%		80-120	19-AUG-14
WG1932765-2	LCS							
Sodium (Na)-Dissolved			91.4		%		80-120	18-AUG-14
WG1932765-1	MB							
Sodium (Na)-Dissolved			<0.50		mg/L		0.5	18-AUG-14
WG1932765-5	MS	WG1932765-3						
Sodium (Na)-Dissolved			85.3		%		70-130	18-AUG-14
MET-T-MS-WT		Water						
Batch	R2922712							
WG1933118-1	CVS							
Sodium (Na)-Total			95.8		%		80-120	18-AUG-14
WG1933118-3	CVS							
Sodium (Na)-Total			91.7		%		80-120	19-AUG-14
WG1933118-4	CVS							
Sodium (Na)-Total			92.8		%		80-120	20-AUG-14
WG1932757-2	LCS							
Sodium (Na)-Total			95.2		%		80-120	18-AUG-14
WG1932757-1	MB							
Sodium (Na)-Total			<0.50		mg/L		0.5	18-AUG-14
WG1932757-5	MS	WG1932757-3						
Sodium (Na)-Total			N/A	MS-B	%		-	18-AUG-14

Quality Control Report

Workorder: L1503234

Report Date: 22-AUG-14

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

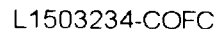
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Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Canada Toll Free: 1 800 668 9878



Page 1 of 1

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-EM-0326a v08 Front03 October 20

Well Computer Print Out Data as of December 13 2013

Page: 1 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WILMOT TOWNSHIP BLOC B 02(001)	17 531174 4812983 W	1977/10 5469	30	FR 0030	012 / 025 005 / 1:0	DO		6504692 () BRWN CLAY SNDY 0018 GREY CLAY 0025 GRVL 0030
WATERLOO CITY GcT(028)	17 531814 4814294 W	2007/11 6865	00	UK 0121	013 / 059 010 / 1:0	DO		7102456 (Z69076) A057289 BRWN CLAY SNDY 0005 BRWN CLAY STNS STNS 0008 BRWN SAND GRVL SILT 0015 BRWN CLAY SLTY STNS 0062 GREY CLAY SLTY 0102 BRWN SILT 0107 BRWN SAND GRVL SILT 0122
WATERLOO CITY (030)	17 532653 4813571 W	2008/08 1737						7120999 (Z92381) A
WATERLOO CITY ()	17 531865 4814009 W	2006/10 1737	02	FR 0035		NU	30 5	7042099 (Z54462) A044530 BRWN GRVL 0006 BRWN CLAY SILT SOFT 0015 GREY CLAY SILT SOFT 0023 GREY CLAY TILL HARD 0035
WATERLOO CITY ()	17 531945 4814049 W	2006/10 1737	10	FR 0071 FR 0091		MN	84 -13 91	7042047 (Z54461) A044532 BRWN SAND CGVL 0008 BRWN CLAY SNDY SOFT 0017 GREY CLAY SILT SOFT 0052 GREY CLAY HARD 0067 BRWN SAND CGVL 0087 BRWN GRVL STNS 0092
WATERLOO CITY ()	17 532162 4813840 W	2009/09 7238	02				20 10	7133502 (Z104427) A090705 BRWN SILT CLAY 0015 GREY SILT WBRG 0030
WATERLOO CITY ()	17 532006 4813758 W	2009/09 7238	02				20 10	7133501 (Z104426) A090736 BRWN SILT CLAY GRVL 0015 GREY SILT WBRG 0030
WATERLOO CITY ()	17 532867 4813307 W	2008/07 6127	02					7109887 (Z87788) _NO_TAG A
WATERLOO CITY ()	17 532867 4813308 W	2008/07 6127	02					7109873 (Z87789) _NO_TAG A
WATERLOO CITY (WATER GCT (028)	17 532833 4814825 L	2001/06 1737	06	FR 0078 FR 0085	013 / 050 025 / 4:30	DO	82 3	6508951 (218137) BRWN CLAY HARD 0025 GREY CLAY HARD 0047 GREY FSND SILT 0058 GREY MSND 0080 GREY SAND CGVL 0085

Well Computer Print Out Data as of December 13 2013

Page: 2 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (028))	17 532585 4814123 W	2010/03 7440	02	0008			17 5	7168639 (Z125631) A108847 BRWN LOAM 0004 BRWN CLAY SILT SOFT 0008 BRWN SILT CLAY WBRG 0008 BRWN SILT SOFT 0011 BRWN SILT CLAY WBRG 0022
WATERLOO CITY (WATER GCT (028))	17 533060 4814339 W	2010/03 7440	02	0010			10 5	7168640 (Z132930) A108848 BRWN LOAM 0003 BRWN SILT CLAY 0008 BRWN SAND SILT WBRG 0010 BRWN SILT SAND WBRG 0017
WATERLOO CITY (WATER GCT (028))	17 532488 4814683 W	2013/08 7154	06	FR 0097	012 / 047 010 / 1:0	D0	97 4	7210180 (Z169279) A133152 BRWN CLAY STNS FILL 0013 GREY CLAY SILT 0069 GREY FSND 0095 GREY GRVL 0101
WATERLOO CITY (WATER GCT (028))	17 532183 4814781 W	2013/10 2663						7211055 (Z172158) A148668 P
WATERLOO CITY (WATER GCT (028))	17 532289 4814498 W	1954/09 4725	05 05	FR 0263	002 / 011 050 / 2:0	D0		6501283 () PRDG 0010 QSND 0122 BLUE CLAY STNS 0155 GRVL 0163 RED CLAY MSND 0220 HPAN 0240 SHLE 0258 ROCK 0263
WATERLOO CITY (WATER GCT (028))	17 532389 4814648 W	1965/09 4819	05	FR 0251	040 / 046 015 / 9:0	D0		6501285 () MSND CLAY 0125 HPAN 0141 CLAY MSND 0210 HPAN 0249 GRVL 0251
WATERLOO CITY (WATER GCT (028))	17 532214 4814473 W	1967/07 2519	30	FR 0009	009 / 018 006 / 1:0	D0		6501286 () LOAM 0001 BRWN CLAY MSND 0007 BRWN CSND 0018
WATERLOO CITY (WATER GCT (028))	17 532234 4814573 W	1971/05 3413	30	FR 0025	025 / 025 010 / 2:0	D0		6503409 () BRWN MSND 0025 CSND 0032
WATERLOO CITY (WATER GCT (028))	17 532364 4814623 W	1971/10 3413	30	FR 0020	020 / 020 010 / 4:0	D0		6503545 () BRWN CLAY 0006 BLUE CLAY 0015 GRVL 0020 BLUE CLAY 0028
WATERLOO CITY (WATER GCT (028))	17 533047 4814655 W	2010/03 7440	02	0012			14 5	7168637 (Z125623) A105983 BRWN SAND SILT 0001 BRWN SAND GRVL 0006 BRWN SILT SAND 0007 BRWN SAND WBRG 0020 GREY SILT CLAY 0022
WATERLOO CITY (WATER GCT (028))	17 532654 4814388 W	2010/03 7440	02	0006			5 5	7168636 (Z125616) A105932 BRWN LOAM 0001 BRWN SAND 0006 BRWN SILT CLAY 0006 BRWN SAND SILT LOOS 0012

Well Computer Print Out Data as of December 13 2013

Page: 3 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (028))	17 532637 4814719 W	2010/03 7440	02	0005 0066			80 10	7168635 (Z132931) A094216 BRWN LOAM CLAY SILT 0002 BRWN CLAY SILT GRVL 0005 BRWN CLAY SILT GRVL 0013 BRWN SAND SILT WBRG 0019 GREY SILT SAND 0065 SAND GRVL 0071 SILT GRVL SAND 0090
WATERLOO CITY (WATER GCT (028))	17 532634 4814715 W	2010/03 7440	02	0005			10 5	7168634 (Z125632) A108845 BRWN LOAM CLAY SILT 0002 BRWN CLAY SILT GRVL 0005 BRWN CLAY SILT GRVL 0013 BRWN SAND SILT WBRG 0015
WATERLOO CITY (WATER GCT (028))	17 532274 4814541 W	2010/03 7440	02	0004 0118			120 10	7168633 (Z125624) A094203 BRWN ---- 0003 BRWN SILT SAND CLAY 0005 BRWN SILT 0028 BRWN SAND SILT 0128 BRWN SAND 0130
WATERLOO CITY (WATER GCT (028))	17 532271 4814538 W	2010/03 7440	02	0004			10 5	7168632 (Z125633) A108846 BRWN ---- 0003 BRWN SILT SAND CLAY 0005 BRWN SILT WBRG 0015
WATERLOO CITY (WATER GCT (028))	17 532368 4814834 W	2010/03 7440	02	0009			9 6	7168629 (Z125627) A108842 BRWN LOAM 0000 BRWN CLAY SILT 0009 BRWN SILT SAND WBRG 0015
WATERLOO CITY (WATER GCT (028))	17 531967 4814796 W	2010/03 7440	02	0005			10 5	7168624 (Z125630) A108841 BRWN LOAM SAND 0001 BRWN SILT SAND 0002 GREY CLAY SILT 0005 GREY SAND SILT WBRG 0010 BRWN SILT SAND WBRG 0016 BRWN SAND WBRG 0017
WATERLOO CITY (WATER GCT (028))	17 532587 4814126 W	2010/05 7440	02	0008 0071			74 10	7168638 (Z132932) A094204 BRWN LOAM 0004 BRWN CLAY SILT 0011 BRWN SILT SAND 0039 BRWN SAND 0071 BRWN SAND GRVL 0083 GREY SAND SILT 0086
WATERLOO CITY (WATER GCT (028))	17 532274 4814583 W	1980/09 2222	30	FR 0016	016 / 036 003 / :0	D0		6505111 (BRWN CLAY SNDY 0008 BRWN SAND 0012 BRWN MARL SAND 0024 GREY MARL SAND 0036
WATERLOO CITY (WATER GCT (028))	17 532482 4814085 W	1987/07 1737	05	FR 0071	-010 / 008 020 / 2:30	D0	71 3	6506089 (BRWN GRVL FILL SOFT 0002 BLCK LOAM SOFT 0004 GREY SAND CLAY SOFT 0048 GREY FSND SOFT 0070 GREY MSND SOFT 0074

Well Computer Print Out Data as of December 13 2013

Page: 4 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (028))	17 532504 4814699 W	1999/10 1737	06	FR 0079	005 / 025 015 / 3:0	D0	79 3	6508626 (209347) BRWN FILL 0002 BRWN CLAY SOFT 0009 GREY CLAY HARD 0074 GREY CGVL STNS 0085
WATERLOO CITY (WATER GCT (028))	17 532329 4814596 W	1999/10 1737	06	FR 0082	020 / 040 015 / 2:30	D0	92 3	6508627 (209348) BRWN FILL GRVL 0002 BRWN CLAY SAND SOFT 0014 BRWN MSND 0022 GREY CLAY HARD 0053 GREY SAND SILT SOFT 0082 GREY MSND 0095
WATERLOO CITY (WATER GCT (028))	17 532266 4814514 W	2000/01 1737	06	FR 0077	009 / 025 010 / 2:0	D0	77 3	6508730 (213807) BRWN CLAY SOFT 0013 BRWN CSND 0021 BRWN FSND SILT 0052 BRWN MSND 0080
WATERLOO CITY (WATER GCT (028))	17 532833 4814825 L	2001/08 1737	06	FR 0078	007 / 030 010 / 2:0	D0	75 3	6508950 (233915) BRWN SAND CLAY SILT 0047 GREY CLAY SOFT 0068 BRWN SAND CGVL 0080
WATERLOO CITY (WATER GCT (043))	17 533074 4813063 W	1979/01 4854		UK 0012	008 / / :0	D0		6504868 () CLAY 0009 SAND 0012 GREY CLAY 0027 BLUE CLAY 0034
WATERLOO CITY (WATER GCT (044))	17 531712 4813473 W	2004/04 7154	06	FR 0107 UK 0110	002 / 008 008 / 2:0	D0	107 3	6509661 (Z06857) A006808 BRWN SAND 0017 GREY CLAY SLTY 0080 GREY CLAY SOFT 0102 GREY SAND GRVL 0110
WATERLOO CITY (WATER GCT (044))	17 532547 4813619 W	2004/07 1737						6509801 (Z11619) A
WATERLOO CITY (WATER GCT (044))	17 532672 4813651 W	2004/08 6607	01	FR 0017			26 4	6509833 (Z17083) A011801 BRWN SILT 0001 BRWN SAND SILT 0024 BRWN SAND SILT 0030
WATERLOO CITY (WATER GCT (044))	17 532663 4813581 W	2013/05 7385						7203121 (Z162878) P
WATERLOO CITY (WATER GCT (044))	17 532514 4813573 W	1962/06 3533	05	FR 0054	016 / 026 020 / 9:0	D0	61 4	6501396 () LOAM 0002 MSND 0003 CLAY 0023 HPAN 0054 MSND 0068
WATERLOO CITY (WATER GCT (044))	17 532769 4813298 W	1962/12 3533	05	FR 0081	039 / 046 015 / 10:0	D0	85 8	6501397 () MSND CLAY 0075 HPAN 0081 MSND 0095
WATERLOO CITY (WATER GCT (044))	17 532689 4813523 W	1965/10 3128	05	FR 0070	020 / 071 010 / 4:0	D0	62 13	6501398 () MSND CLAY 0030 MSND 0065 MSND CLAY 0070 MSND 0075

Well Computer Print Out Data as of December 13 2013

Page: 5 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (044))	17 531194 4813213 W	1968/04 2519	30	FR 0022	022 / 028 / 1:0	DO ST		6502880 () LOAM 0001 BRWN CLAY MSND 0011 BRWN CLAY STNS 0015 BRWN MSND 0024 BRWN CSND 0030
WATERLOO CITY (WATER GCT (044))	17 531614 4813443 W	1968/02 2519	30 24	FR 0030 FR 0010	006 / 025 005 / 1:0	DO		6502881 () LOAM 0001 BRWN CLAY MSND 0006 BRWN MSND 0010 BLUE MSND 0017 GRVL 0030
WATERLOO CITY (WATER GCT (044))	17 532814 4813463 W	1968/09 4819	05	FR 0208	070 / 076 015 / 8:0	DO	208 5	6502944 () LOAM 0003 MSND CLAY 0070 CLAY 0091 MSND 0092 MSND CLAY 0156 HPAN 0208 MSND GRVL 0213 HPAN 0214
WATERLOO CITY (WATER GCT (044))	17 532864 4813173 W	1973/01 5469	05	FR 0175	065 / 077 007 / 2:0	DO		6503753 () PRDG 0005 BRWN SAND CLAY 0079 BRWN SILT SAND CLAY 0175 BRWN SAND GRVL 0176
WATERLOO CITY (WATER GCT (044))	17 531314 4812903 W	1977/03 3518	06	FR 0128	030 / 045 015 / 3:0	DO		6504931 () BRWN LOAM 0002 SAND CLAY 0039 HPAN CLAY 0043 QSDND 0046 HPAN CLAY 0128 GRVL 0132
WATERLOO CITY (WATER GCT (044))	17 531606 4813323 W	1985/01 3030	36	FR 0005	005 / / :0	DO		6505651 () BRWN LOAM 0001 BRWN FSND 0010 GREY FSND 0015
WATERLOO CITY (WATER GCT (044))	17 532341 4813777 W	1985/09 2336	06	FR 0067	006 / 028 012 / 1:0	DO		6505698 () BRWN CLAY 0015 BRWN CLAY SAND 0025 BRWN CLAY SAND GRVL 0030 GREY CLAY SAND 0066 GREY CGVL 0067
WATERLOO CITY (WATER GCT (044))	17 531772 4813273 W	1987/09 3518	06 06	FR 0083	-001 / 030 015 / 1:0	DO		6506201 () BRWN SAND LOOS 0020 GREY CLAY STNS LOOS 0078 BRWN GRVL SAND LOOS 0084
WATERLOO CITY (WATER GCT (044))	17 532862 4813317 W	1991/02 1737	02 02			NU	85 10 110	6507126 () BRWN LOAM SOFT 0002 BRWN CLAY SILT SOFT 0019 SAND SLTY HARD 0020 BRWN CLAY SLTY HARD 0086 BRWN MSND HARD 0090 GREY CSND GRVL HARD 0093 GREY FSND SILT LYRD 0135 GREY CLAY TILL LYRD 0163
WATERLOO CITY (WATER GCT (044))	17 532529 4813708 W	1991/02 1737	02			NU	45 10	6507127 () BRWN LOAM SOFT 0003 BRWN SILT SAND SOFT 0043 BRWN CSND GRVL HARD 0056 BRWN SAND SLTY HARD 0060

Well Computer Print Out Data as of December 13 2013

Page: 6 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (044))	17 532532 4813704 W	1991/02 1737	02 02			NU	45 10 203	6507128 () BRWN LOAM SOFT 0003 BRWN SILT SAND SOFT 0043 BRWN CSND GRVL HARD 0056 BRWN SAND SLTY HARD 0105 GREY CLAY SILT HARD 0129 GREY FSND HARD 0131 GREY SAND SLTY HARD 0143 GREY SILT SAND HARD 0240 GREY SAND GRVL CMTD 0254 BLUE SHLE HARD 0267
WATERLOO CITY (WATER GCT (044))	17 531879 4813151 W	1995/10 2644	06 06 06	FR 0065	011 / 010 / 1:30	DO	65 4	6507977 (157154) LOAM CLAY 0004 BRWN CLAY STNS 0011 BRWN CLAY SNDY 0031 GREY CLAY SNDY STNS 0065 CSND FGVL 0069 GREY CLAY STNS 0081
WATERLOO CITY (WATER GCT (044))	17 532078 4813161 L	2003/04 7177	06					6509379 (261481) A
WATERLOO CITY (WATER GCT (044))	17 531708 4813470 W	2004/05 7154						6509660 (Z06862) A
WATERLOO CITY (WATER GCT (045))	17 531339 4814095 L	1948/08 2414	06 06	FR 0095	019 / 040 / 3:0	DO		6501401 () CLAY STNS 0012 GRVL BLDR 0019 YLLW CLAY 0024 GRVL 0036 RED CLAY 0039 GRVL 0041 BLUE ROCK 0058 GREY ROCK 0066 WHIT ROCK 0100
WATERLOO CITY (WATER GCT (045))	17 531336 4814093 L	2003/08 1737	06	FR 0090	006 / 007 015 / 1:0	DO	93 3	6509521 (261803) BRWN CLAY SNDY SOFT 0010 GREY CLAY SOFT 0068 GREY SAND SILT SOFT 0090 GREY SAND SOFT 0096
WATERLOO CITY (WATER GCT (045))	17 532064 4814123 W	1950/06 3524	06	FR 0068	008 / 010 035 / 20:0	PS		6501402 () CLAY MSND STNS 0015 MSND CLAY 0050 HPAN GRVL 0062 GRVL 0068
WATERLOO CITY (WATER GCT (045))	17 532114 4814073 W	1959/07 3524	07	FR 0081	028 / 040 025 / 12:0	DO		6501403 () MSND 0025 HPAN 0040 CLAY 0062 HPAN 0074 MSND 0078 CSND 0080 GRVL 0081
WATERLOO CITY (WATER GCT (045))	17 531914 4814078 W	1960/10 2519	30	FR 0011	007 / 015 002 / 1:0	DO		6501404 () LOAM 0001 MSND 0018
WATERLOO CITY (WATER GCT (045))	17 531714 4814578 W	1962/09 2519	30	FR 0008	008 / 018 003 / 0:30	ST DO		6501405 () LOAM 0001 BRWN CLAY MSND 0008 RED MSND 0019

Well Computer Print Out Data as of December 13 2013

Page: 7 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERL00 CITY (WATER GCT (045))	17 531814 4814273 W	1969/10 2519	30	FR 0016	012 / 022 004 / 1:0	D0		6503085 () BRWN FILL 0003 BLCK LOAM 0004 BRWN CLAY MSND 0010 GREY CLAY MSND 0016 GREY CLAY 0017 BRWN MSND 0019 GREY MSND 0022
WATERL00 CITY (WATER GCT (045))	17 531919 4814224 W	1975/06 5469	05	FR 0070	012 / / :0	D0		6504296 () BLCK LOAM 0003 BRWN SAND 0041 BRWN CLAY SNDY 0070 GRVL SAND 0081
WATERL00 CITY (WATER GCT (045))	17 531914 4814063 W	1979/11 5477	30	FR 0010	010 / 023 005 / :0	D0		6505000 () BRWN CLAY SNDY 0005 SAND GRVL 0007 BRWN CLAY 0010 BRWN SAND 0025
WATERL00 CITY (WATER GCT (045))	17 531971 4814286 W	1983/10 3518	07	FR 0075	015 / 025 015 / 4:0	D0		6505498 () PRDG 0014 GREY FSND 0024 GREY CLAY SAND 0048 GREY HPAN SAND 0070 GREY SAND CLAY 0075 GREY GRVL SAND 0078
WATERL00 CITY (WATER GCT (045))	17 531621 4814574 W	1984/08 3518	06	FR 0141	025 / 080 012 / 1:0	D0	137 5	6505814 () BLCK LOAM 0002 BRWN SAND 0010 GREY CLAY SILT 0085 GREY CLAY STNS HARD 0132 BRWN SAND LOOS 0139 BRWN GRVL SAND 0141
WATERL00 CITY (WATER GCT (045))	17 531889 4813989 W	1988/03 1737	06	FR 0209	009 / 025 022 / 3:0		216 7	6506271 () LOAM 0001 BRWN SAND GRVL SOFT 0004 BRWN CLAY SOFT 0006 GREY SAND SOFT 0033 GREY CLAY SILT SOFT 0054 GREY SAND GRVL HARD 0101 GREY HPAN STNS HARD 0172 GREY FSND SILT SOFT 0178 GREY HPAN STNS HARD 0186 GREY CLAY HARD 0201 GREY SAND GRVL SOFT 0225 GREY LMSN SHLE SOFT 0230
WATERL00 CITY (WATER GCT (045))	17 531891 4813987 W	1988/03 1737	06	FR 0082	006 / 021 100 / 24:0	PS	82 6	6506272 () LOAM 0001 BRWN CLAY SAND SOFT 0011 GREY SAND SOFT 0029 GREY CLAY SILT SOFT 0052 GREY GRVL BLDR HARD 0076 GREY SAND GRVL SOFT 0093 GREY GRVL BLDR HARD 0099 GREY HPAN STNS HARD 0126
WATERL00 CITY (WATER GCT (045))	17 531753 4814163 W	1988/05 3518	06	FR 0093	010 / 041 018 / 1:30	D0		6506524 () BRWN SAND CLAY LYRD 0011 GREY CLAY SAND LYRD 0020 GREY SAND SILT SOFT 0056 GREY CLAY SILT SOFT 0088 BRWN SAND STNS LYRD 0092 BRWN GRVL SAND LOOS 0095

Well Computer Print Out Data as of December 13 2013

Page: 8 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERL00 CITY (WATER GCT (045))	17 531732 4814256 W	1989/04 3518	06	FR 0115	006 / 050 030 / 2:0	DO		6506555 () BRWN STNS BLDR LOOS 0004 BRWN SAND CLAY SOFT 0012 GREY SAND CLAY SOFT 0068 GREY CLAY SAND SOFT 0105 BRWN SAND STNS LOOS 0112 BRWN CGVL LOOS 0115
WATERL00 CITY (WATER GCT (045))	17 531621 4814199 W	1989/04 3518	06	FR 0147	010 / 055 025 / 1:0	DO		6506556 () BRWN SAND CLAY SOFT 0028 GREY SILT SAND LOOS 0068 GREY CLAY HARD 0140 BRWN SAND SILT LOOS 0143 BRWN CGVL LOOS 0147
WATERL00 CITY (WATER GCT (045))	17 531888 4813989 W	1989/08 1737	10	FR 0070	005 / 038 450 / 24:0	MN	70 15	6506637 () BRWN SAND STNS SOFT 0009 GREY CLAY SOFT 0017 GREY FSND CLAY SOFT 0046 GREY CLAY SILT SOFT 0055 GREY SAND GRVL HARD 0076 GREY MSND SOFT 0085 GREY FSND SOFT 0089 GREY MSND SOFT 0094 GREY CLAY SILT SOFT 0105
WATERL00 CITY (WATER GCT (045))	17 531991 4813852 W	1989/08 1737	06	FR 0082	015 / 019 015 / 1:0	DO	82 3	6506638 () BRWN FILL SOFT 0012 GREY CLAY SILT SOFT 0045 GREY FSND SILT SOFT 0078 GREY CSND SOFT 0081 GREY SAND GRVL SOFT 0085
WATERL00 CITY (WATER GCT (045))	17 531679 4814247 W	1989/07 3518	06	FR 0131	008 / 030 020 / 1:0	DO		6506657 () BRWN SAND CLAY SOFT 0048 GREY CLAY STNS HARD 0115 GREY STNS CLAY HARD 0129 BRWN CGVL 0131
WATERL00 CITY (WATER GCT (045))	17 531674 4814165 W	1989/07 3518	06	FR 0147	017 / 034 020 / 1:0	DO		6506658 () BRWN CLAY SAND SOFT 0012 BRWN SAND STNS LOOS 0025 GREY SILT CLAY LYRD 0131 BRWN SAND SILT LOOS 0146 BRWN CGVL 0147
WATERL00 CITY (WATER GCT (045))	17 531339 4814095 L	1990/02 1737	06			NU		6506793 (67898) BRWN CLAY SNDY SOFT 0047 GREY CLAY HARD 0079 BRWN CLAY SNDY SOFT 0113 BRWN FSND SOFT 0117 BRWN CLAY SAND TILL 0170
WATERL00 CITY (WATER GCT (045))	17 531657 4813918 W	1990/03 1737	02 01	FR 0072	002 / 008 / 3:0	NU	85 4 85	6506855 () 2BRWN CLAY SAND SOFT 0027 GREY CLAY HARD 0031 GREY GRVL LOOS 0032 BRWN SAND SILT SOFT 0049 BRWN SAND CLAY SOFT 0072 GREY GRVL LOOS 0102

Well Computer Print Out Data as of December 13 2013

Page: 9 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER GCT (045))	17 531642 4813914 W	1990/04 1737	12	FR 0077	/ / 27:0	CO	85 20	6506856 () BRWN SAND SILT SOFT 0028 GREY SAND GRVL SOFT 0036 GREY CLAY SILT SOFT 0077 GREY SAND GRVL SOFT 0107 GREY SAND GRVL SOFT 0125
WATERLOO CITY (WATER GCT (045))	17 531758 4814197 W	1990/01 3518	06	FR 0115	006 / 030 020 / 1:0	DO		6506881 () BRWN SAND CLAY SOFT 0015 GREY CLAY SOFT 0028 BRWN SILT LOOS 0058 GREY CLAY SILT LYRD 0100 BRWN STNS SAND LOOS 0110 BRWN CGVL LOOS 0115
WATERLOO CITY (WATER GCT (045))	17 531721 4814133 W	1990/01 3518	06	FR 0113	008 / 030 020 / 1:0	DO		6506882 () BRWN SAND CLAY HARD 0016 BRWN SAND LOOS 0055 GREY SILT LOOS 0070 GREY CLAY HARD 0107 BRWN STNS SAND LOOS 0112 BRWN CGVL LOOS 0113
WATERLOO CITY (WATER GCT (045))	17 531156 4814069 W	1990/12 1737	02 02			NU	29 5 90	6506989 () 5GREY FILL SOFT 0004 BRWN PEAT SOFT 0007 BRWN CLAY SLTY SOFT 0012 GREY MSND CLAY SOFT 0035 GREY FSND CLAY SOFT 0043 GREY CLAY SOFT 0050 GREY CLAY FSND SOFT 0088 GREY SAND SOFT 0094 GREY SAND SLTY SOFT 0104
WATERLOO CITY (WATER GCT (045))	17 531657 4814135 W	1990/05 3518	06	FR 0148	040 / 060 030 / 2:0	DO		6507033 () BRWN SAND CLAY SOFT 0038 GREY SILT SAND LOOS 0075 GREY CLAY HARD 0135 GREY SAND STNS LOOS 0145 BRWN CGVL LOOS 0149
WATERLOO CITY (WATER GCT (045))	17 531870 4813997 W	1991/02 1737	02			NU	14 5	6507130 () BRWN SAND SILT SOFT 0019
WATERLOO CITY (WATER GCT (045))	17 531951 4814323 W	1991/07 3518	06	FR 0076	007 / 010 020 / 1:0	DO		6507253 () BRWN SAND CLAY SOFT 0021 GREY SILT CLAY SOFT 0065 BRWN SILT SAND LOOS 0071 BRWN CGVL 0076
WATERLOO CITY (WATER GCT (045))	17 531973 4814062 W	1994/02 1737	10	FR 0068	010 / 013 / 24:0	CO	70 14	6507625 (132456) BRWN SAND GRVL SOFT 0014 GREY SAND SILT CLAY 0045 GREY CLAY SILT SOFT 0057 GREY GRVL CLAY SOFT 0068 GREY SAND SAND SOFT 0074 GREY GRVL BLDR HARD 0084 GREY SAND GRVL SOFT 0091 GREY GRVL CLAY SOFT 0101

Well Computer Print Out Data as of December 13 2013

Page: 10 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERL00 CITY (WATER GCT (045))	17 531339 4814095 L	1994/07 1737	06	UK 0125 FR 0119 UK 0122	006 / 025 010 / 3:0	D0	122 3	6507685 (132547) BRWN CLAY SOFT 0011 BRWN SAND SOFT 0015 GREY FSND SOFT 0070 GREY CLAY SOFT 0105 BRWN SAND GRVL SOFT 0125
WATERL00 CITY (WATER GCT (045))	17 531872 4813552 W	1995/09 4207	05 06	FR 0065	004 / 065 020 / 1:0	D0	59 5	6507897 (163671) BRWN CLAY SILT 0057 GREY SAND GRVL 0065
WATERL00 CITY (WATER GCT (045))	17 531336 4814093 L	2003/05 1737	06	FR 0172	023 / 025 012 / 4:0	D0	169 3	6509424 (261715) BLCK LOAM SILT 0001 BRWN CLAY SOFT 0014 GREY CLAY SOFT 0021 GREY FSND SILT 0074 GREY CLAY SILT HARD 0086 GREY TILL UNKN HARD 0161 GREY GRVL UNKN SOFT 0172
WATERL00 CITY (WATER GCT (045))	17 531336 4814093 L	2003/08 1737	06	FR 0120	009 / 022 010 / 1:0	D0	117 3	6509520 (261802) BRWN SAND SILT SOFT 0011 BRWN CLAY SILT SOFT 0018 GREY CLAY SILT SOFT 0078 GREY CLAY GRVL SOFT 0080 GREY CLAY SOFT 0106 GREY SAND SOFT 0120
WATERL00 CITY (WATER (028))	17 532238 4814067 W	2006/08 6607	01	0023			24 7	6510779 (Z52302) A046451 BRWN SILT LOAM 0001 BRWN SAND SILT 0031
WATERL00 CITY (WATER (028))	17 532166 4814543 W	2007/08 6865	06	0105	007 / 079 007 / 1:0	D0	103 3	7050299 (Z74772) A057308 BRWN SAND CLAY 0009 GREY SILT CLAY 0037 GREY SILT SAND 0089 BRWN SAND GRVL SILT 0101 BRWN SAND GRVL 0106
WATERL00 CITY (WATER (044))	17 531869 4813128 W	2007/09 1737						7053334 (Z72743)
WATERL00 CITY (WATER (28))	17 532166 4814543 W	2007/12 7385				NU		7100303 (Z76879) A
WATERL00 CITY (WATER (45))	17 531814 4814294 W	2007/12 7385				NU		7100304 (Z76878) A
WATERL00 CITY (WATER ())	17 531960 4814029 W	2013/11 6607						7212907 (Z169988) A146700 P
WATERL00 CITY (WATER ())	17 531975 4813252 W	2011/06 7385						7165332 (Z129839) A
WATERL00 CITY (WATER ())	17 532042 4814494 W	2013/09 2663						7211051 (Z172140) P

Well Computer Print Out Data as of December 13 2013

Page: 11 / 12

TOWNSHIP CONCESSION (LOT)	UTM ¹	DATE ² CNTR ³	CASING DIA ⁴	WATER ^{5,6} DETAIL	STAT LVL/PUMP LVL ⁷ RATE ⁸ /TIME HR:MIN	WATER USE ⁹	SCREEN INFO ¹⁰	WELL # (AUDIT#) WELL TAG # STATE ¹² DEPTHS TO WHICH FORMATIONS EXTEND ^{5,11}
WATERLOO CITY (WATER ())	17 531865 4814009 W	2006/10 1737	02	FR 0015		NU	10 5	7042101 (Z54464) A044530 BRWN GRVL 0006 BRWN CLAY SOFT 0015
WATERLOO CITY (WATER ())	17 531865 4814009 W	2006/10 1737	02	FR 0075		NU	65 10	7042100 (Z54463) A044530 BRWN GRVL 0006 BRWN CLAY SILT SOFT 0015 GREY CLAY SOFT 0023 GREY CLAY TILL HARD 0035 GREY CLAY SAND SOFT 0059 BRWN GRVL SAND 0077
WATERLOO CITY (WATER ())	17 532222 4813004 W	2006/07 6032	02				49 26	6510867 (Z05110) A005031 BRWN SAND CLAY 0001 BRWN SAND SILT 0010 BRWN SAND GRVL 0073 GREY SILT CLAY 0075
WATERLOO CITY (WATER ())	17 532043 4813210 W	2011/06 7385						7165331 (Z129840) A
WATERLOO CITY (WATER ())	17 531700 4813819 W	2013/10 6607						7212888 (C19127) A146702 P
WATERLOO CITY (WATER ())	17 531862 4814117 W	2013/11 6607						7212891 (C147998) A146699 P
WATERLOO CITY (WATER ())	17 532430 4814028 W	2013/11 6607						7212894 (C22212) A146708 P
()	17 531898 4813702 W	2013/11 6607						7212887 (C20861) A146701 P

Notes:

1. UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
2. Date Work Completed
3. Well Contractor Licence Number
4. Casing diameter in inches
5. Unit of Depth in Feet
6. See Table 4 for Meaning of Code
7. STAT LVL: Static Water Level in Feet ; PUMP LVL: Water Level After Pumping in Feet
8. Pump Test Rate in GPM, Pump Test Duration in Hour : Minutes
9. See Table 3 for Meaning of Code
10. Screen Depth and Length in feet
11. See Table 1 and 2 for Meaning of Code
12. A: Abandonment; P: Partial Data Entry Only

1. Core Material and Descriptive terms										
Code	Description	...	Code	Description	...	Code	Description	...	Code	Description
BLDR	BOULDERS		FCRD	FRACTURED		IRFM	IRON FORMATION		PORS	POROUS
BSLT	BASALT		FGRD	FINE-GRAINED		LIMY	LIMY		PRDG	PREVIOUSLY DUG
CGRD	COARSE-GRAINED		FGVL	FINE GRAVEL		LMSN	LIMESTONE		PRDR	PREV. DRILLED
CGVL	COARSE GRAVEL		FILL	FILL		LOAM	TOPSOIL		QRTZ	QUARTZITE
CHRT	CHERT		FLDS	FELDSPAR		LOOS	LOOSE		QSND	QUICKSAND
CLAY	CLAY		FLNT	FLINT		LTCL	LIGHT-COLOURED		QTZ	QUARTZ
CLN	CLEAN		FOSS	FOSILIFEROUS		LYRD	LAYERED		ROCK	ROCK
CLYY	CLAYEY		FSND	FINE SAND		MARL	MARL		SAND	SAND
CMTD	CEMENTED		GNIS	GNEISS		MGRD	MEDIUM-GRAINED		SHLE	SHALE
CONG	CONGLOMERATE		GRNT	GRANITE		MGVL	MEDIUM GRAVEL		SHLY	SHALY
CRYS	CRYSTALLINE		GRSN	GREENSTONE		MRBL	MARBLE		SHRP	SHARP
CSND	COARSE SAND		GRVL	GRAVEL		MSND	MEDIUM SAND		SHST	SCHIST
DKCL	DARK-COLOURED		GRWK	GREYWACKE		MUCK	MUCK		SILT	SILT
DLMT	DOLOMITE		GVLY	GRAVELLY		OBDN	OVERBURDEN		SLTE	SLATE
DNSE	DENSE		GYPS	GYPSUM		PCKD	PACKED		SLTY	SILTY
DRTY	DIRTY		HARD	HARD		PEAT	PEAT		SNDS	SANDSTONE
DRY	DRY		HPAN	HARDPAN		PGVL	PEA GRAVEL		SNDY	SANDY

2. Core Color	
Code	Description
WHIT	WHITE
GREY	GREY
BLUE	BLUE
GREN	GREEN
YLLW	YELLOW
BRWN	BROWN
RED	RED
BLCK	BLACK
BLGY	BLUE-GREY

3. Water Use			
Code	Description	Code	Description
DO	Domestic	OT	Other
ST	Livestock	TH	Test Hole
IR	Irrigation	DE	Dewatering
IN	Industrial	MO	Monitoring
CO	Commercial		
MN	Municipal		
PS	Public		
AC	Cooling And A/C		
NU	Not Used		

4. Water Detail			
Code	Description	Code	Description
FR	Fresh	GS	Gas
SA	Salty	IR	Iron
SU	Sulphur		
MN	Mineral		
UK	Unknown		

FIGURE 1

MEASURED GROUNDWATER LEVELS - All Wells

Erbville South Environmental Assessment - Hydrogeology Study
Erbville Road and Wideman Road
Waterloo, Ontario

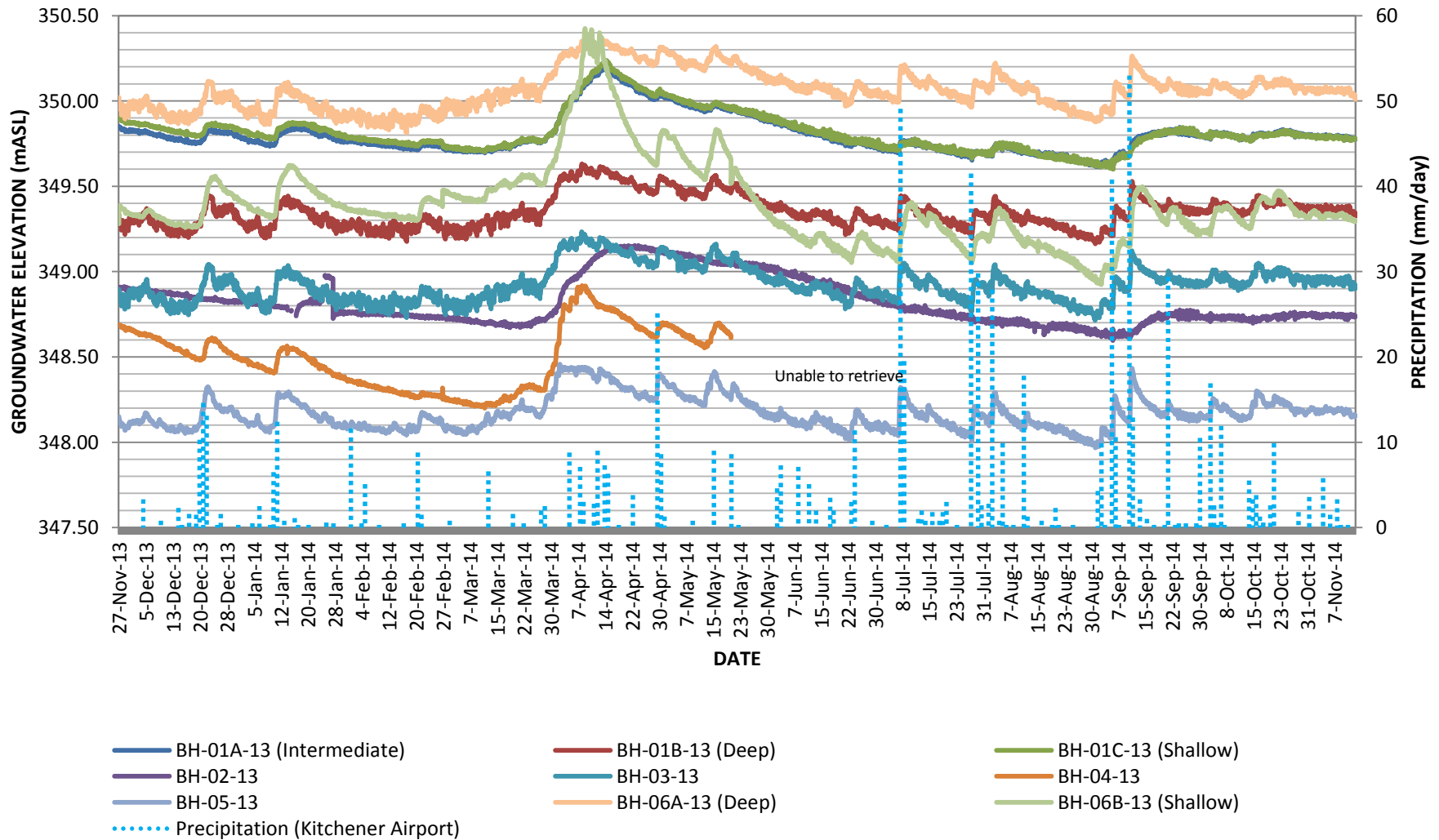


FIGURE 2

MEASURED GROUNDWATER LEVELS - Shallow Wells (AFB1)

Erbville South Environmental Assessment - Hydrogeology Study
Erbville Road and Wideman Road
Waterloo, Ontario

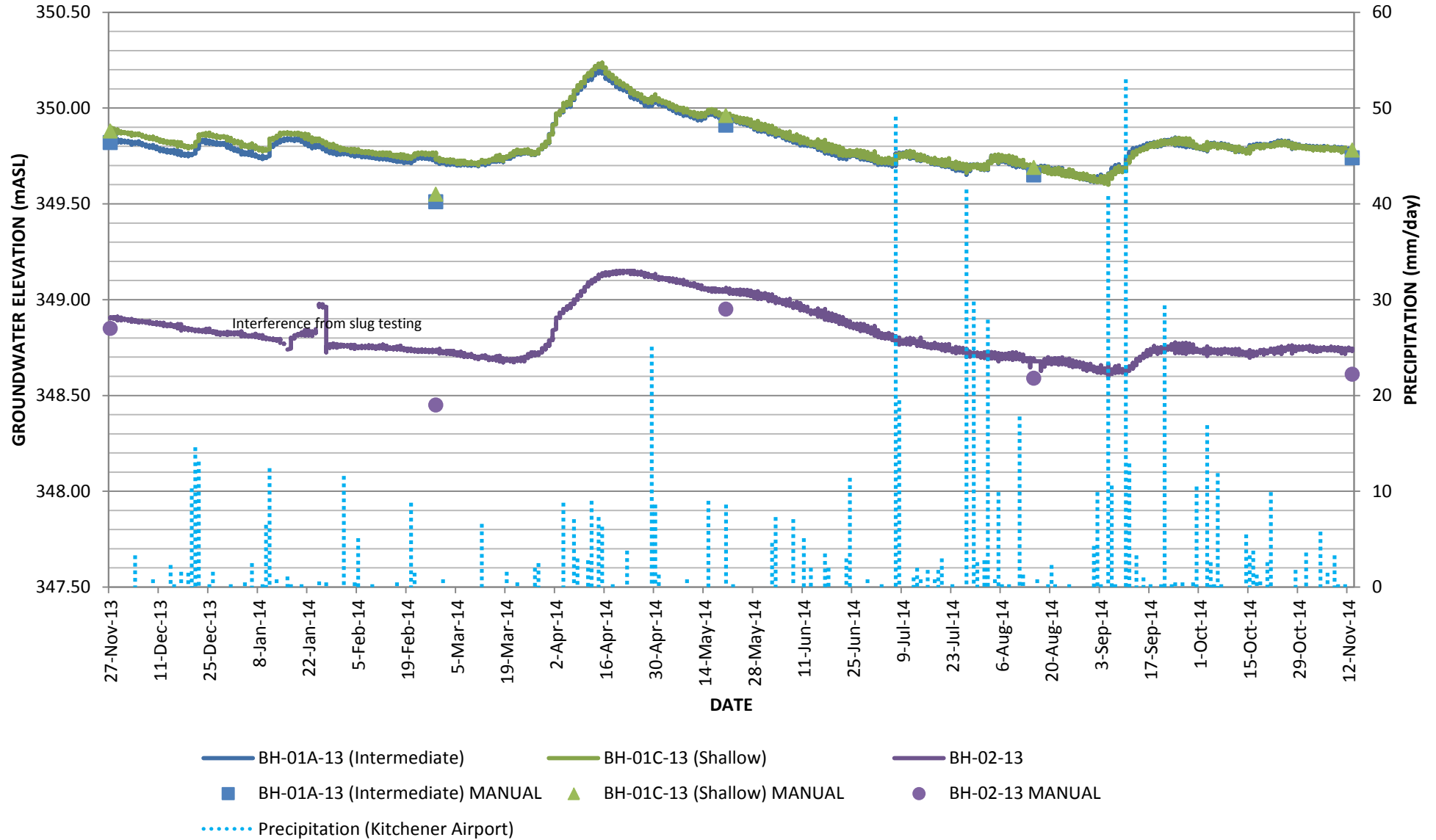


FIGURE 3

MEASURED GROUNDWATER LEVELS - Intermediate Wells (AFA1)

Erbville South Environmental Assessment - Hydrogeology Study
Erbville Road and Wideman Road
Waterloo, Ontario

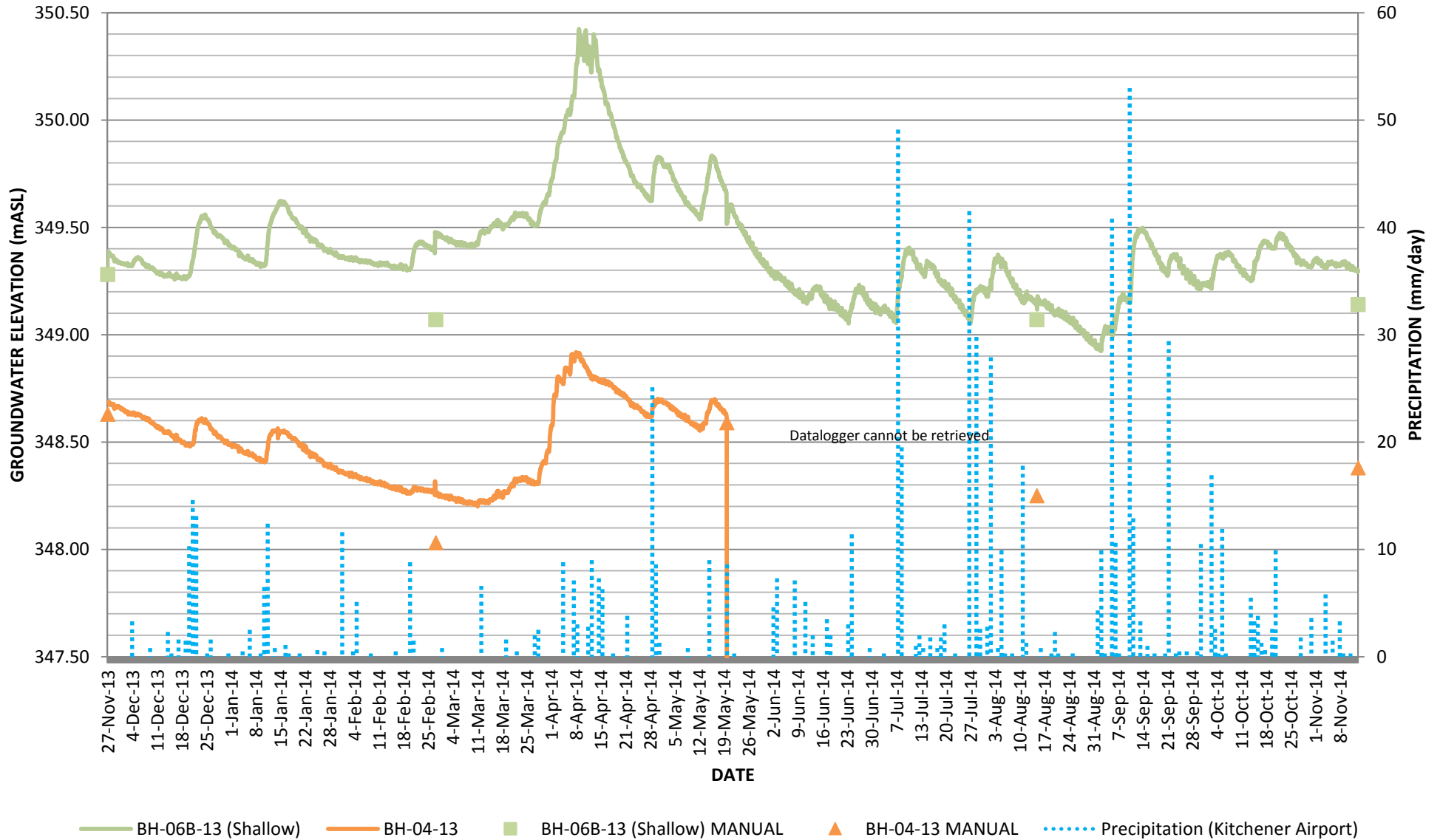


FIGURE 4

MEASURED GROUNDWATER LEVELS - Deep Wells (AFB2)

Erbville South Environmental Assessment - Hydrogeology Study
Erbville Road and Wideman Road
Waterloo, Ontario

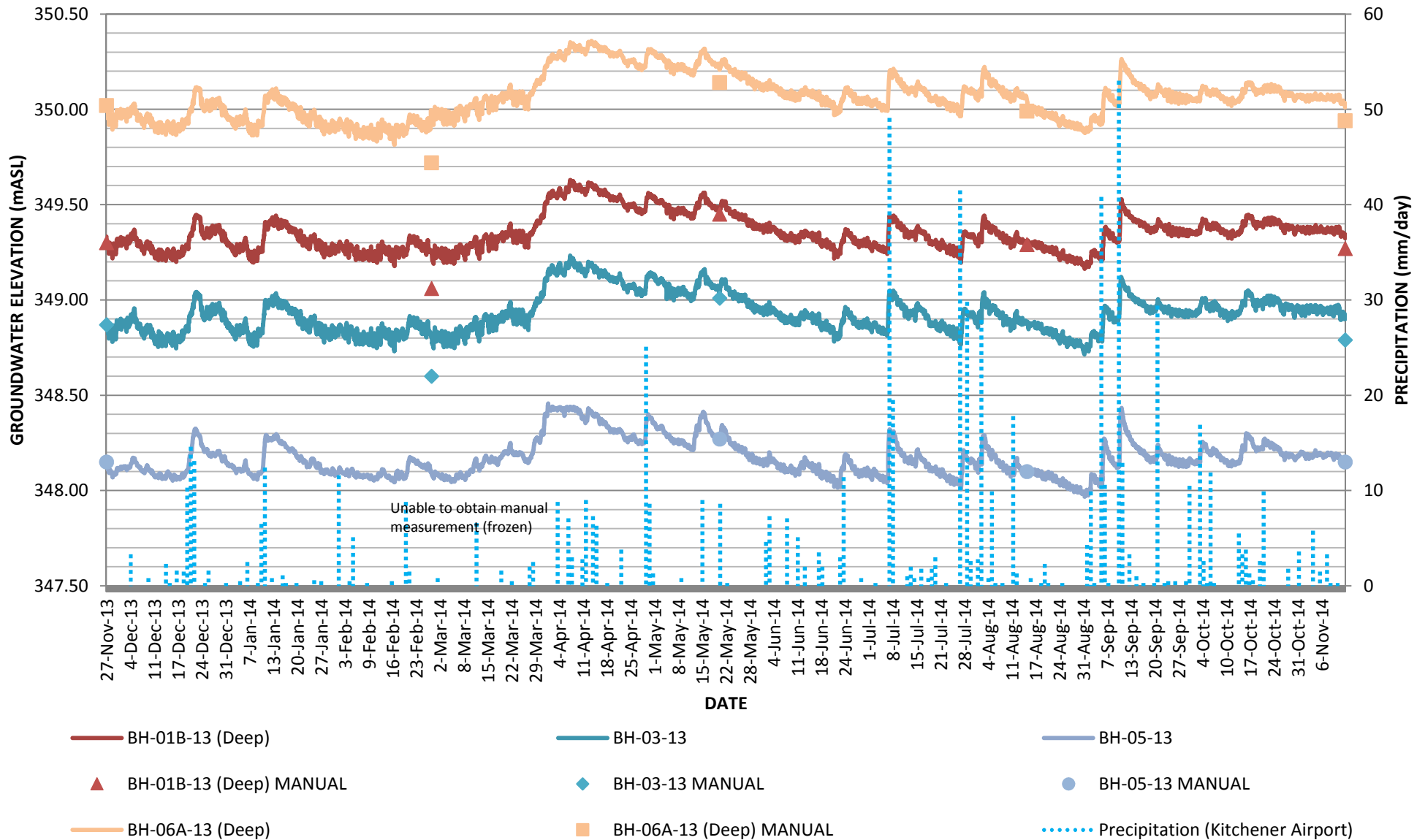


FIGURE 5

PRECIPITATION AND FLOW RATE AT ERBSVILLE ROAD (FLOW GAUGE No. 8785042)

Erbsville Road South Environmental Study
Erbsville Road and Wideman Road
Waterloo, Ontario

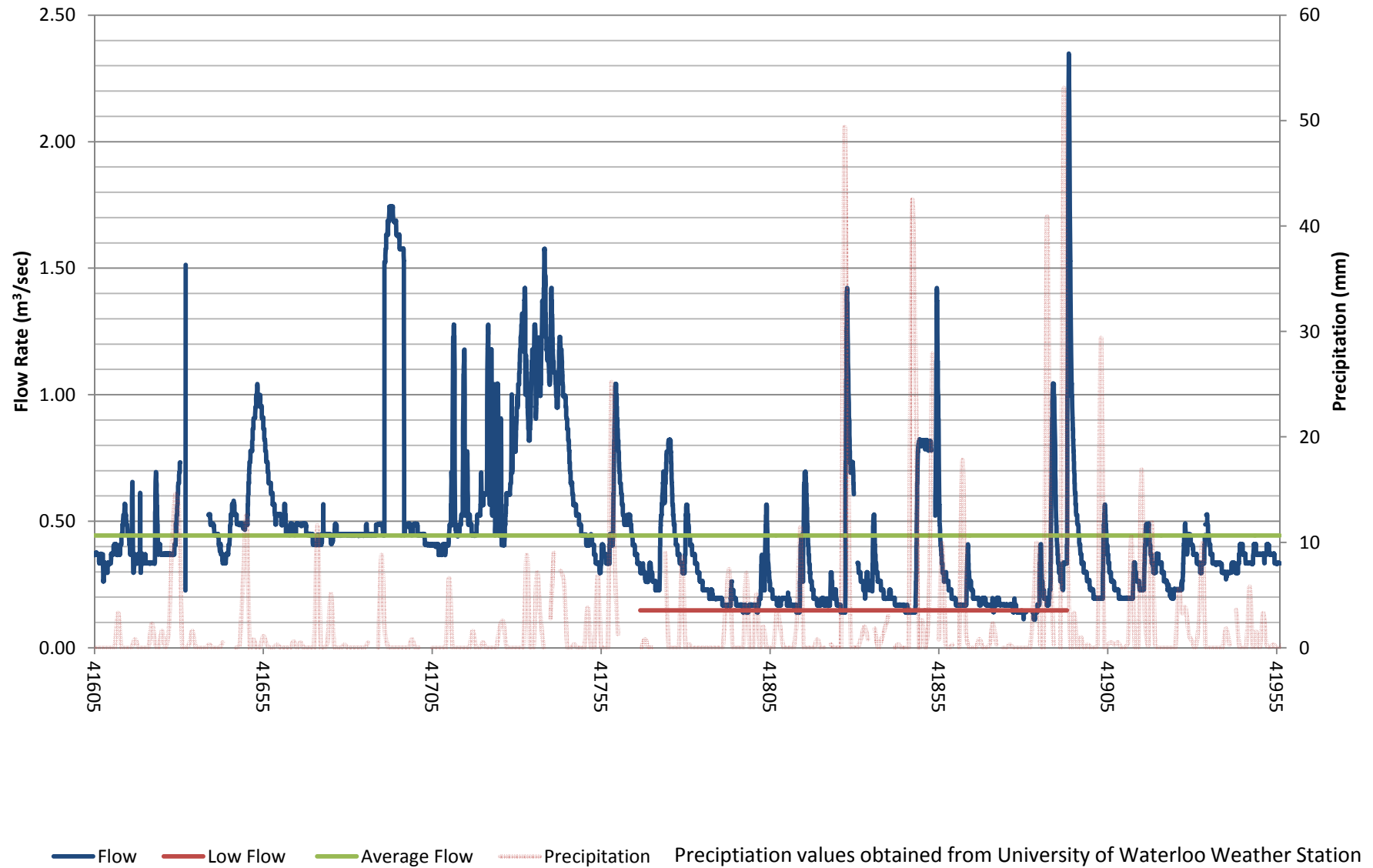


FIGURE 6

GROUNDWATER LEVELS ALONG LAUREL CREEK AND FLOW RATE AT ERBSVILLE ROAD (FLOW GAUGE No. 8785042)

Erbville South Environmental Study
Erbville Road and Wideman Road
Waterloo, Ontario

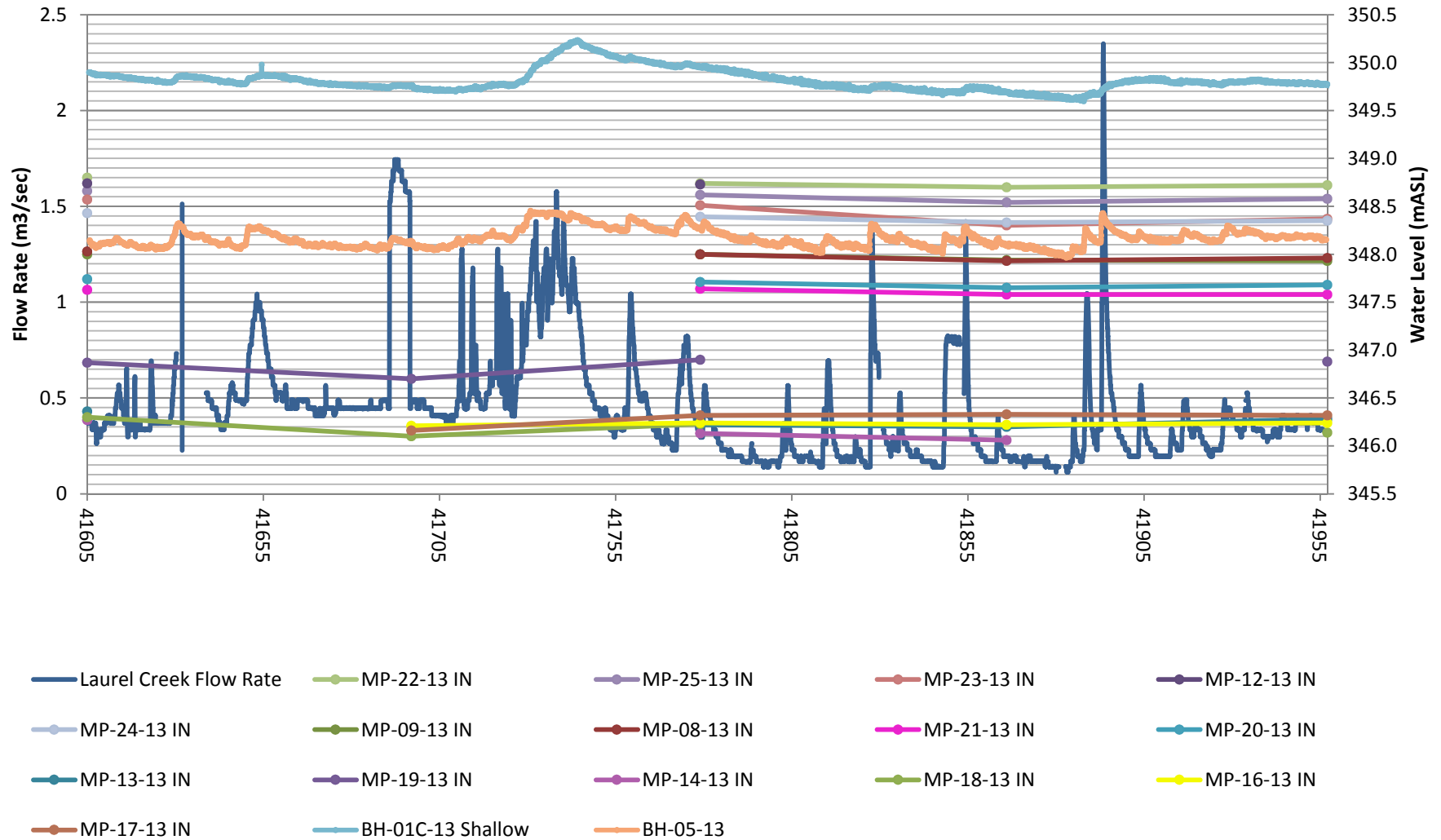


FIGURE 7

GROUNDWATER LEVELS ALONG WIDEMAN CREEK

Erbsville South Environmental Study
Erbsville Road and Wideman Road
Waterloo, Ontario

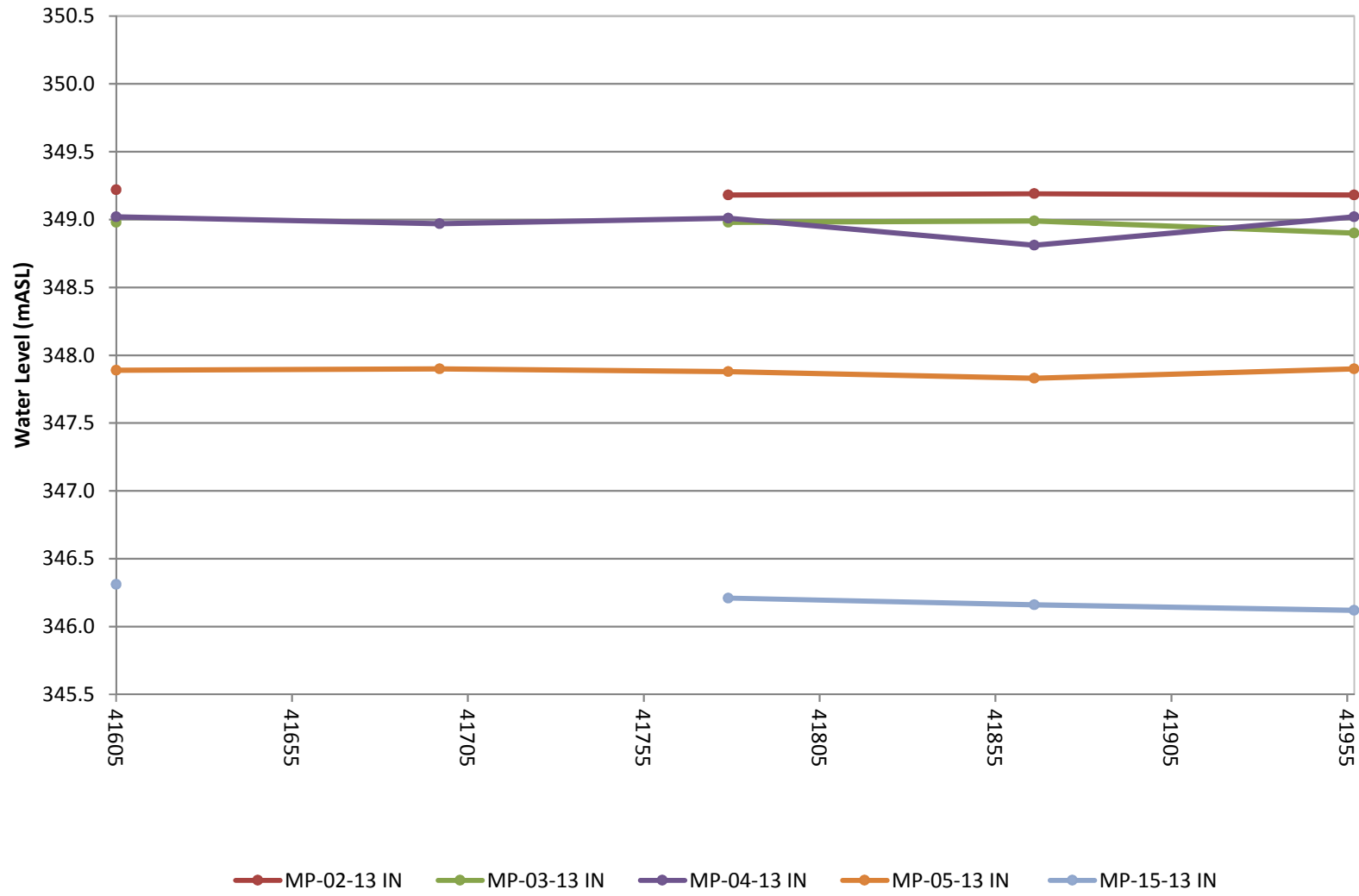


FIGURE 8

GROUNDWATER LEVELS BETWEEN LAUREL CREEK AND WIDEMAN CREEK AND ERBSVILLE ROAD (FLOW GAUGE N. 8785042)

Erbville South Environmental Study
Erbville Road and Wideman Road,
Waterloo, Ontario

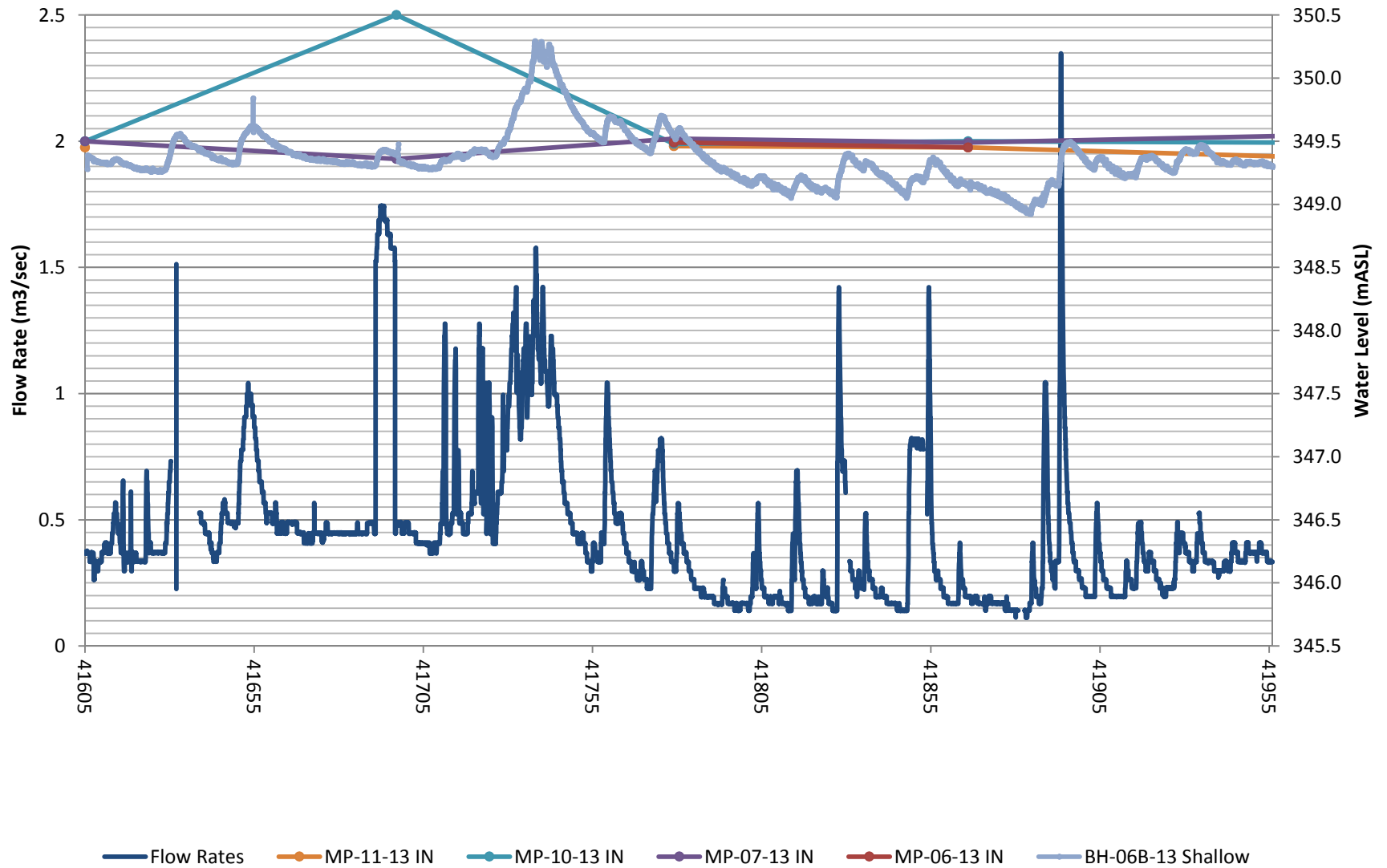


FIGURE 9

GROUNDWATER LEVELS AT TRIBUTARY TO WIDEMAN CREEK
Erbsville South Environmental Study
Erbsville Road and Wideman Road
Waterloo, Ontario

