



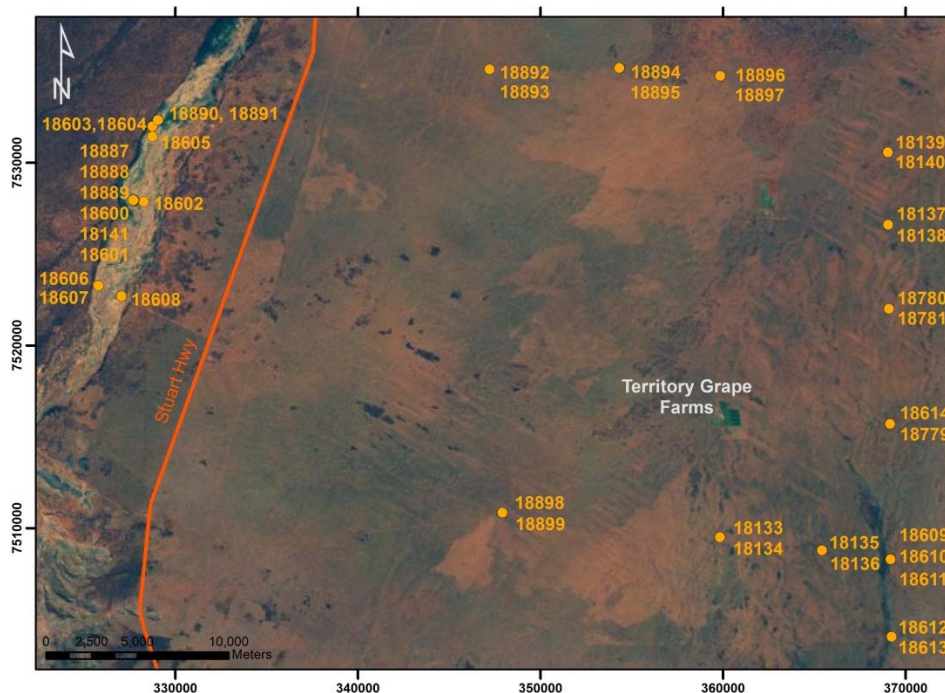
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	369180
Unique Well ID	18611	GPS Northing		7508293
Completion Date	4 June 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		39.4 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 1.1 L/s.			
Project Comments: 18611 is a dual completion multi-level piezometer. It is located adjacent to 18609 and 18610. Together, these bores provide a nest of five piezometers sampling different depths in the unconfined aquifer.				

Bore ID	Casing Size (mm)/ Type	TOC (mAHD)	Casing Depth (mBGL)		Screen Size (mm)/ Aperture (mm)/ Type	Cement (mBGL)		Screen Depth (mBGL)		SWL (mTOC)
	200/Steel		-0.79	3.5	NA	0.0	3.5	NA	NA	NA
18611-2	50/PVC12	578.746	-0.695	33.4	50/1/PVC	-0.6	1.0	31.5	32.5	32.045
18611-1	50/PVC12	578.749	-0.7	39.94	50/1/PVC	-0.6	1.0	38	39	32.05

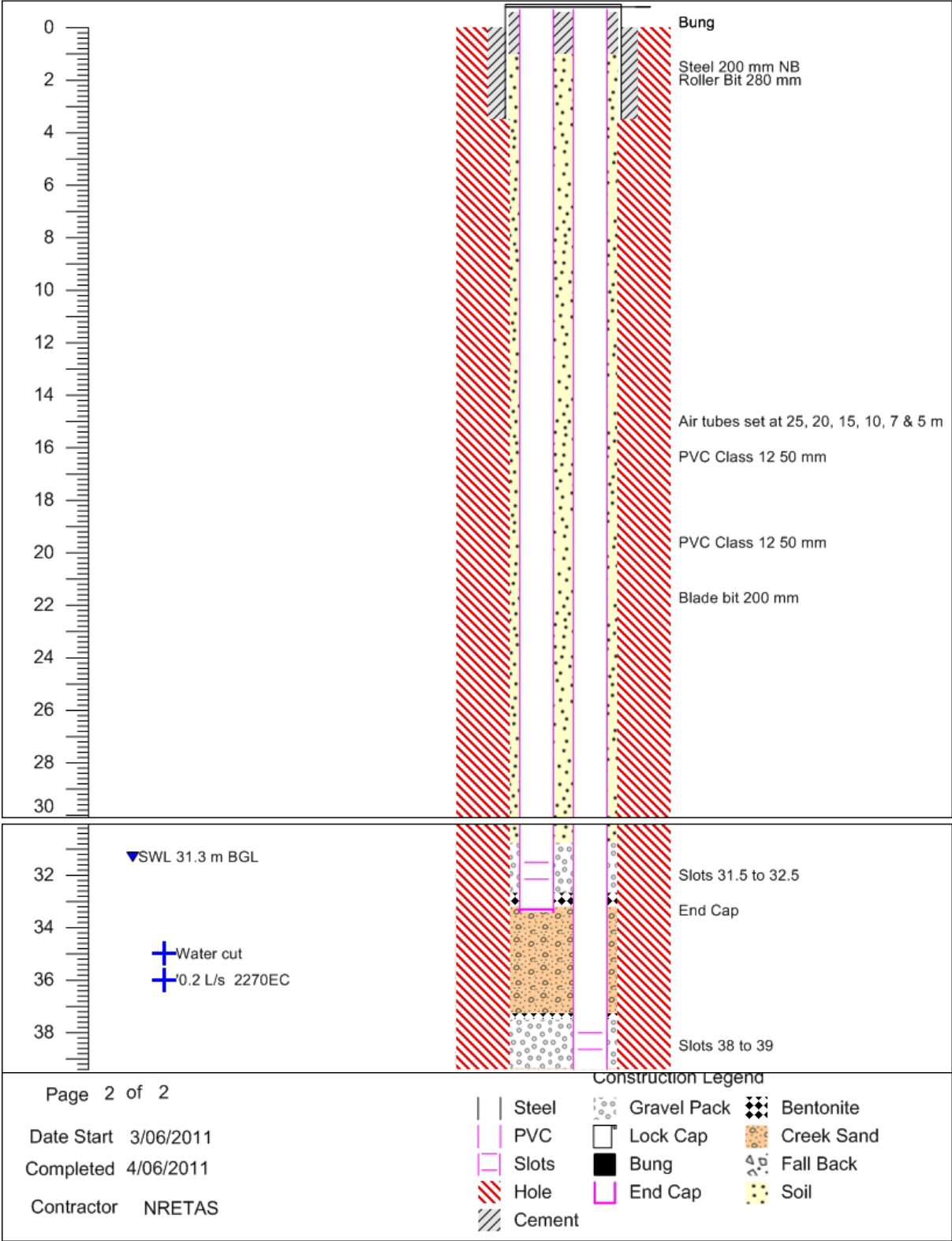


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

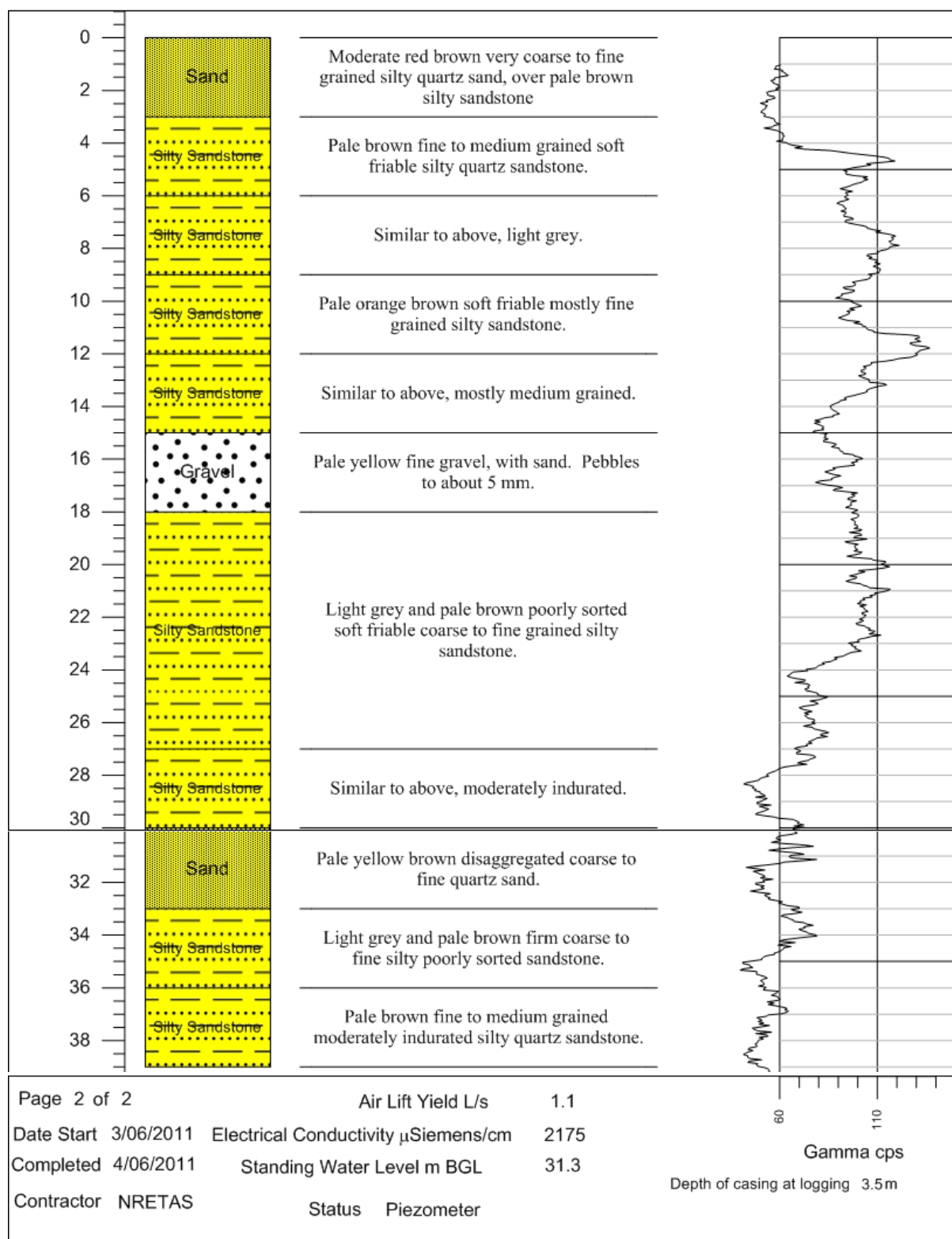
Note* Appendix includes Well Completion, Lithology and Geophysical Logs, Hydraulic Test and Chemical Analysis.

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Well Completion Log

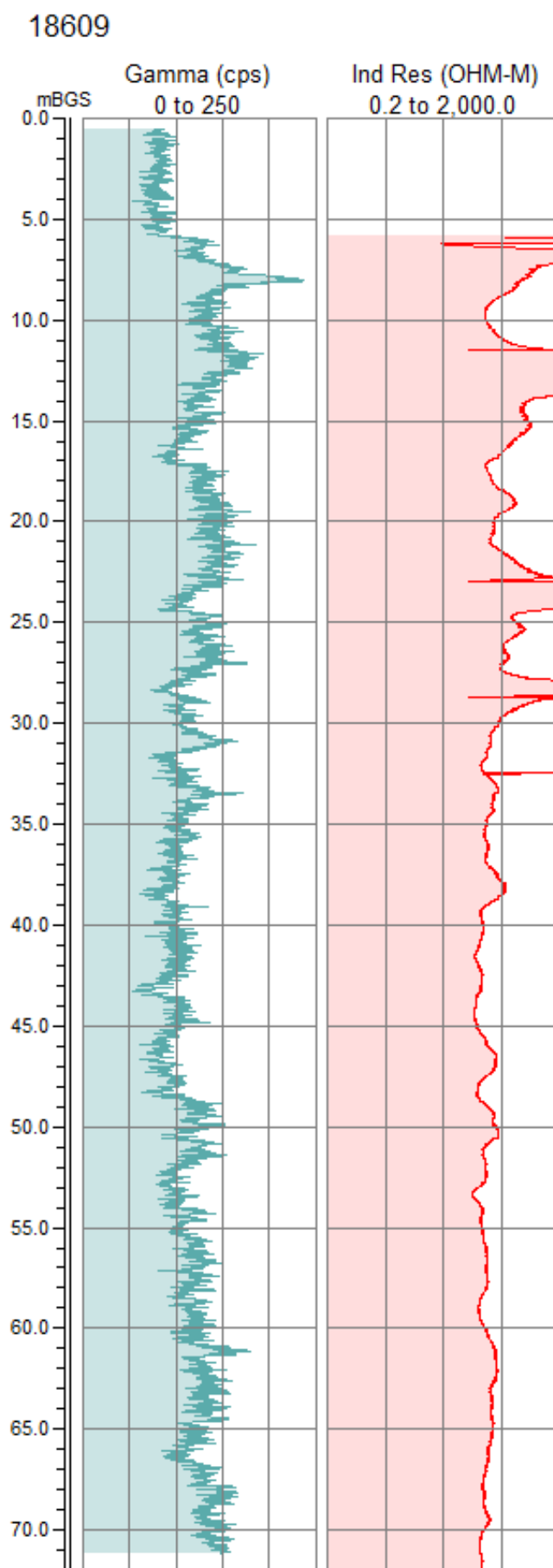


Lithology and Geophysical Log



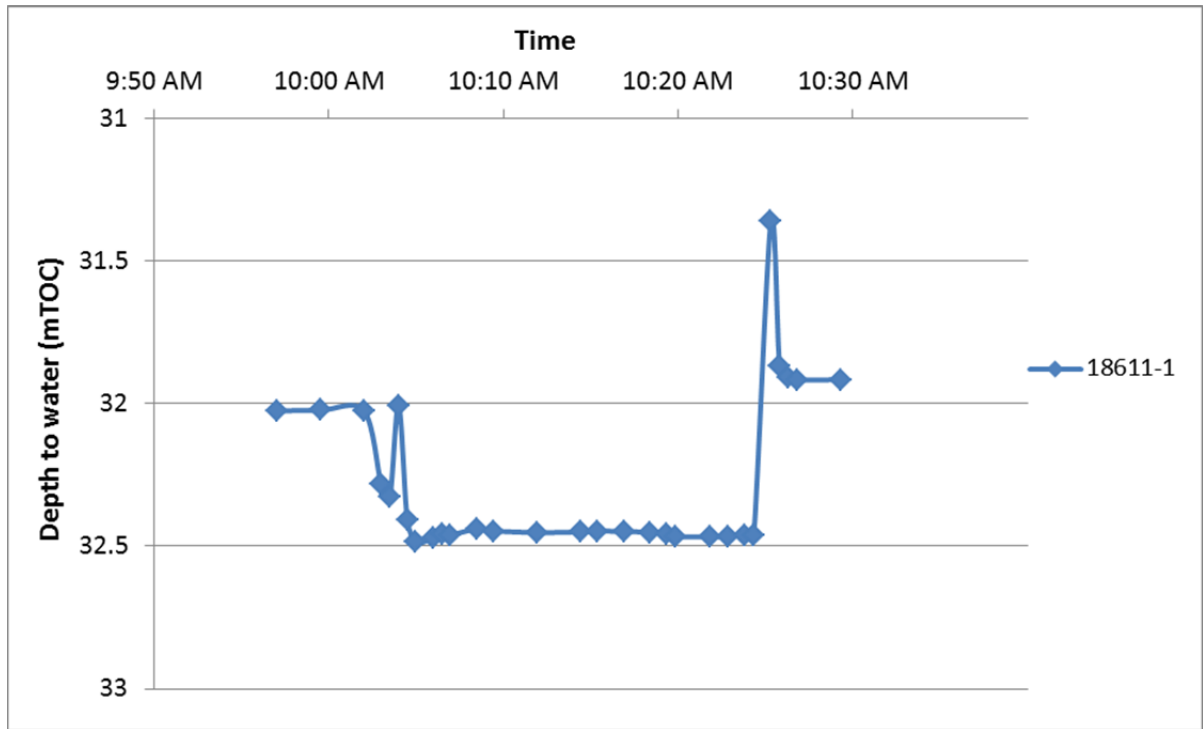
Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18609, the deepest piezometer in the adjacent bore. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

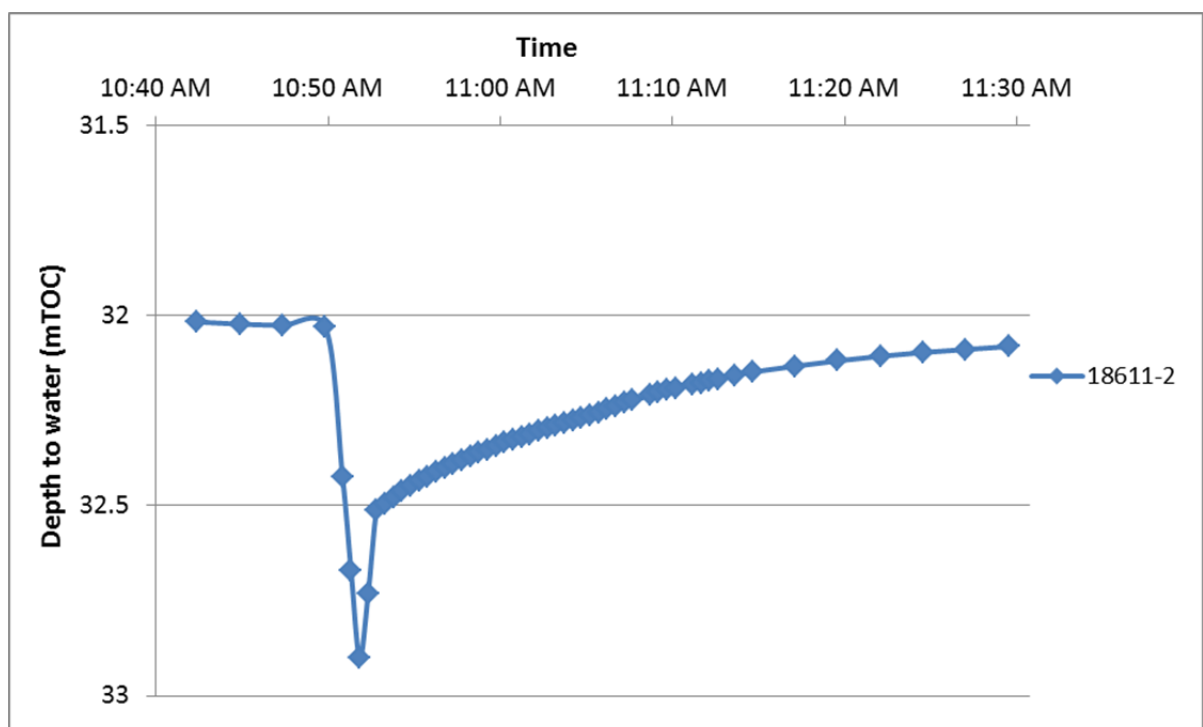


Pumping Test

A pumping test was performed on piezometer 18611-1 on 8/08/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 40.5 mTOC and using a flow rate of 6.7 L/min. The results of the test are presented below. The high water level occurring after the pump was turned off is likely from water draining out of the tubing. The report author may be contacted for the full data set.



A pumping test was performed on piezometer 18611-2 on 8/08/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 34.5 mTOC and using a flow rate of 6.7 L/min. The results of the test are presented below. The initial recovery from 32.9 mTOC to 32.5 mTOC is likely from water draining out of the tubing. The report author may be contacted for the full data set.



Chemical Analysis

Basic chemical analysis of the dissolved solutes and concentration of ions in the borehole was performed. The testing also included hydrogen ion activity (pH) and fluid electrical conductivity (EC). Data from the chemical analysis is shown below.

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses							
		m	pH	EC	Temp	Alkalinity	Ca ²⁺	K ⁺	Mg ²⁺	Na ⁺	Si	Cl ⁻	NO ₃ ⁻	SO ₄ ²⁻
		TOC		μS/cm	°C	mg/L CaCo ³	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18611-2	6/09/2011	32.05	7.9	2165	31	270	68.6	25.6	37.6	257	36.3	370	94	200
18611-1	6/09/2011	32.05	7.5	2036	29		72.9	27	39.8	240	37	350	99	180