



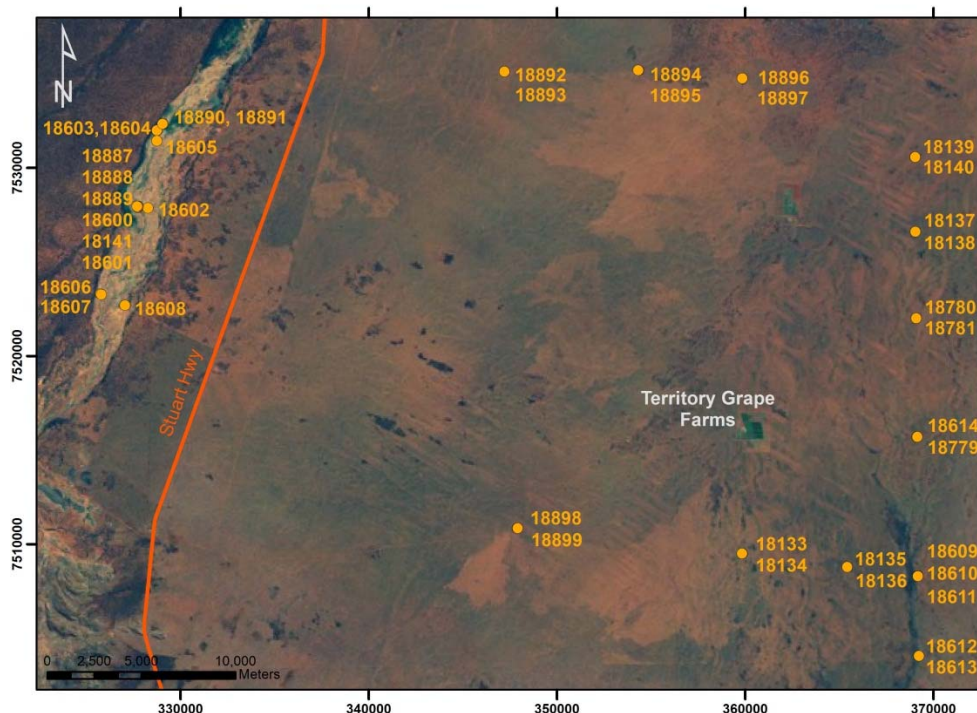
An Australian Government Initiative

# Groundwater Education Investment Fund Project

## Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	369052
Unique Well ID	18138	GPS Northing		7526603
Completion Date	1 December 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		33.0 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 1.7 L/s.			
Project Comments: 18138 is a dual completion multi-level piezometer. It is located adjacent to 18137. 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		-0.8	5.7	NA	0.0	5.7	NA	NA	NA
18138-2	50/PVC9	550.276	-0.77	21	50/1/PVC			19	20	14.323
18138-1	50/PVC9	550.272	-0.76	28.5	50/1/PVC			25.5	27.5	14.319

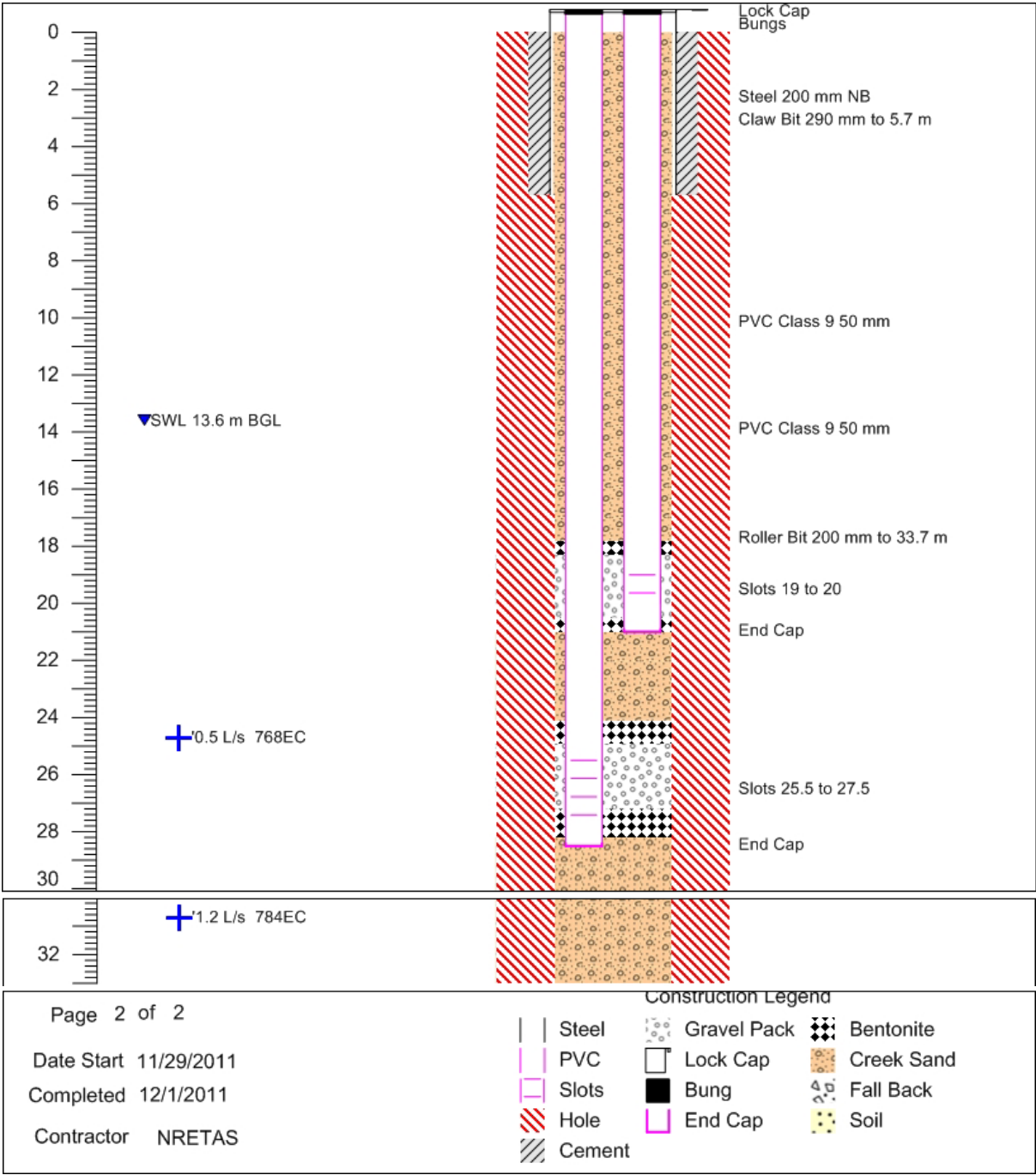


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

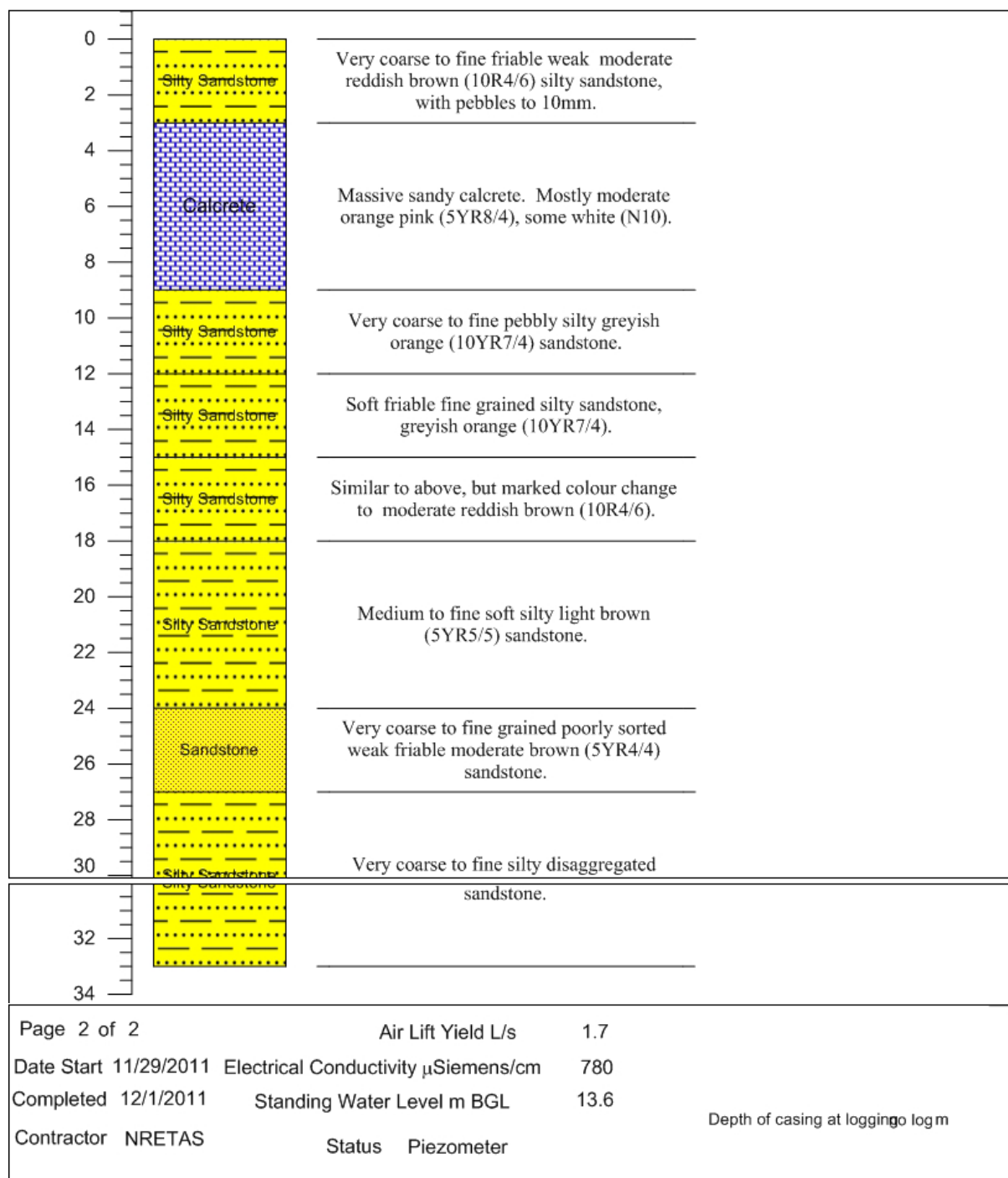
Note\* Appendix includes Well Completion, Lithology and Geophysical Logs, Hydraulic Test and Chemical Analysis.

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# Well Completion Log

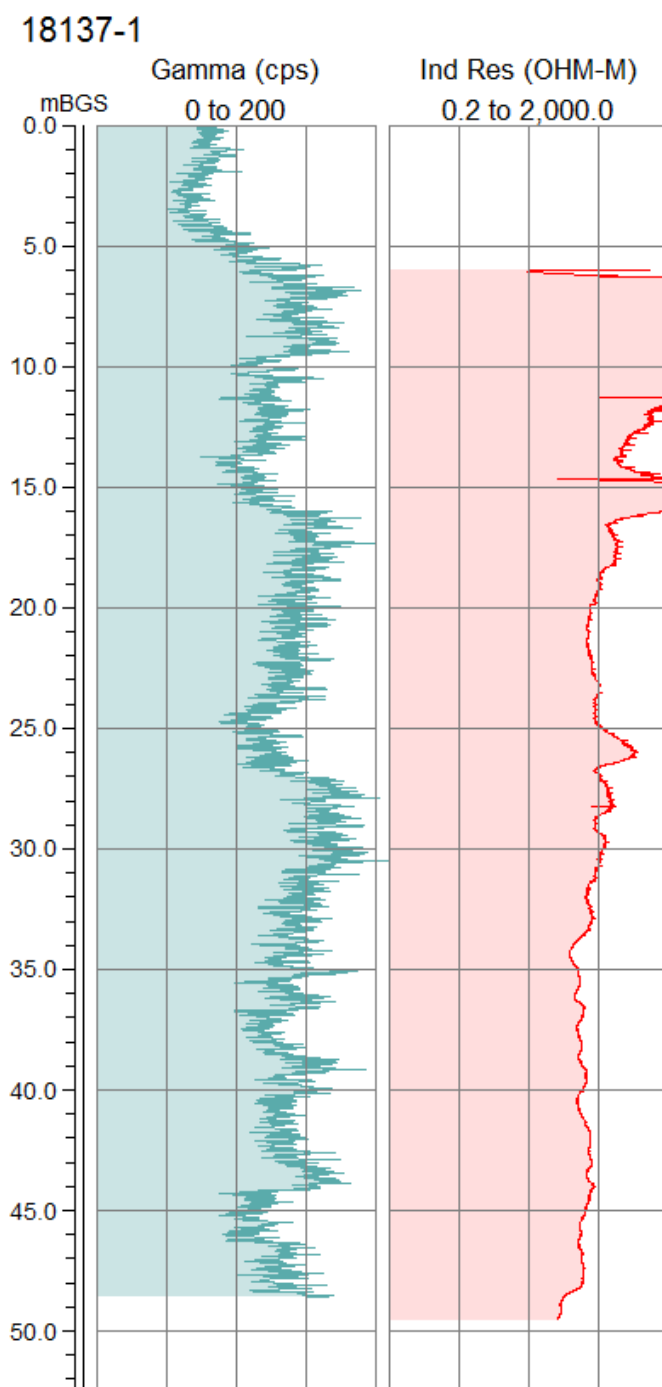


# Lithology Log



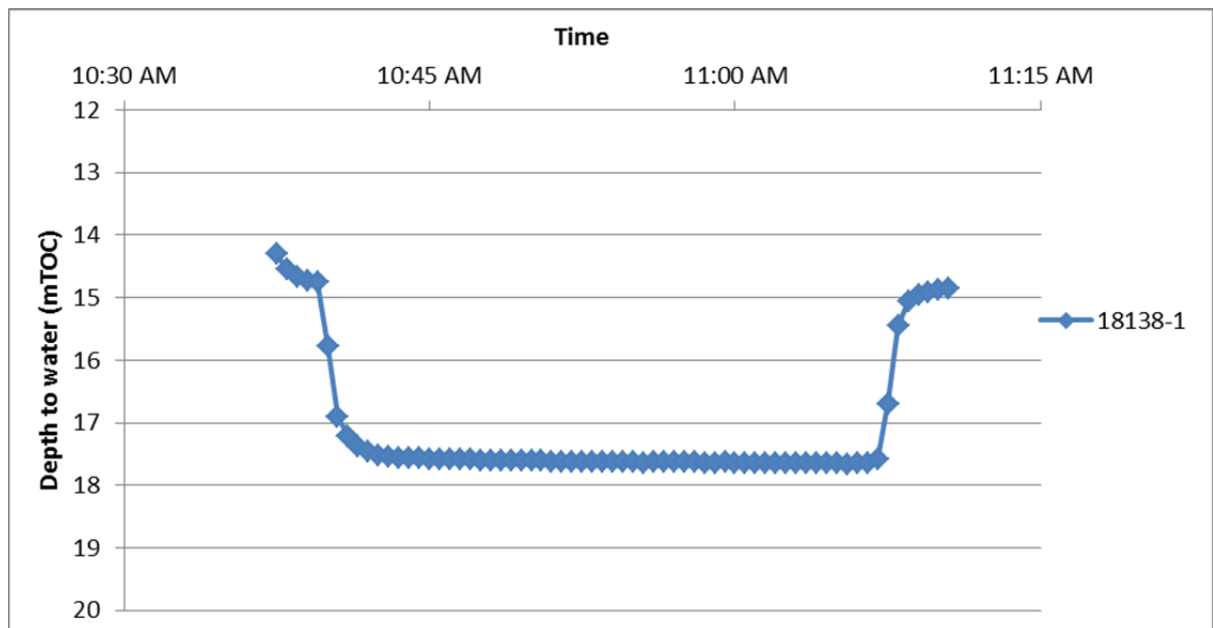
## Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18137-1, adjacent to 18138. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

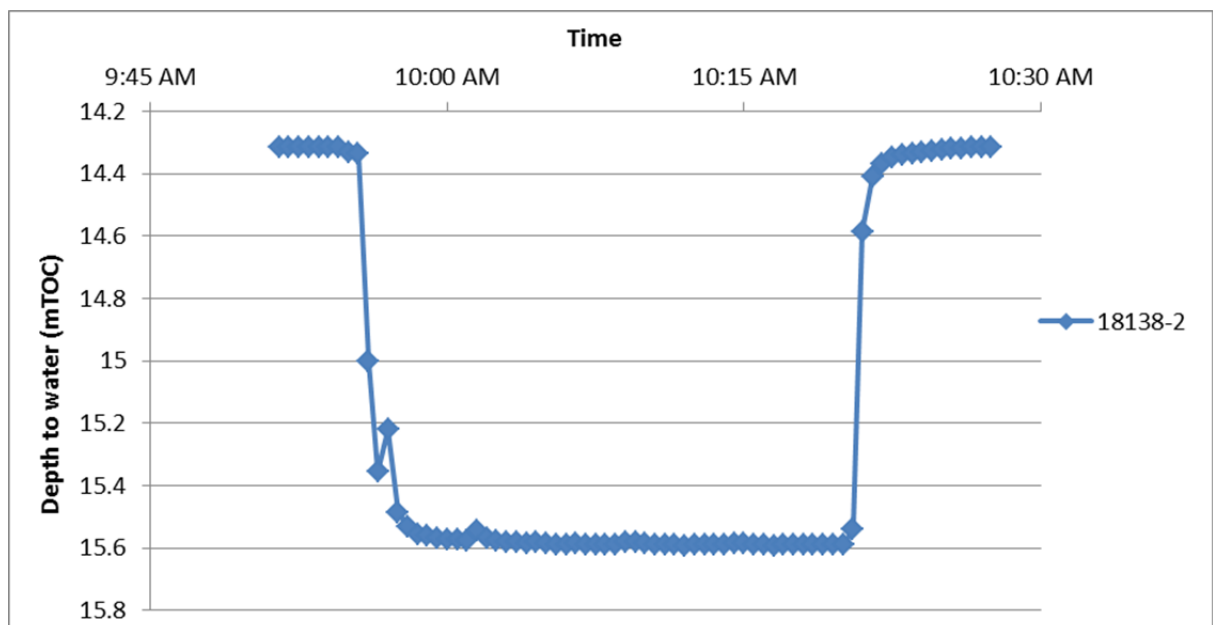


## Pumping Test

A pumping test was performed on piezometer 18138-1 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 22 mTOC and using a flow rate of 8.5 L/min. The results of the test are presented below. The report author may be contacted for the full data set.



A pumping test was performed on piezometer 18138-2 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 18 mTOC and using a flow rate of 5 L/min. The results of the test are presented below. 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 <sup>2+</sup>	K <sup>+</sup>	Mg <sup>2+</sup>	Na <sup>+</sup>	Si	Cl <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>
		TOC		μS/cm	°C	mg/L CaCo <sup>3</sup>	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18138-2	5/02/2012	14.32	7.31	880	29.8	297	30.7	18.8	20.7	93.4	38.9	54.4	72.8	45.41
18138-1	5/02/2012	14.32	7.32	853	29.8	243	31.4	19.1	21.4	85.4	39	55.0	72.6	37.47