



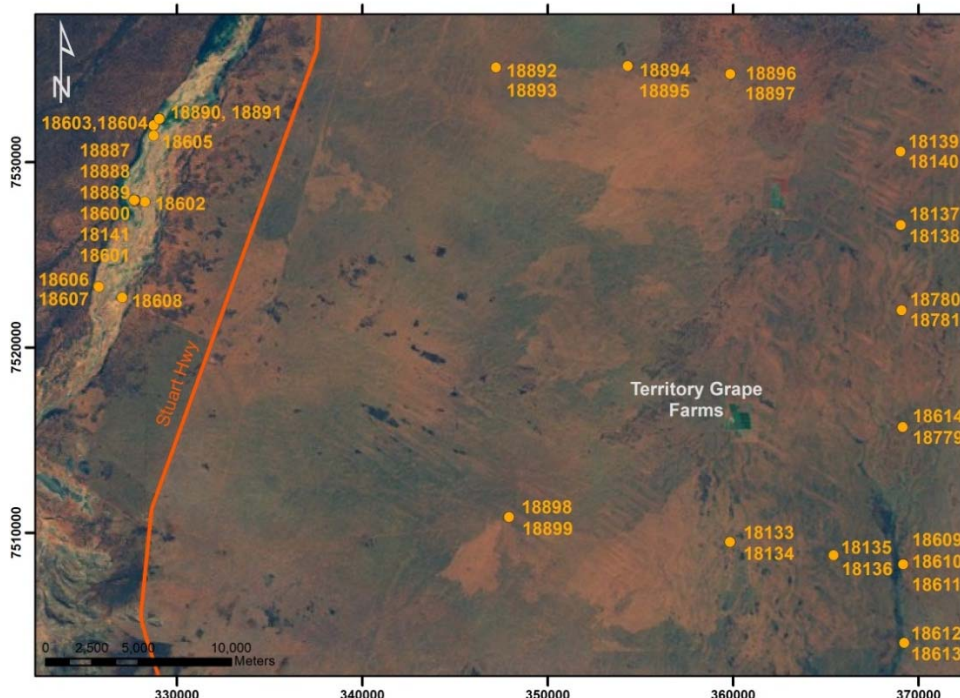
An Australian Government Initiative

# Groundwater Education Investment Fund Project

## Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	359839
Unique Well ID	18133	GPS Northing		7509493
Completion Date	23 November 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		78.0 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 8 L/s.			
Project Comments: 18133 is a triple completion multi-level piezometer. It is located adjacent to 18134. 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		-0.65	5.7	NA	0.0	5.7	NA	NA	NA
18133-3	50/PVC9	575.809	-0.585	54.1	50/1/PVC	-0.5	0.5	52.1	53.1	26.213
18133-2	50/PVC9	575.767	-0.555	62.7	50/1/PVC	-0.5	0.5	61.4	62.4	26.122
18133-1	50/PVC9	575.741	-0.525	72.1	50/1/PVC	-0.5	0.5	70.6	71.6	26.068

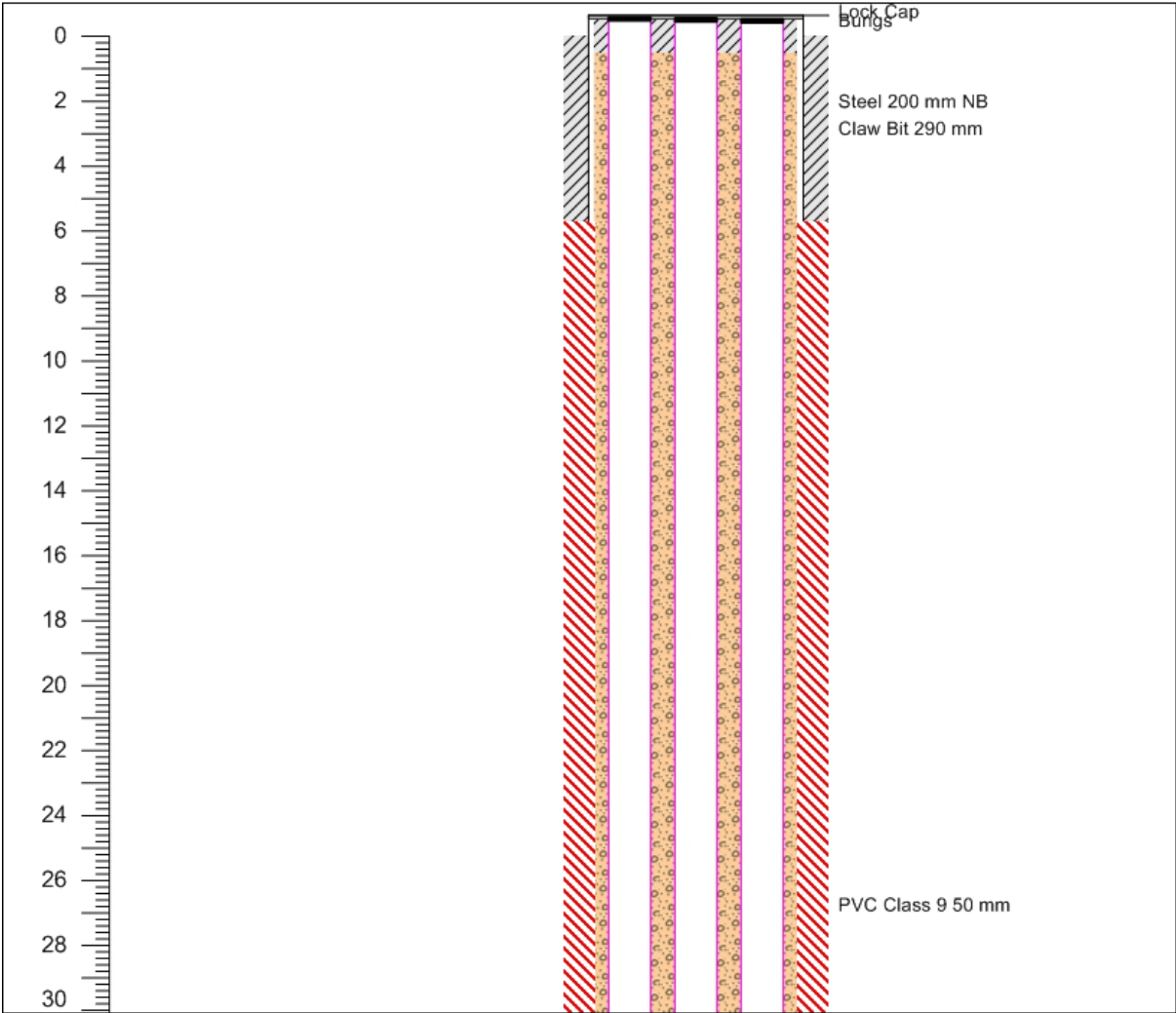


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

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

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# Well Completion Log



Page 1 of 3

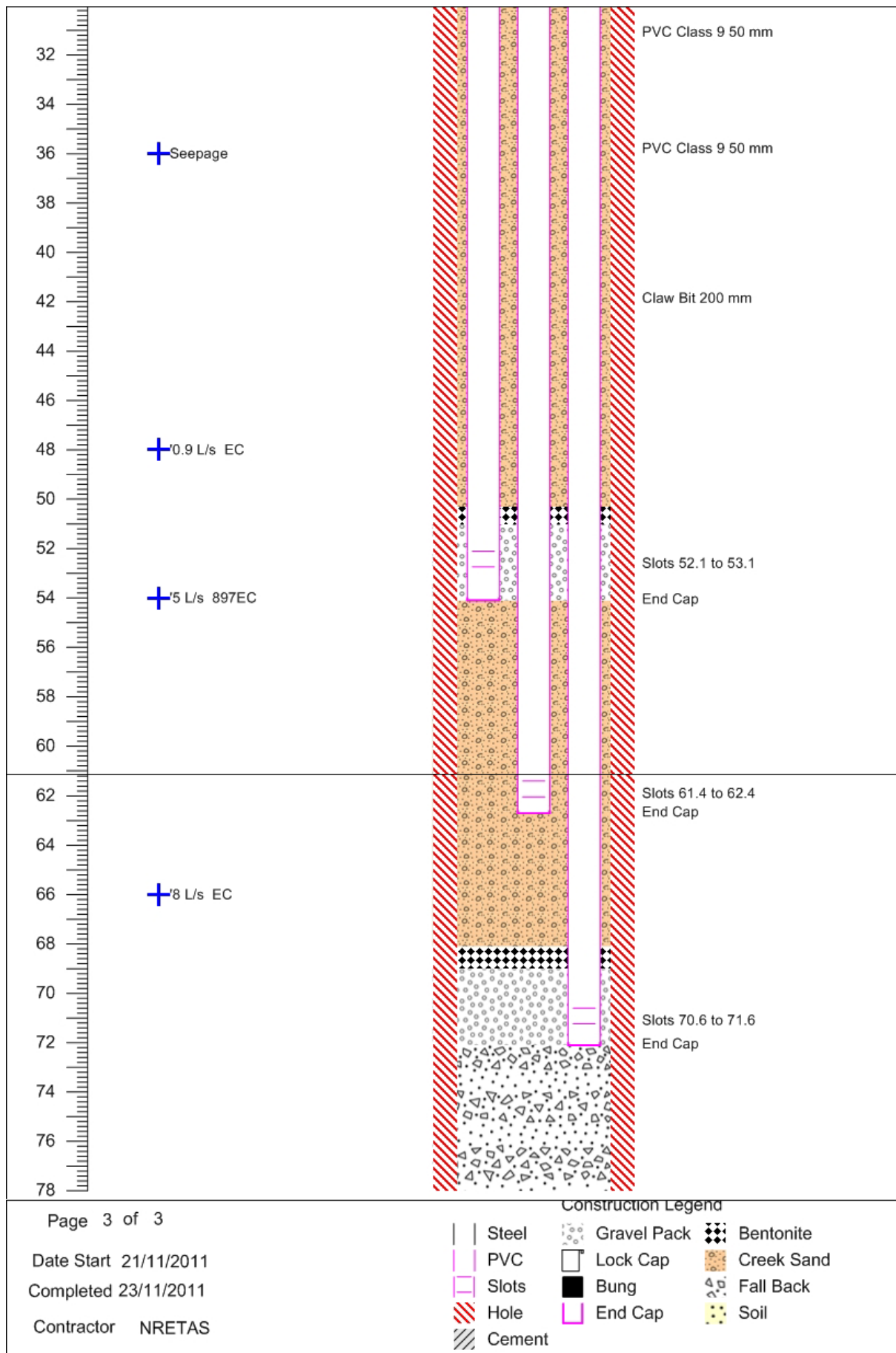
Date Start 21/11/2011

Completed 23/11/2011

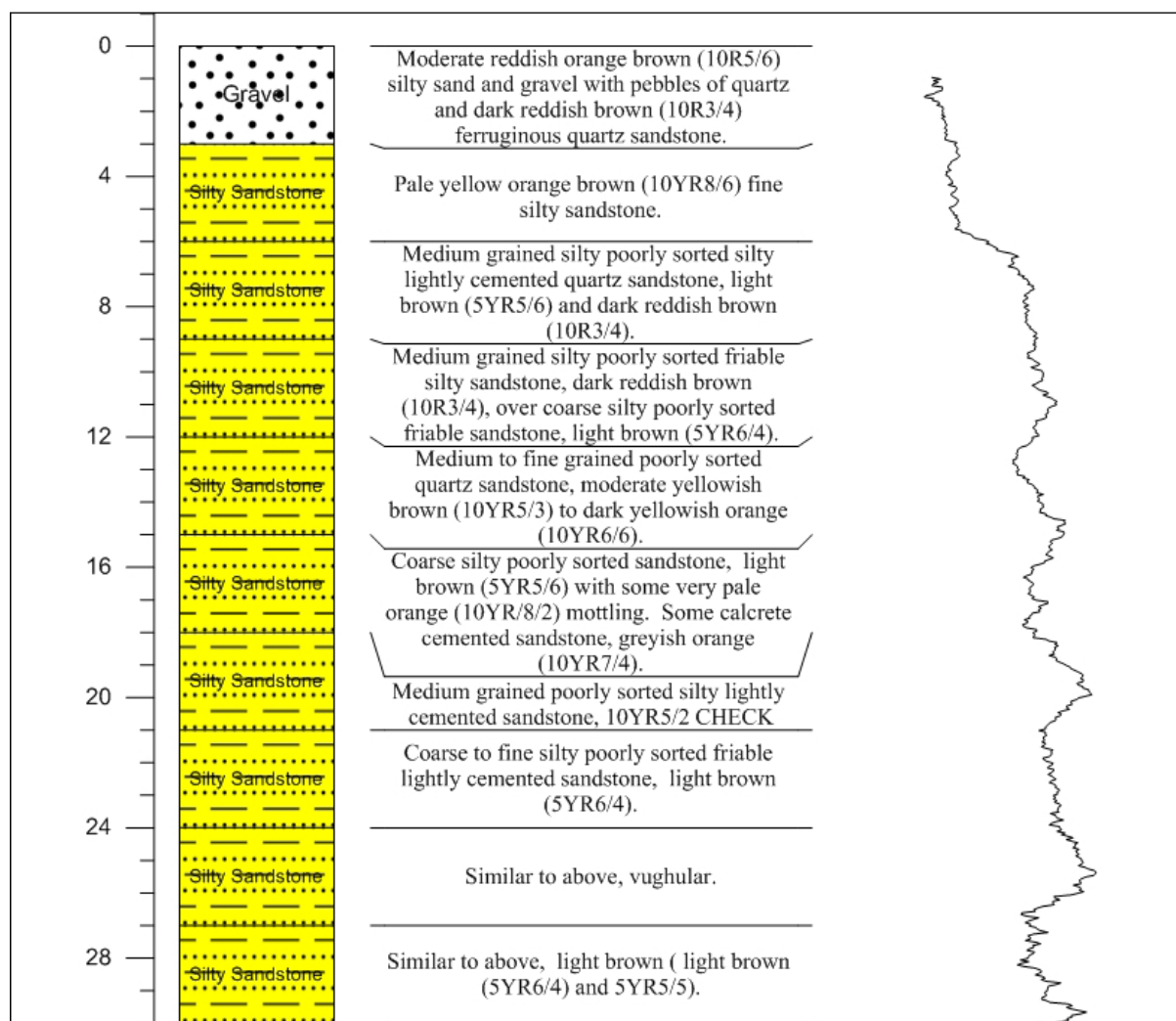
Contractor NRETAS

## Construction Legend

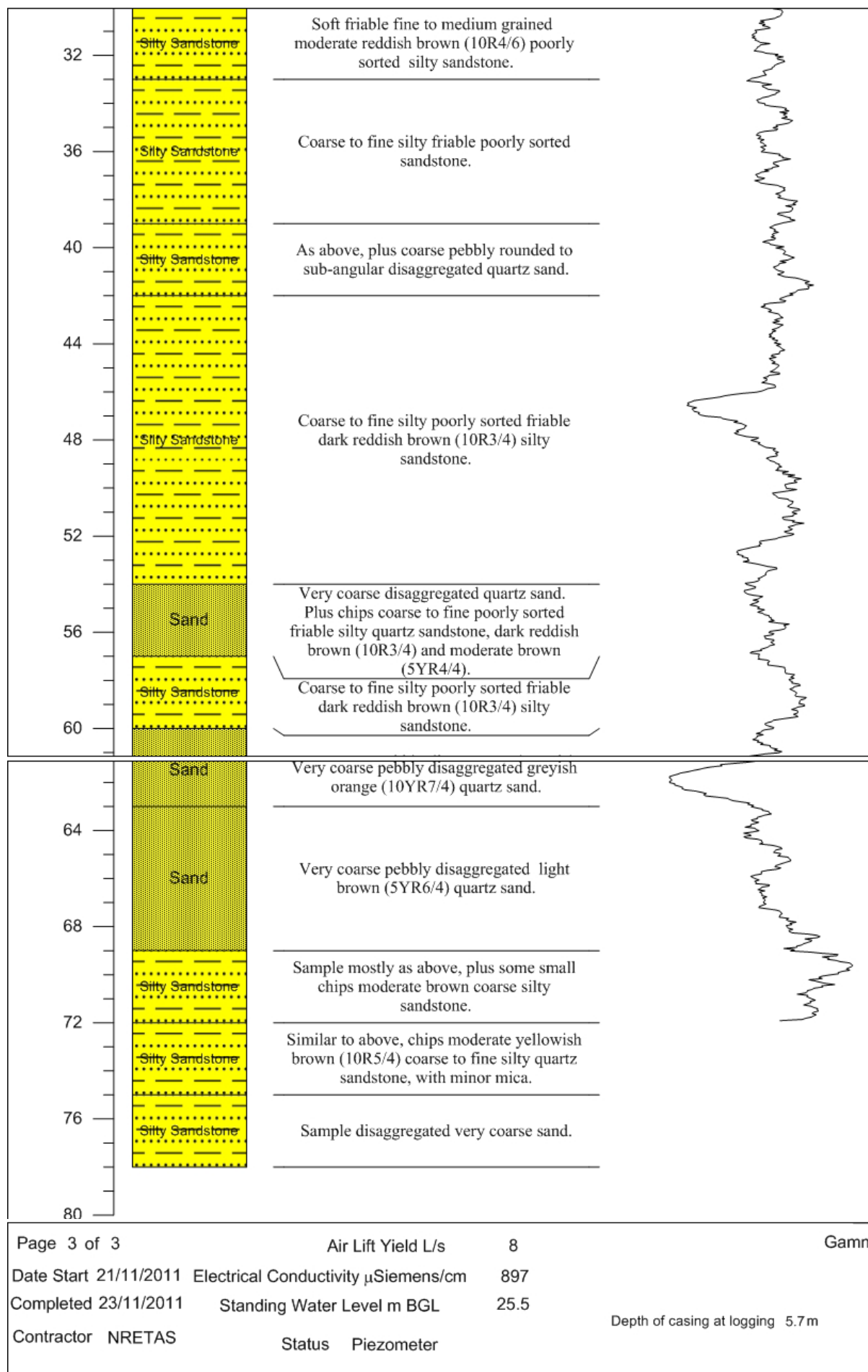
Steel	Gravel Pack	Bentonite
PVC	Lock Cap	Creek Sand
Slots	Bung	Fall Back
Hole	End Cap	Soil
Cement		



# Lithology Log



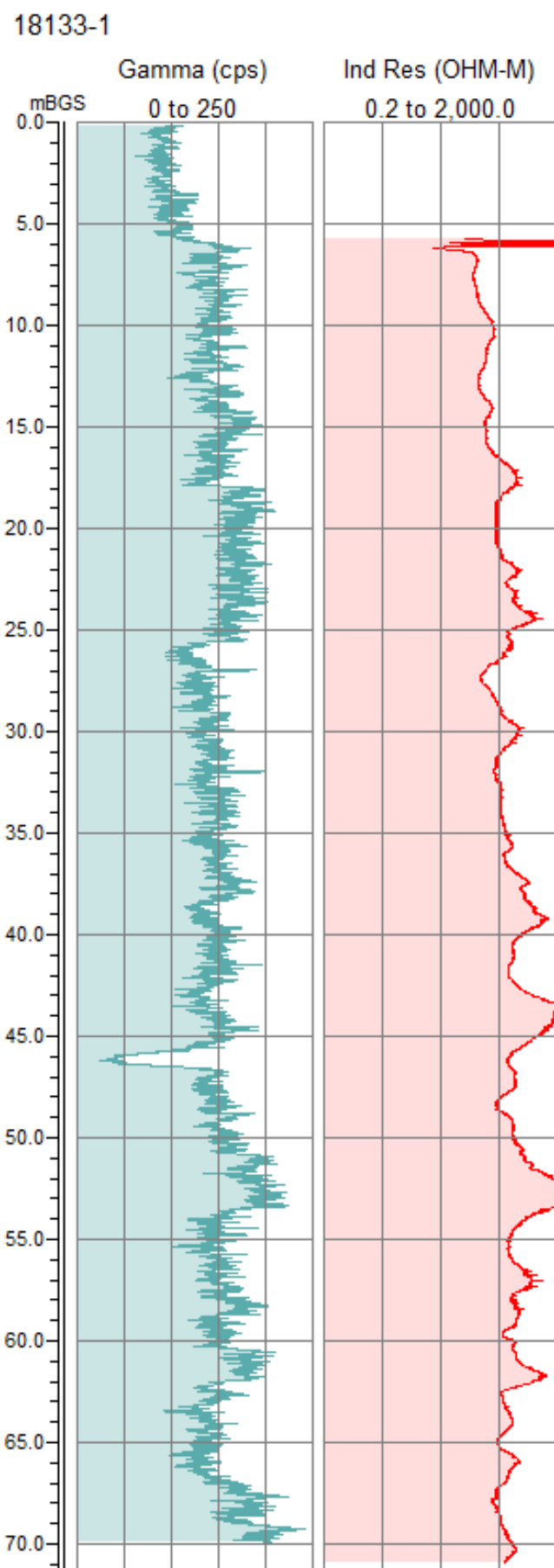
Page 1 of 3	Air Lift Yield L/s	8	Gamm
Date Start 21/11/2011	Electrical Conductivity $\mu$ Siemens/cm	897	
Completed 23/11/2011	Standing Water Level m BGL	25.5	
Contractor NRETAS	Status Piezometer		Depth of casing at logging 5.7 m





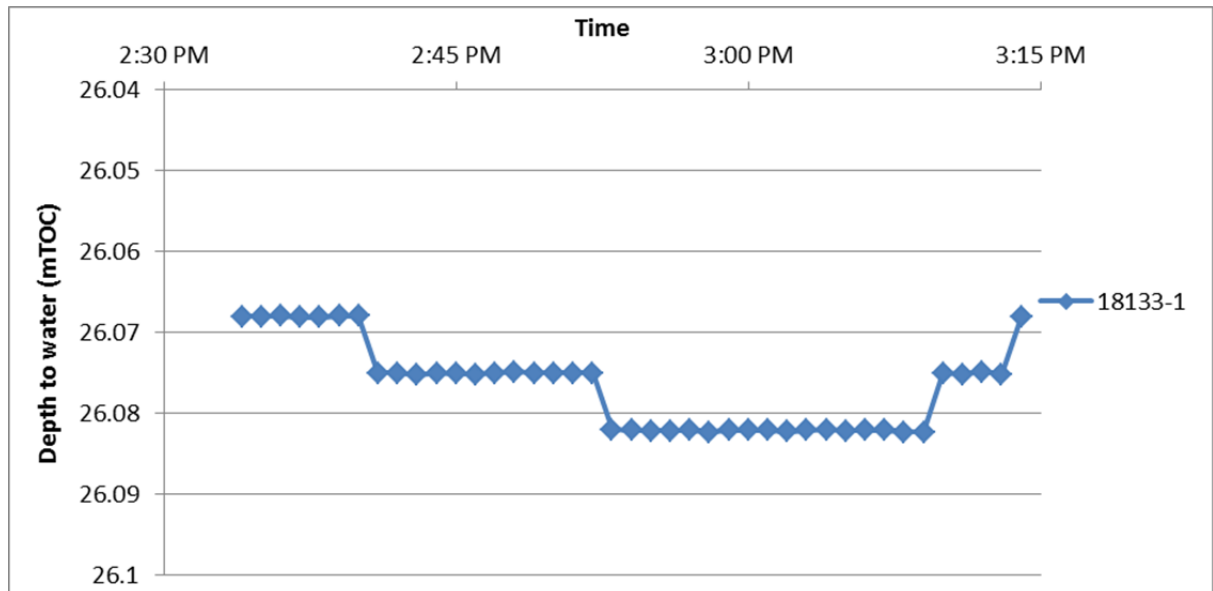
## Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18133-1. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

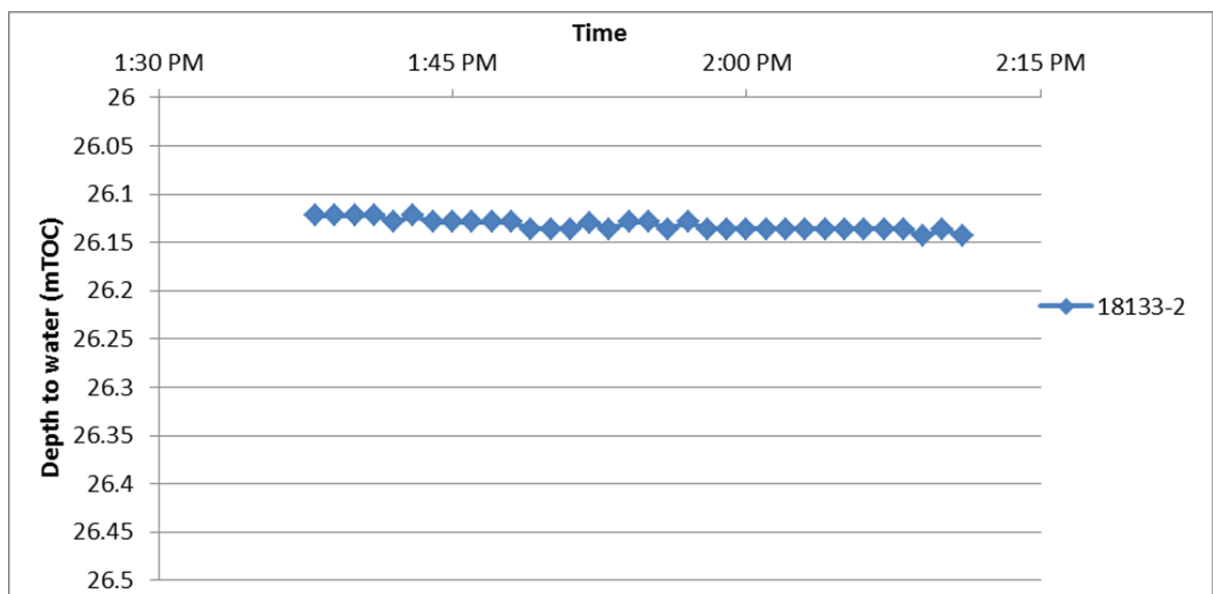


## Pumping Test

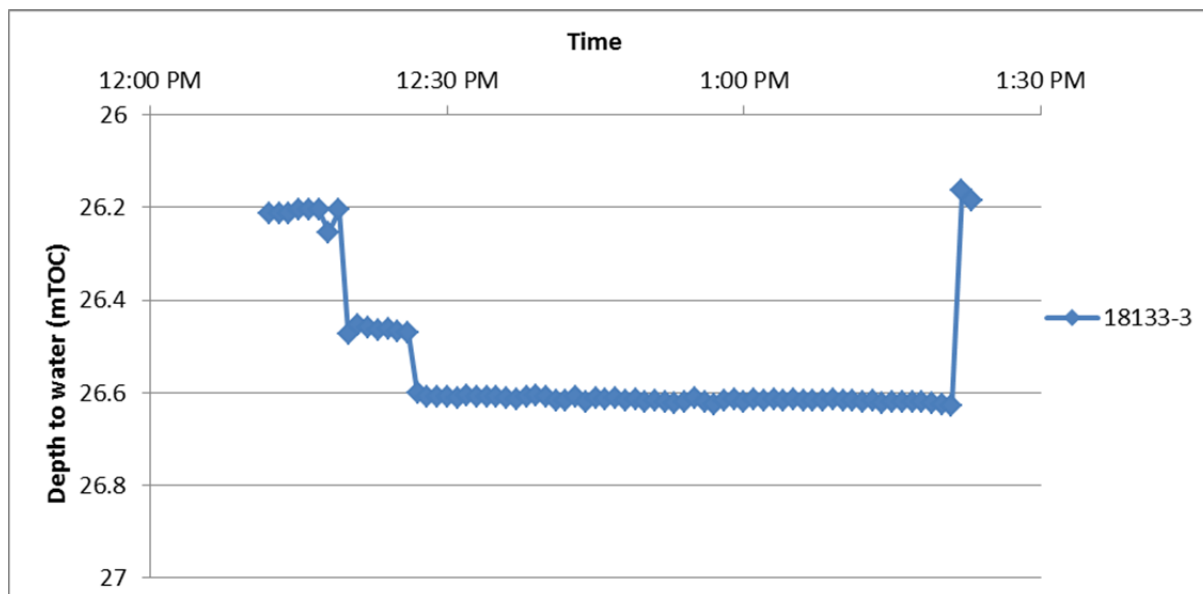
A pumping test was performed on piezometer 18133-1 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 30 mTOC and using a flow rate of 7.8 L/min. The results of the test are presented below. Very little drawdown was observed. The report author may be contacted for the full data set.



A pumping test was performed on piezometer 18133-2 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 30 mTOC and using a flow rate of 7.5 L/min. The results of the test are presented below. Very little drawdown was observed, and no recovery was observed. The report author may be contacted for the full data set.



A pumping test was performed on piezometer 18133-3 on 3/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 30 mTOC and using a flow rate of 7.5 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
18133-3	3/02/2012	26.2	6.95	1086	30.1	195	41.1	24.2	24	107	34.7	124	80	70.75
18133-2	3/02/2012	26.1	6.94	1308	30.3	204	56.6	25.3	27.9	124	31.8	160	88	120.89
18133-1	3/02/2012	26.07	6.87	1265	30.4	159	51.4	25.3	28.6	116	35.2	172	92	92.47