



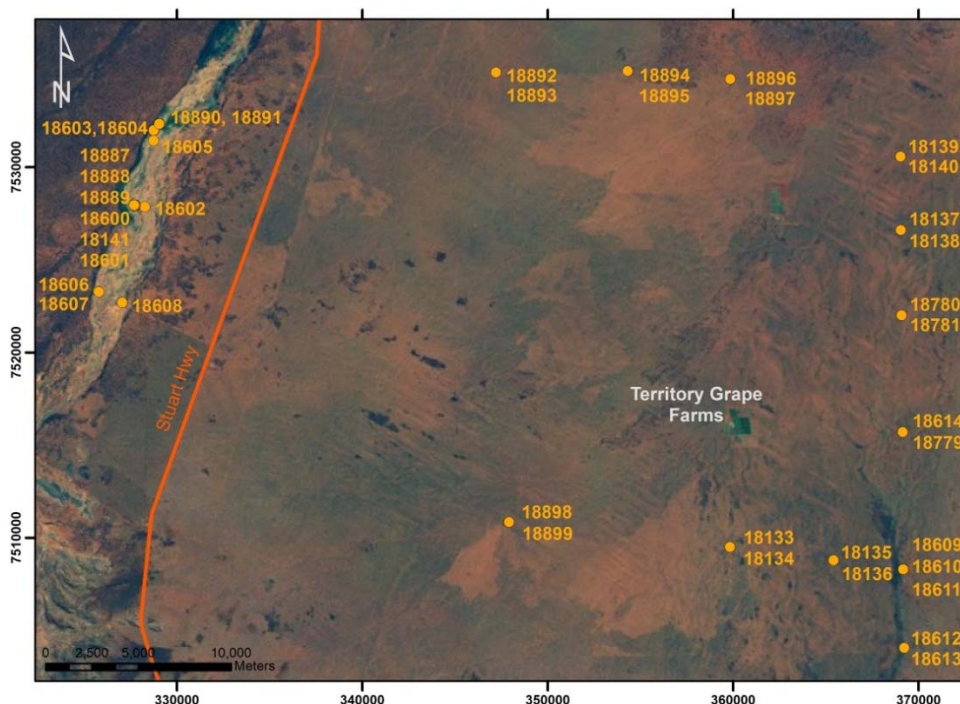
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 53)	369025
Unique Well ID	18140	GPS Northing		7530577
Completion Date	3 December 2011	Location		Pine Hill Station, NT
Drilled By	NRETAS	Installed By		NRETAS
Monument Type	Round-White-Swing Top	Depth Drilled		34.6 m
Monument Diameter/Width	216 mm	Drilled Diameter/Method		200 mm (min), Rotary Air
Development Details	Airlift 2.8 L/s.			
Project Comments: 18140 is a dual completion multi-level piezometer. It is located adjacent to 18139. 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
18140-2	50/PVC9	545.290	-0.765	16	50/1/PVC	0.0	0.3	14	15	11.921
18140-1	50/PVC9	545.279	-0.745	27	50/1/PVC	0.0	0.3	24	26	11.884

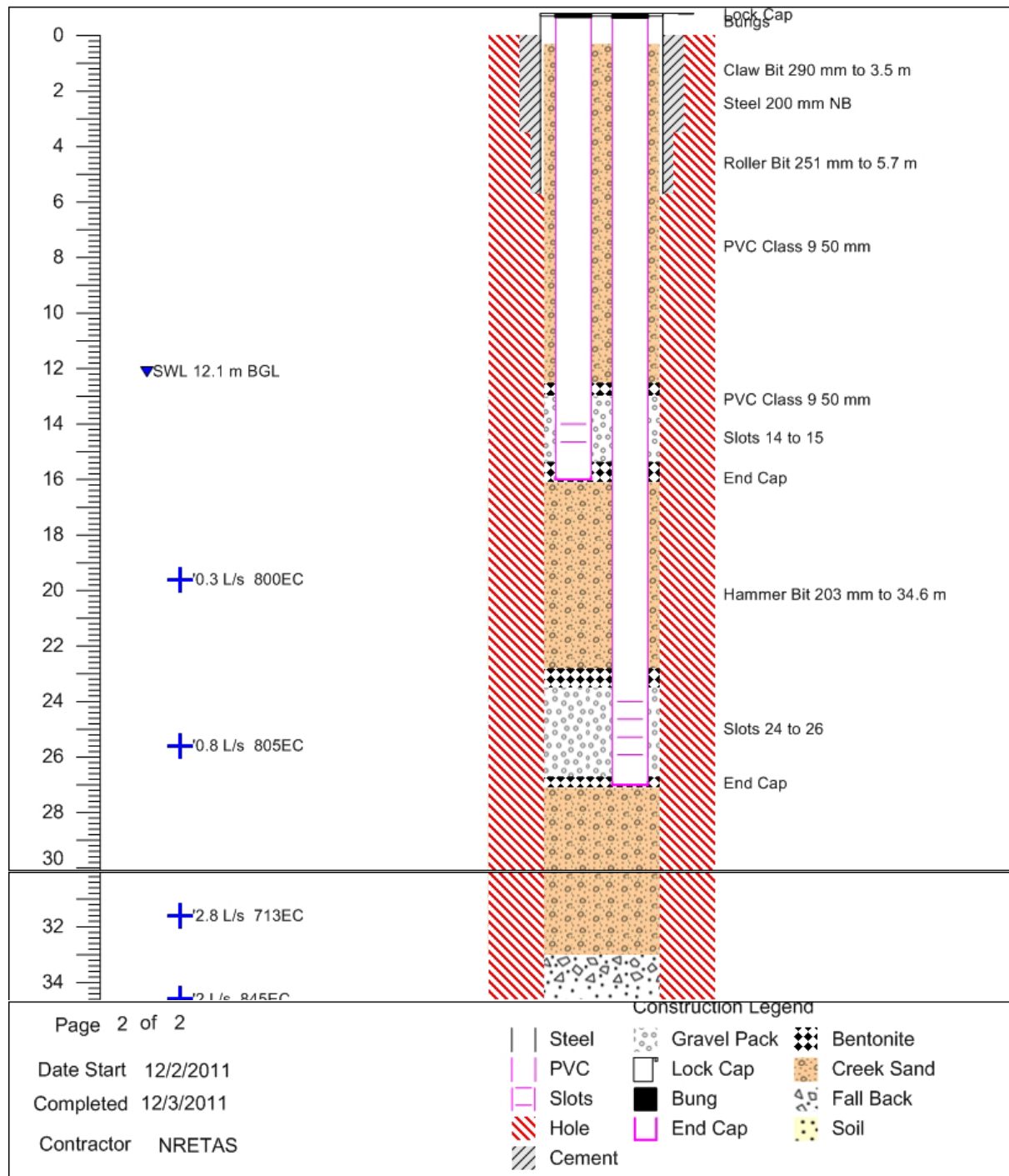


Map of Ti Tree Super Science Piezometer Locations, Pine Hill Station, NT.

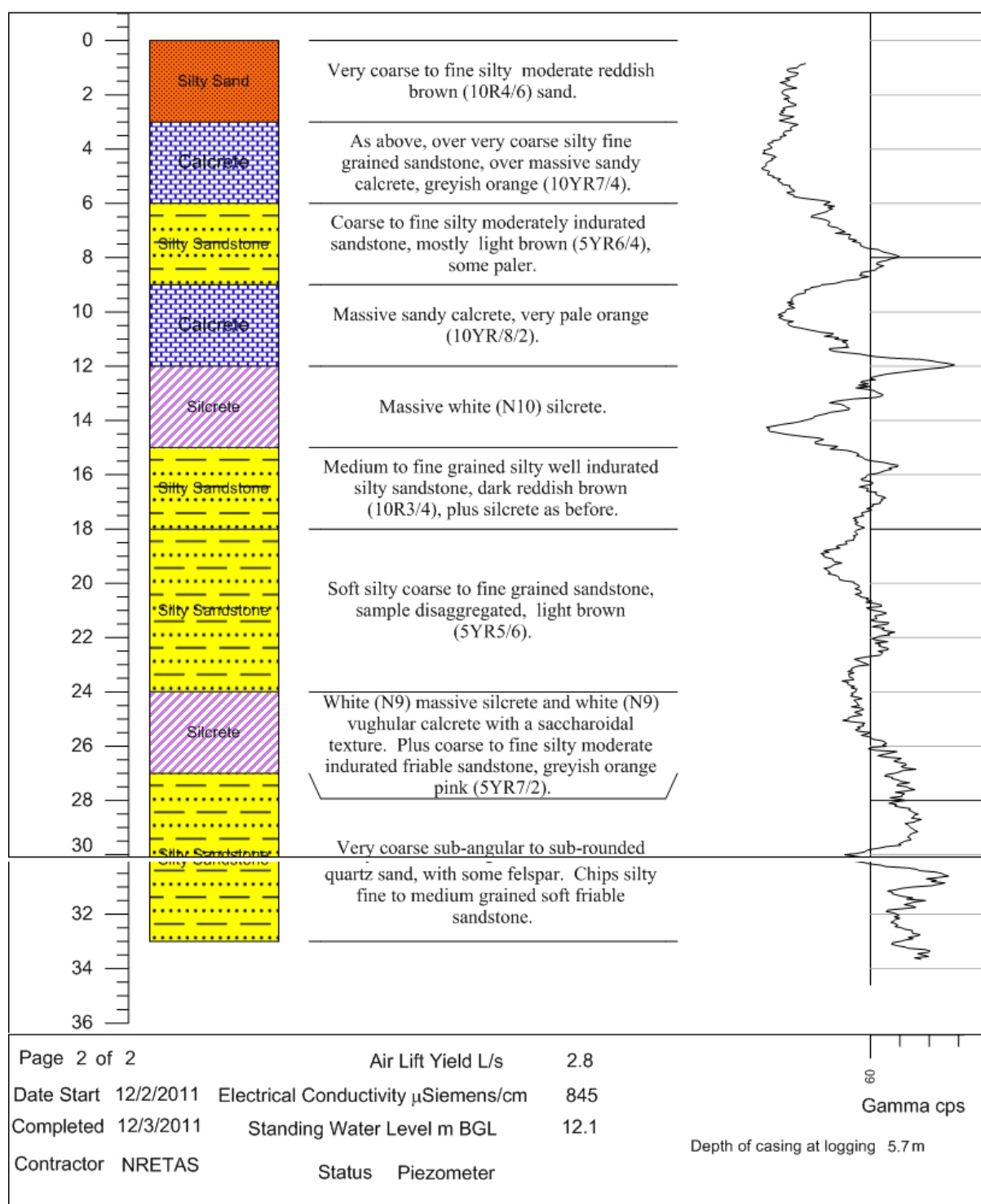
Note* Appendix includes Well Completion, Lithology and Geophysical Logs, Hydraulic Test and Chemical Analysis.

Infrastructure Report prepared by:	Contact Details:	Checked by: Prof Peter Cook
	stephanie.villeneuve@flinders.edu.au Office: 08 8201 2724	

Well Completion Log

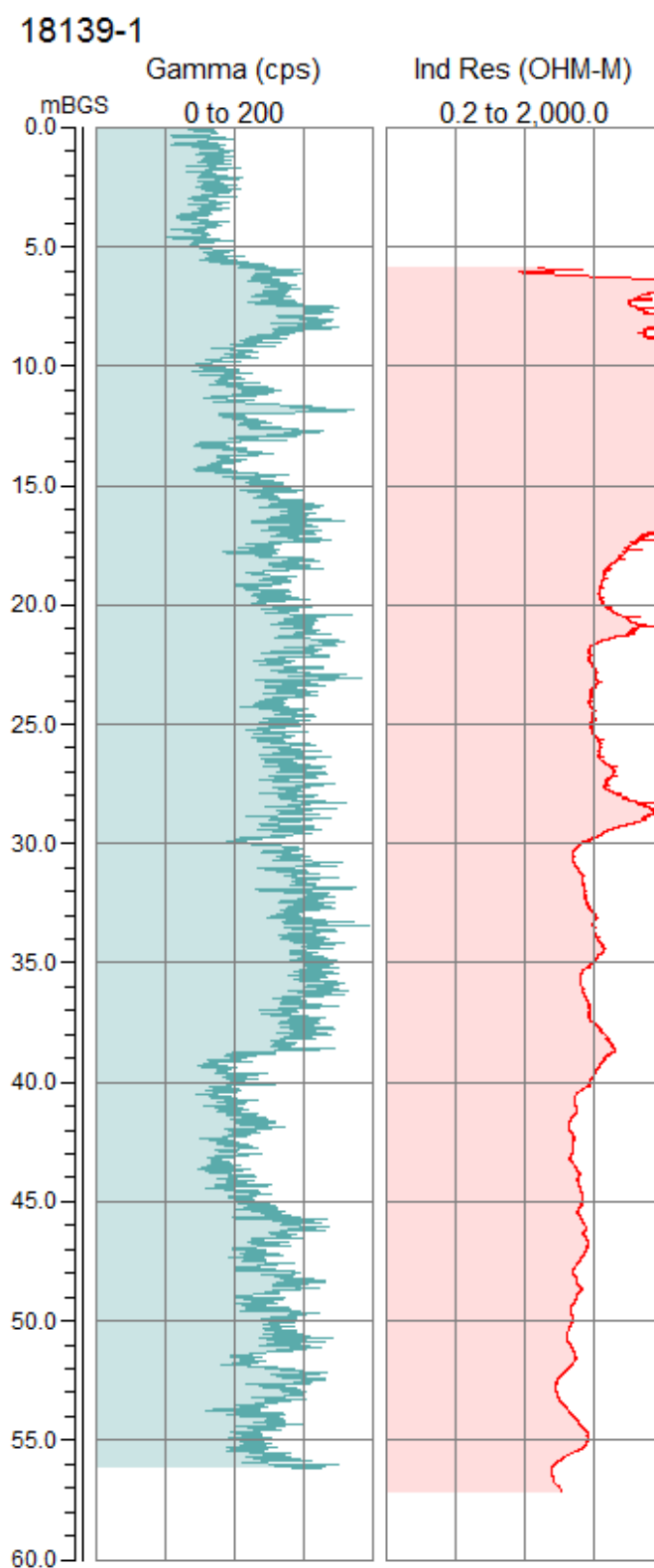


Lithology Log



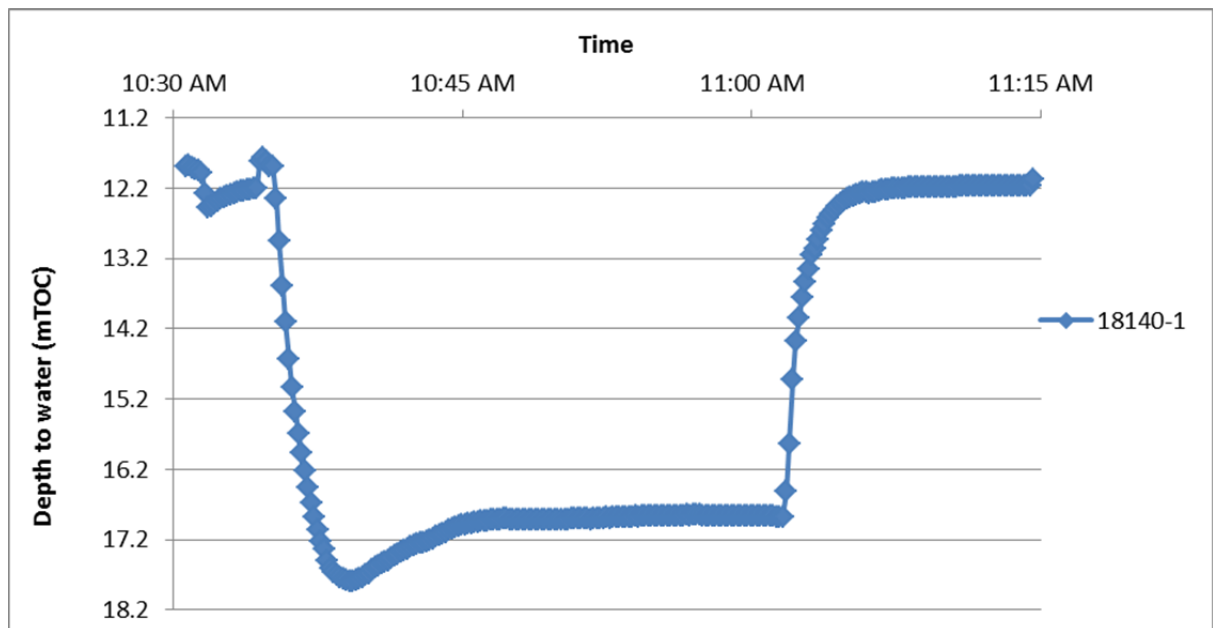
Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18139-1, adjacent to 18140. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

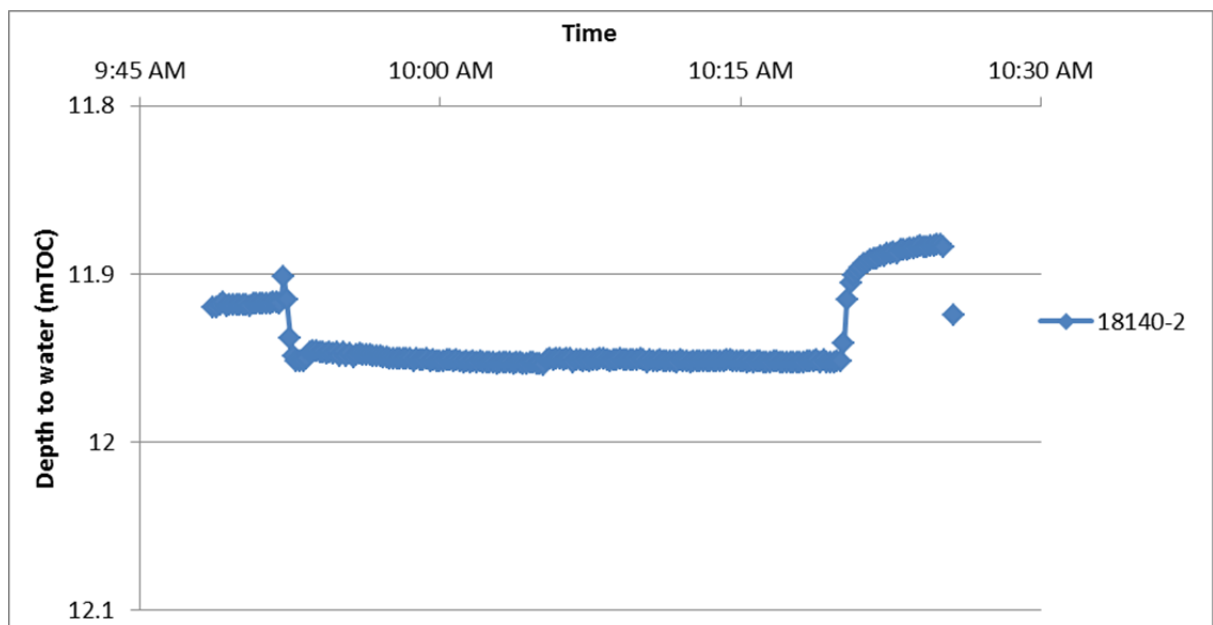


Pumping Test

A pumping test was performed on piezometer 18140-1 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 20 mTOC and using a flow rate of 8 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 18140-2 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 15 mTOC and using a flow rate of 6 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 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
18140-2	6/02/2012	11.92	7.35	968	29.2	269	32.8	23.1	25.6	94.8	37.6	79.7	80.4	43.88
18140-1	6/02/2012	11.88	7.29	1083	29.5	295	37.6	17.4	24.1	109	30.3	96.3	159	64.55