



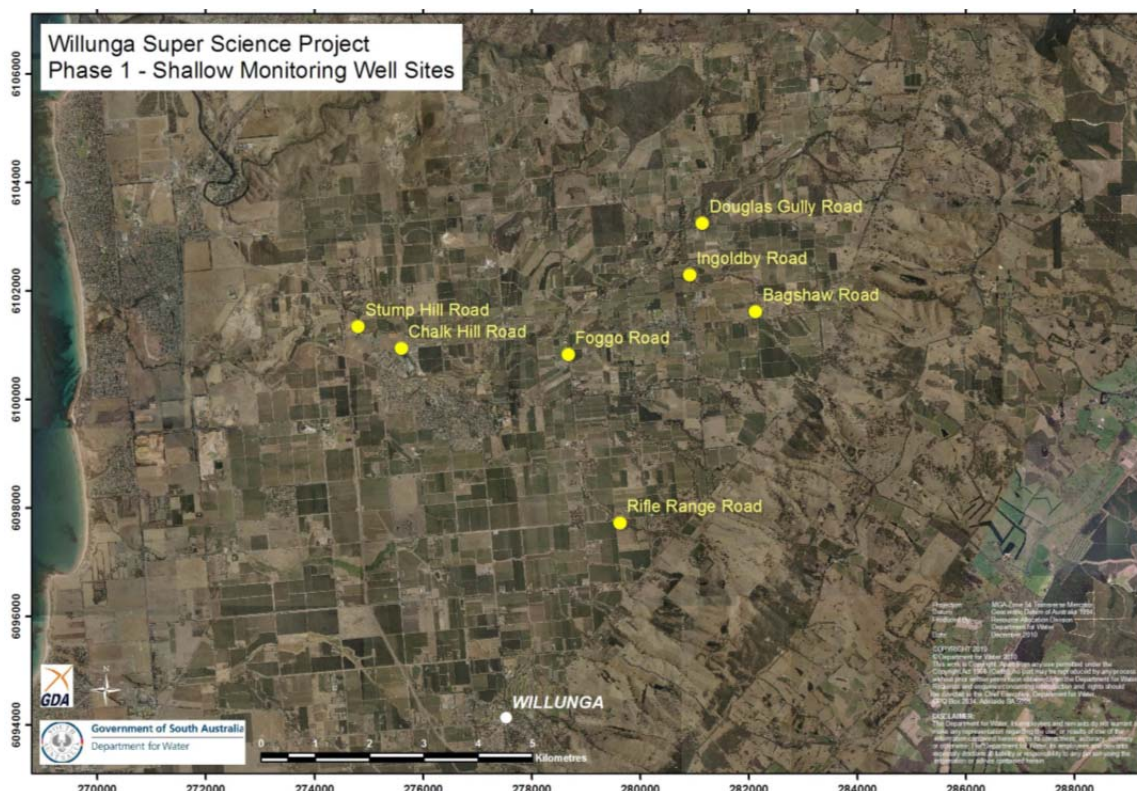
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

Borehole Type		Piezometer Monitoring Bore	Location	Willunga Super Science Site
Unique Well ID		WSS-DGR-2	Installed By	Geodrill
Completion Date		17/11/2010	Depth Installed	16 mBGL
Drilled By		Geodrill	Depth Drilled	16 mBGL
Monument Type		Lockable standpipe	Drilled Diameter/Method	125 mm, Auger
Monument Diameter/Width		80 mm	Screen Depth	14-16 mBGL
T.O.M. offset from G.L. (Top of Open Monument)		0.872 m	Screen Size/Aperture/Type	50 mm/0.4 mm/PVC18
PVC Casing to T.O.M offset		-6.2 cm	Level of Bentonite	12.5-13.5 mBGL
Ground Elevation (mAHD)		96.092	Casing Size/Type	50 mm/PVC18
GPS Easting	(MGA-94 Zone 54)	281148	SWL after Development	11.33 mTOC
GPS Northing		6103246	Development Details	Air lifted 2 hours

Project Comments: WSS-DGR-2 is a single piezometer monitoring bore, located in a reserve adjacent to Pedler Creek and south of Douglas Gully Road.



Map of Willunga Super Science Project Shallow Monitoring Well Sites

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

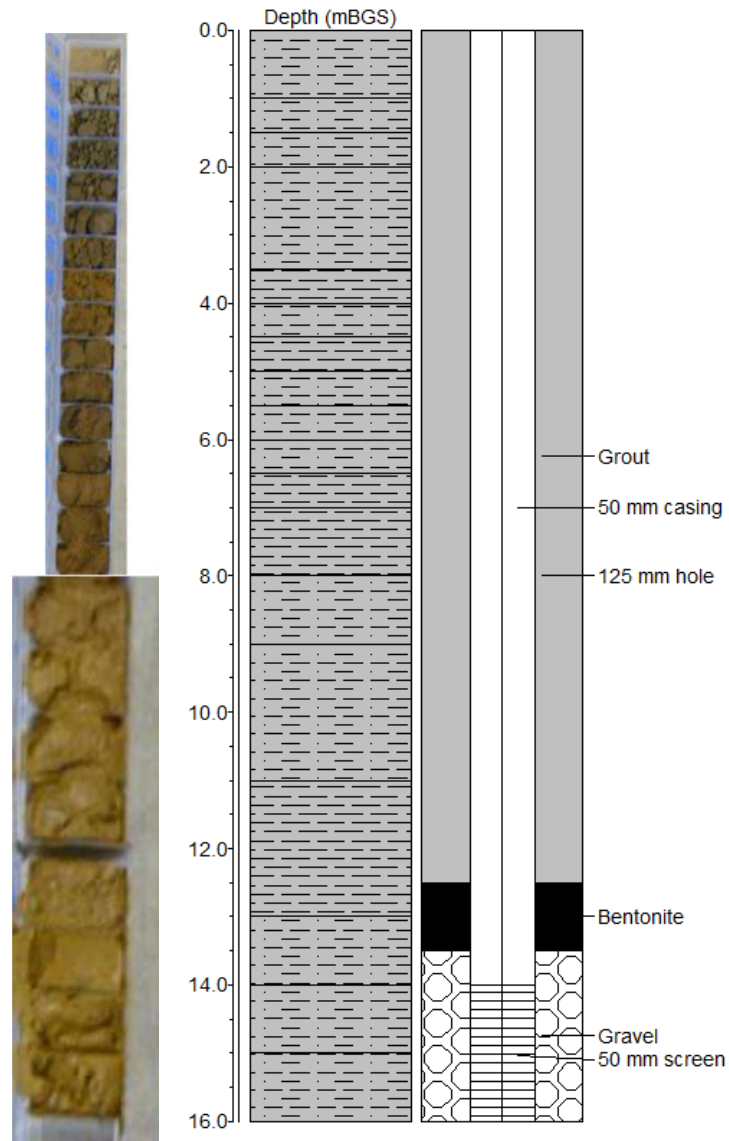
Infrastructure Report prepared by:	Contact Details:	Checked by:
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Location and Well Installation of WSS-DGR-1 and WSS-DGR-2

Lithology and Well Completion Log

WSS-DGR-2



0.0-1.0: Silty Clay: Yellow orange soft silty clay with poorly sorted sub angular to round medium sand to coarse gravel

1.0-1.5: Silty Clay: Light brown silty clay with 10-20% poorly sorted sub-round to round medium to coarse sand and some fine gravel

1.5-2.0: Silty Clay: Light brown silty clay with <5% well sorted and rounded medium sand and some fine round gravel

2.0-3.5: Silty Clay: Light brown silty soft to medium stiff clay with <5% moderately sorted sub-round to rounded medium sand

3.5-4.0: Clay: Orange brown medium stiff clay with <5% moderately sorted and rounded medium sand and some sub-rounded coarse sand and fine gravel

4.0-4.5: Silty Clay: Orange brown silty medium stiff clay with <5% moderately sorted and rounded medium to coarse sand

4.5-5.0: Clay: Orange brown medium to stiff clay with <5% moderately sorted and rounded medium to coarse sand

5.0-5.5: Silty Clay: Orange brown silty medium stiff clay with <5% moderately sorted and rounded medium to coarse sand

5.5-6.0: Silty Clay: Orange brown silty clay with well sorted and rounded medium sand and some sub-angular fine gravel components

6.0-6.5: Silty Clay: Orange brown silty medium stiff clay with 10-15% moderately sorted medium to coarse sand

6.5-7.0: Clay: Orange brown medium stiff clay with 10-15% well sorted sub-angular to rounded medium sand

7.0-8.0: Clay: Yellow orange soft to medium stiff clay with 10-20% moderately sorted sub-round to rounded medium to coarse sand

8.0-9.0: Silty Clay: Yellow orange silty soft clay with 10-20% well sorted, sub rounded to round medium sand

9.0-11.0: Silty Clay: Yellow orange silty clay with 10-20% well sorted and rounded medium sand

11.0-13.0: Clay: Yellow orange soft clay with 10-20% well sorted, sub-angular to rounded medium sand

13.0-14.0: Silty Clay: Yellow orange silty clay with 10-20% moderately sorted, sub-angular to rounded medium to coarse sand with some minor calcareous components

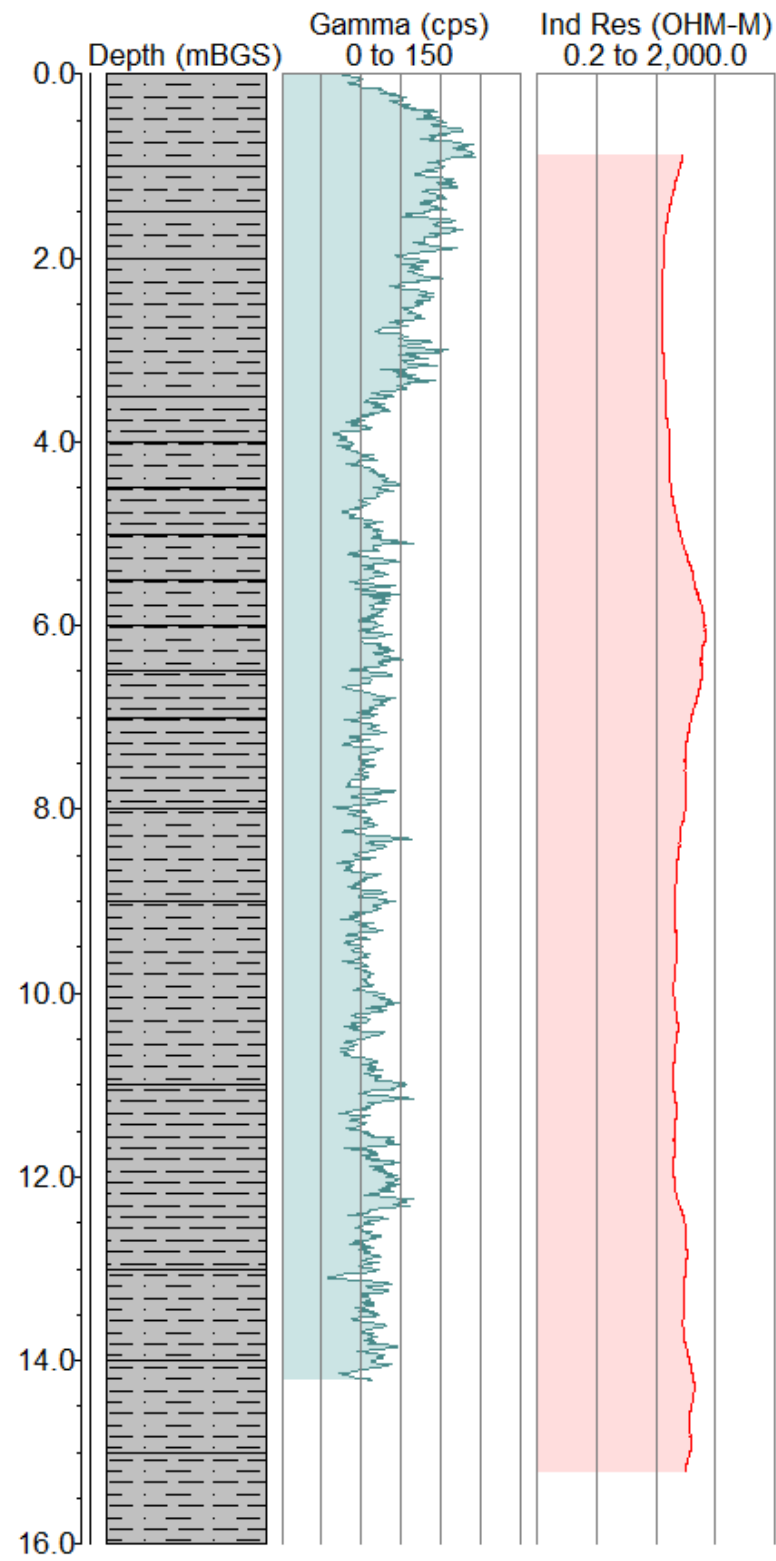
14.0-15.0: Silty Clay: Yellow orange silty clay with 10-20% moderately sorted, sub-angular to rounded medium sand with some minor calcareous components

15.0-16.0: Silty Clay: Yellow orange silty clay with 10-20% moderately sorted, sub-angular to rounded medium to coarse sand with some minor calcareous components

Geophysical Logs

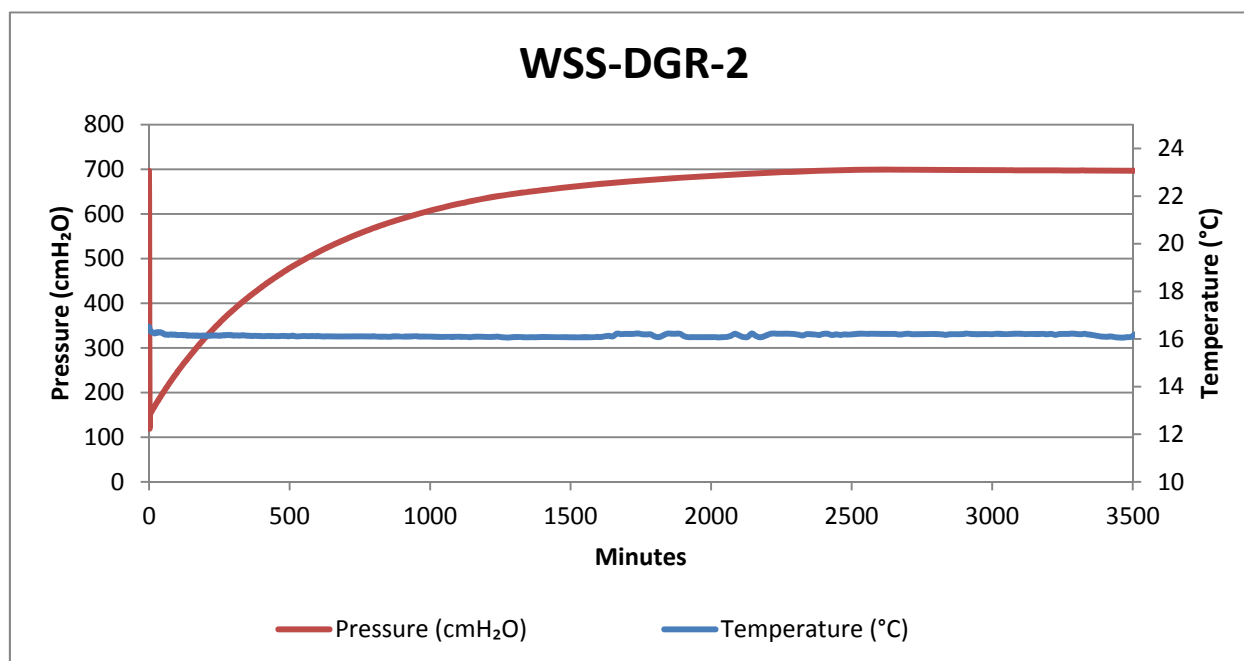
The portable Mount Sopris logging system was used to collect geophysical data from bore WSS-DGR-2, the deepest peizometer. The 2PGS probe was used to collect natural gamma measurements, and the 2PIA probe was used to measure conductivity/induced resistivity.

WSS-DGR-2



Slug Test

A slug test was performed on WSS-DGR-2 by placing a level logger at a depth of 12 mTOC and using a pump (11 mTOC) to remove the standing water column above the pump. The results of the test are presented below. The report author may be contacted for the full data set.



Chemical Analysis

The results of major ion chemistry on WSS-DGR-2 are presented below, along with chemical parameters measured in the field.

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses @ CSIRO ASU								
			pH	EC	Temp	Alkalinity	E.C.	Total Alkalinity	F ⁻	Cl ⁻	Br ⁻	NO ₃ ⁻	SO ₄ ⁼	Ca	K
		mTOC		μS/cm	°C	meq/L	μS/cm	meq/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS-DGR-2	13/12/2011	4.955	6.28	3209	19.4	2.2	3489	2.5	<0.2	1100	3.3	0.8	120	105	6.27
							Mg	Na	S	Al	As	B	Cd	Co	Cr
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
							78.8	455	31.7	<0.05	<0.05	0.14	<0.05	<0.05	<0.05
							Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Se
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
							<0.05	<0.1	0.18	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05
							Si	Sr	Zn						
							mg/L	mg/L	mg/L						
28.9	1.05	0.08													