



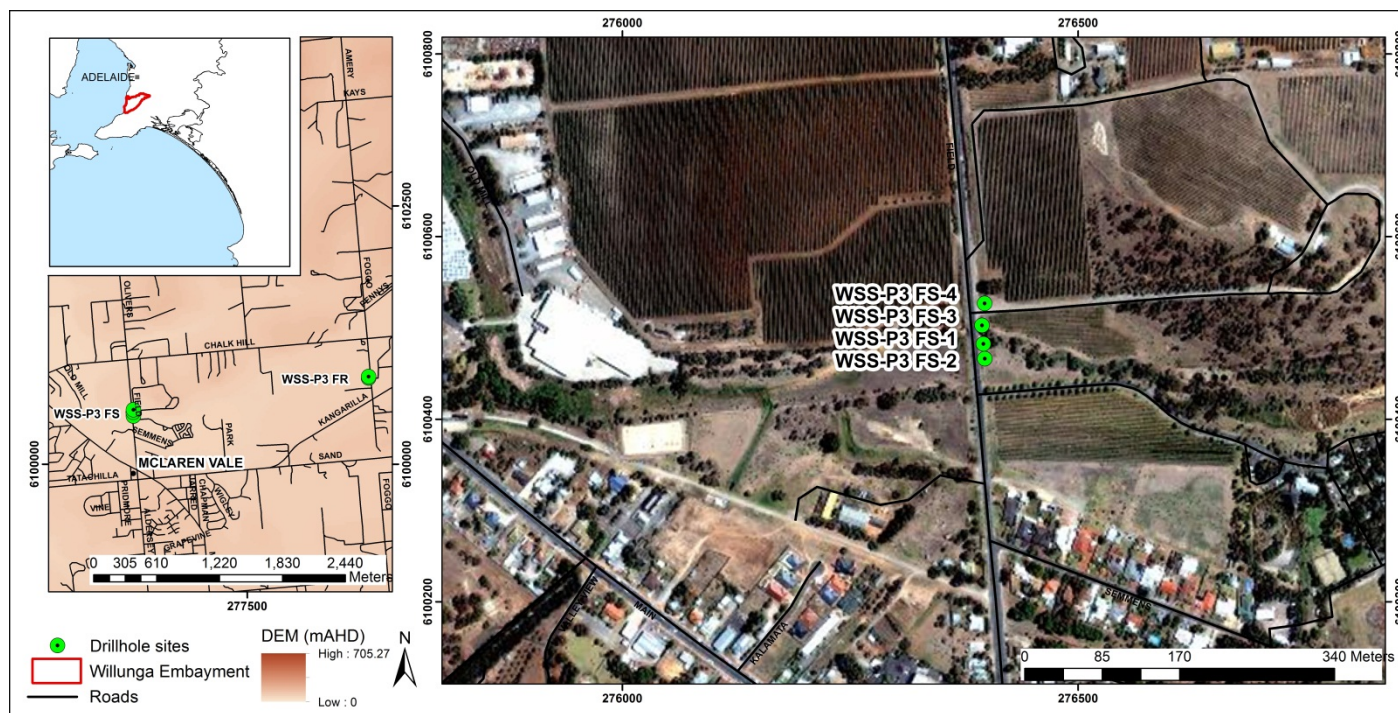
An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

| Borehole Type | | Piezometer Monitoring Bore | Location | Willunga Super Science Site |
|--|------------------|----------------------------------|---------------------------|----------------------------------|
| Unique Well ID | | WSS-P3FS-3 | Installed By | Town & Country Drilling Services |
| Completion Date | | 17/12/2012 | Depth Installed | 5.85 mBGS |
| Drilled By | | Town & Country Drilling Services | Depth Drilled | 8 mBGS |
| Monument Type | | Flush mounted | Drilled Diameter/Method | 150 mm/air-blade |
| Monument Diameter/Width | | 165 mm | Screen Depth | 4.85-5.85 mBGS |
| T.O.M. offset from G.L. (Top of Open Monument) | | 0 m | Screen Size/Aperture/Type | 50 mm/slotted/PVC 18 |
| PVC Casing to T.O.M offset | | -0.069 m | Level of Bentonite | 4-4.5 mBGS |
| Ground Elevation (mAHD) | | 48.11 | Casing Size/Type | 50 mm/PVC 18 |
| GPS Easting | (MGA-94 Zone 54) | 276395 | SWL after Development | 3.0 mTOC |
| GPS Northing | | 6100503 | Development Details | Submersible pump |

Project Comments: WSS-P3FS-3 is a single piezometer monitoring bore, adjacent to Pedler Creek on Field Street, McLaren Vale.



Map of Willunga Super Science Project Shallow Monitoring Well Sites

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

| Infrastructure Report prepared by: | Contact Details: | Checked by: |
|------------------------------------|--|---------------------|
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Lithology

WSS-P3FS-3

mBGS

0.0

SAND, silt: Top soil. Brown. Sandy Loam. Organic matter. Roots present.

1.0

CLAY, silt: Clay. Brown. Stiff. Very fine grained.

2.0

3.0

SAND, clay: Sand. Yellowish Orange. Fine grained. Some calcrete flecks and nodules 0.5-2mm. Low HCL reaction.

4.0

5.0

6.0

SAND, clay: Sand. Light brown/fawn. Fine-medium grained well sorted sub-rounded. Major milky quartz and sandstone gravels sub-angular/sub-rounded 5-30mm.

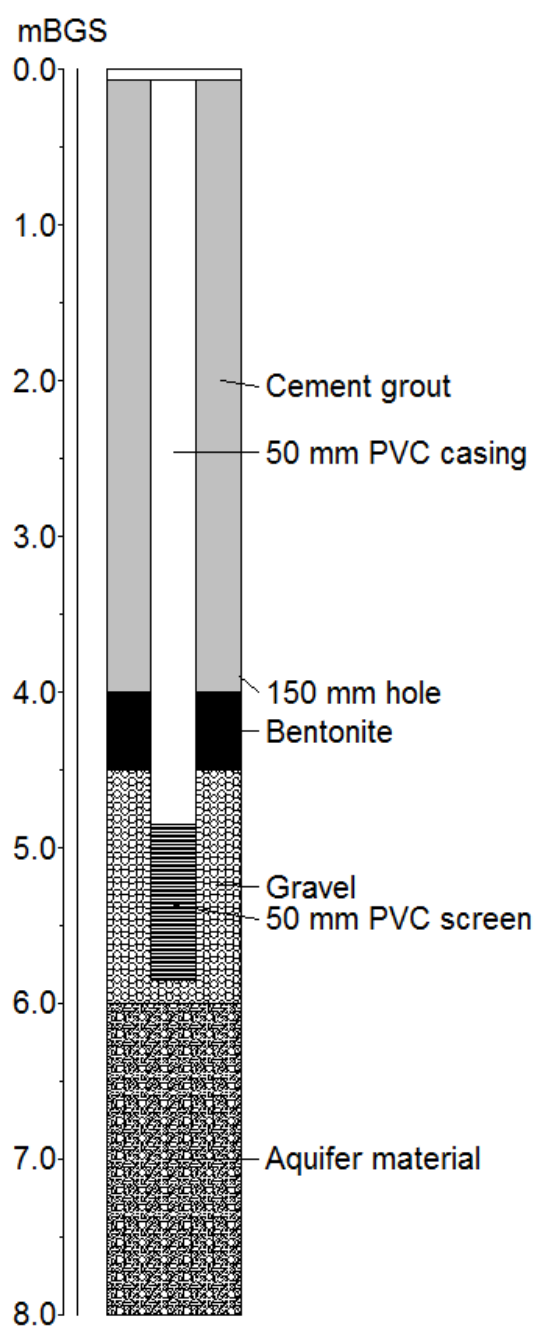
7.0

8.0

CLAY, sand: Clay. White/grey. Very Stiff. Medium grained. Minor quartz/siltstone/sandstone gravels 1-5mm sub-angular/sub-rounded.

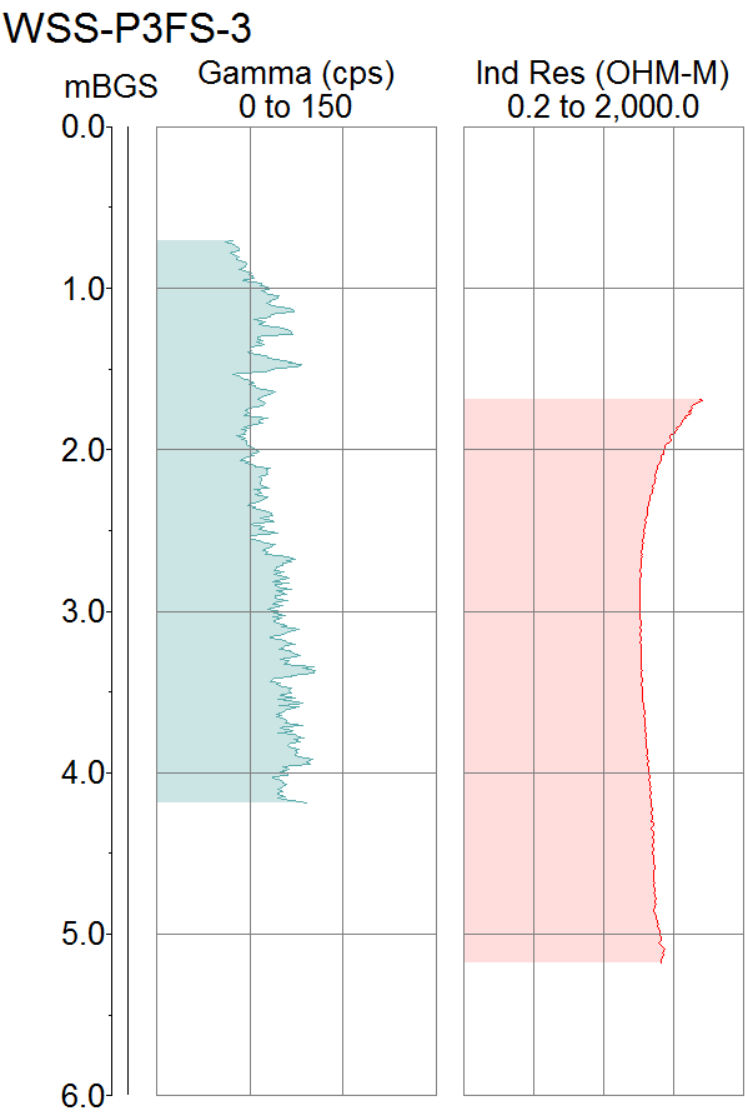
Well Completion Log

WSS-P3FS-3



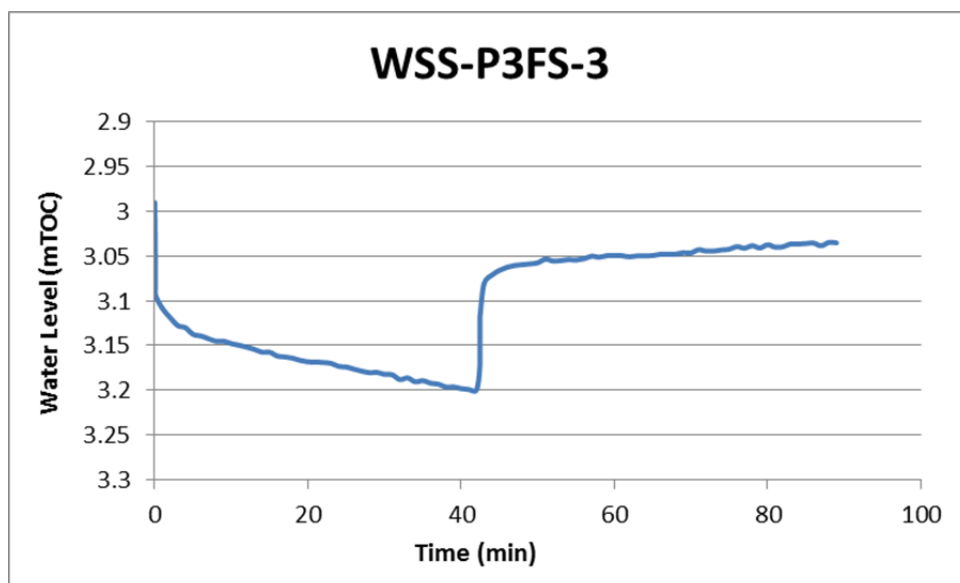
Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore WSS-P3FS-3. 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 WSS-P3FS-3 on 17/01/2013 with a water level logger and a submersible pump using a flow rate of 8.1 L/min. 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-P3FS-3 are presented below, along with chemical parameters measured in the field.

| Well ID | Date Sampled | SWL mTOC | Field Parameters | | | | Laboratory Analyses @ CSIRO ASU | | | | | | | | | | | |
|------------|--------------|-------------|------------------|-------|------|------------|---------------------------------|-------|------------------|----------------|-----------------|-----------------|------------------------------|------------------------------|-------|------|-------|------|
| | | | pH | EC | Temp | Alkalinity | pH | E.C. | Total Alkalinity | F ⁻ | Cl ⁻ | Br ⁻ | NO ₃ ⁻ | SO ₄ ⁼ | Ca | K | Mg | |
| | | | | μS/cm | °C | meq/L | | μS/cm | meq/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L |
| WSS-P3FS-3 | 17/01/2013 | 3.00 | 7.05 | 2933 | 18.7 | 6.8 | 7.7 | 3982 | 7.6 | 0.1 | 884 | 2.3 | 1.0 | 444 | 224 | 12.8 | 83.2 | |
| | | | | | | | Na | S | Al | As | B | Cd | Co | Cr | Cu | Fe | Mn | |
| | | | | | | | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | |
| | | | | | | | 498 | 137 | <0.05 | <0.05 | 0.162 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | |
| | | | | | | | Mo | Ni | P | Pb | Sb | Se | Si | Sr | Zn | | | |
| | | | | | | | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | | | |
| | | | | | | | <0.05 | <0.05 | <0.1 | <0.05 | <0.1 | <0.05 | 19.9 | 2.52 | <0.05 | | | |