### Borehole Infrastructure Report

<table>
<thead>
<tr>
<th>Borehole Type</th>
<th>Piezometer Monitoring Bore</th>
<th>Location</th>
<th>Willunga Super Science Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Well ID</td>
<td>WSS-CHR-1</td>
<td>Installed By</td>
<td>Geodrill</td>
</tr>
<tr>
<td>Completion Date</td>
<td>23/11/2010</td>
<td>Depth Installed</td>
<td>8.5 mBGL</td>
</tr>
<tr>
<td>Drilled By</td>
<td>Geodrill</td>
<td>Depth Drilled</td>
<td>8.5 mBGL</td>
</tr>
<tr>
<td>Monument Type</td>
<td>Lockable standpipe</td>
<td>Drilled Diameter/Method</td>
<td>125 mm, Auger</td>
</tr>
<tr>
<td>Monument Diameter/Width</td>
<td>80 mm</td>
<td>Screen Depth</td>
<td>6.5-8.5 mBGL</td>
</tr>
<tr>
<td>T.O.M. offset from G.L.</td>
<td>0.845 m</td>
<td>Screen Size/Aperture/Type</td>
<td>50 mm/0.4 mm/PVC18</td>
</tr>
<tr>
<td>(Top of Open Monument)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC Casing to T.O.M offset</td>
<td>-8.5 cm</td>
<td>Level of Bentonite</td>
<td>5.0-6.0 mBGL</td>
</tr>
<tr>
<td>Ground Elevation (mAHD)</td>
<td>42.587</td>
<td>Casing Size/Type</td>
<td>50 mm/PVC18</td>
</tr>
<tr>
<td>GPS Easting</td>
<td>(MGA-94 Zone 54)</td>
<td>SWL after Development</td>
<td>3.28 mTOC</td>
</tr>
<tr>
<td>GPS Northing</td>
<td>6100941</td>
<td>Development Details</td>
<td>Air lifted 1 hour</td>
</tr>
</tbody>
</table>

**Project Comments:** WSS-CHR-1 is a single piezometer monitoring bore, located on the northern side of Chalk Hill Road, near a gauging station and adjacent to Pedler Creek.

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.

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Checked by: Prof Peter Cook
Location and Well Installation of WSS-CHR-1
Lithology and Well Completion Log

WSS-CHR-1

Depth (mBGS)

0.0-0.5: Silty Clay: Medium brown calcareous silty soft clay with <10% poorly sorted and rounded medium sand to coarse gravel
0.5-1.0: Clay: Orange brown medium stiff calcareous clay with <10% poorly sorted medium sand to fine gravel
1.0-1.5: Clay: Dark brown stiff calcareous clay
1.5-2.0: Clay: Light olive grey and dark grey calcareous stiff clay with <10% moderately sorted sub angular to rounded coarse sand to fine gravel
2.0-2.5: Clay: Medium brown calcareous medium to stiff clay with <5% poorly sorted sub rounded medium sand to fine gravel
2.5-3.5: Clay: Medium brown calcareous medium to stiff clay
3.5-4.0: Silty Clay: Orange brown calcareous silty clay
4.0-4.5: Silty Clay: Orange brown calcareous silty clay with <5% moderately sorted sub rounded medium sand
4.5-5.0: Silty Clay: Medium brown calcareous silty clay with <5% moderately sorted sub rounded medium sand
5.0-6.0: Silty Clay: Medium brown calcareous silty soft to medium clay with <5% moderately sorted sub rounded medium sand
6.0-6.5: Silty Clay: Orange brown calcareous silty clay with <5% moderately sorted angular to sub rounded medium sand
6.5-7.0: Silty Clay: Orange brown calcareous silty clay with <15% moderately sorted sub rounded to rounded medium to coarse sand
7.0-8.5: Silty Clay: Orange brown calcareous silty clay with <15% well sorted rounded medium sand
Geophysical Logs

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

A slug test was performed on WSS-CHR-1 by placing a level logger at a depth of 8.8 mTOC and using a pump (8 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.

![Graph showing pressure and temperature over time](image)

Chemical Analysis

The results of major ion chemistry on WSS-CHR-1 are presented below, along with chemical parameters measured in the field.

<table>
<thead>
<tr>
<th>Well ID</th>
<th>Date Sampled</th>
<th>SWL</th>
<th>Field Parameters</th>
<th>Laboratory Analyses @ CSIRO ASU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pH</td>
</tr>
<tr>
<td>WSS-CHR-1</td>
<td>13/12/2011</td>
<td>3.24</td>
<td></td>
<td></td>
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</tbody>
</table>

Chemical parameters include:
- **Mg**: 59.2 mg/L
- **Na**: 427 mg/L
- **S**: 67.4 mg/L
- **Al**: 0.06 mg/L
- **As**: <0.05 mg/L
- **B**: 0.34 mg/L
- **Cd**: <0.05 mg/L
- **Co**: <0.05 mg/L
- **Cr**: <0.05 mg/L
- **Cu**: <0.05 mg/L
- **Fe**: <0.1 mg/L
- **Mn**: <0.05 mg/L
- **Mo**: <0.05 mg/L
- **Ni**: <0.5 mg/L
- **P**: <0.05 mg/L
- **Pb**: <0.1 mg/L
- **Sb**: <0.05 mg/L
- **Se**: <0.05 mg/L
- **Si**: 17.6 mg/L
- **Sr**: 1.82 mg/L
- **Zn**: <0.05 mg/L