



An Australian Government Initiative

Groundwater Education Investment Fund Project

Borehole Infrastructure Report

Borehole Type	Multi-Level Piezometer	GPS Easting	(MGA-94 Zone 54)	278333
Unique Well ID	WSS-P3-FAF-3-v2	GPS Northing		6094355
Date drilled	7/05/2013	Location		Willunga Super Science Site
Drilled By	Diverse Resource Group	Installed By		Diverse Resource Group
Monument Type	Irrigation cover, flush	Depth Drilled		53 mBGS
Monument Diameter/Width	42 cm x 23 cm	Drilled Diameter/Method		160 mm/ RTA
Development Details	Air Vacuum			

Project Comments: WSS-P3-FAF-3-v2 is a multi-level piezometer adjacent to Taylors Hill Road in Willunga. Six additional piezometers are completed across the fault at this site.

Bore ID	Casing Size (mm)/ Type	TOC (mAHD)	Casing Depth (mBGS)		Screen (mm)/ Aperture (mm) /Type	Bentonite or Cement (mBGS)		Screen Depth (mBGS)		SWL (mTOC)
Surface casing	160/PVC		0	15						
WSS-P3-FAF-3A	50/PVC18	144.263	-0.007	51.1	50/slotted/PVC18	49	49.6	51.1	52.1	17.49
WSS-P3-FAF-3B	50/PVC18	144.254	0.002	40.5	50/slotted/PVC18	39.5	40	40.5	41.5	17.47
WSS-P3-FAF-3D	50/PVC18	144.244	0.012	29.65	50/slotted/PVC18	0	29	29.65	30.65	17.34



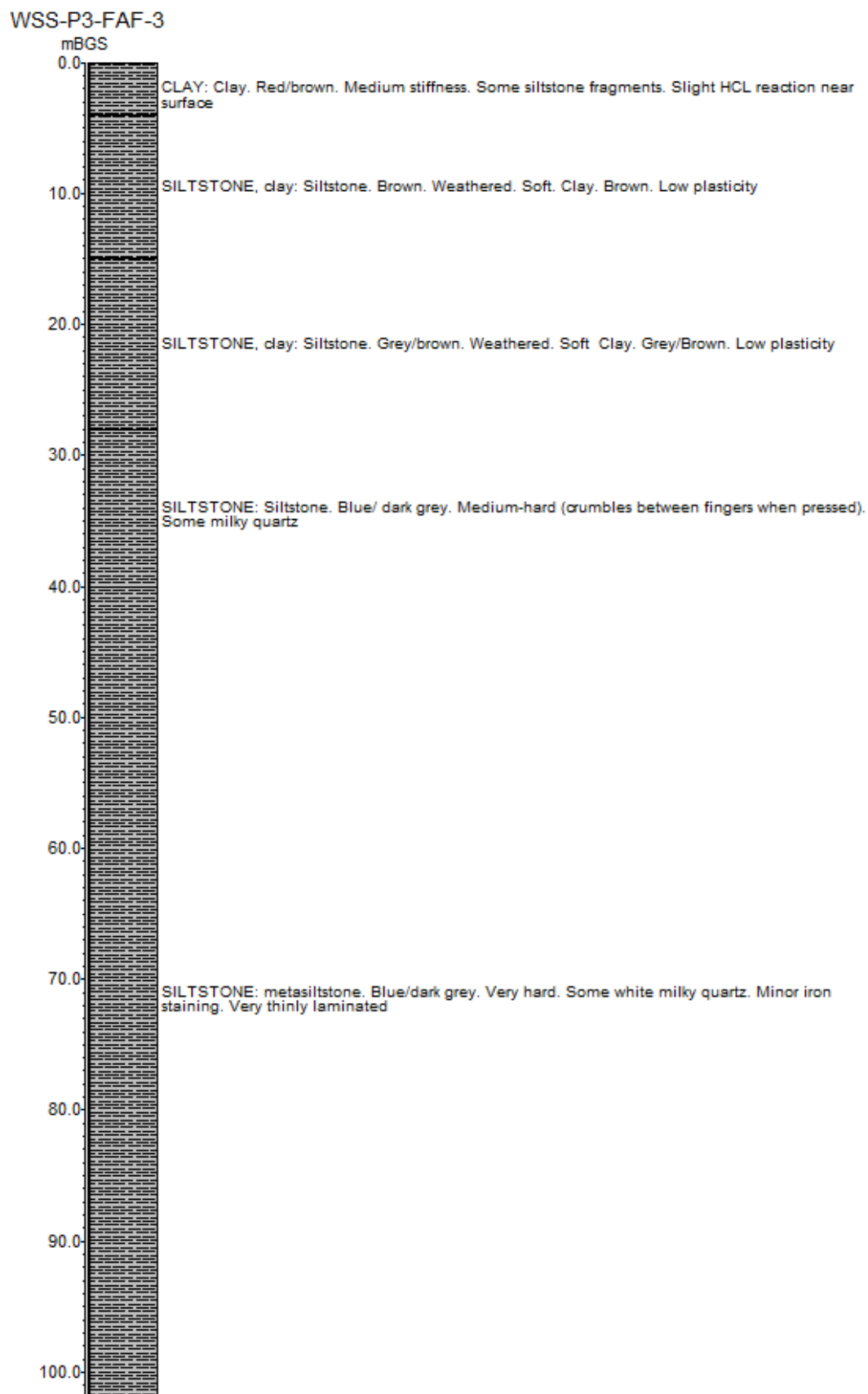
Map of Willunga Super Science Flow Across the Fault Sites

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

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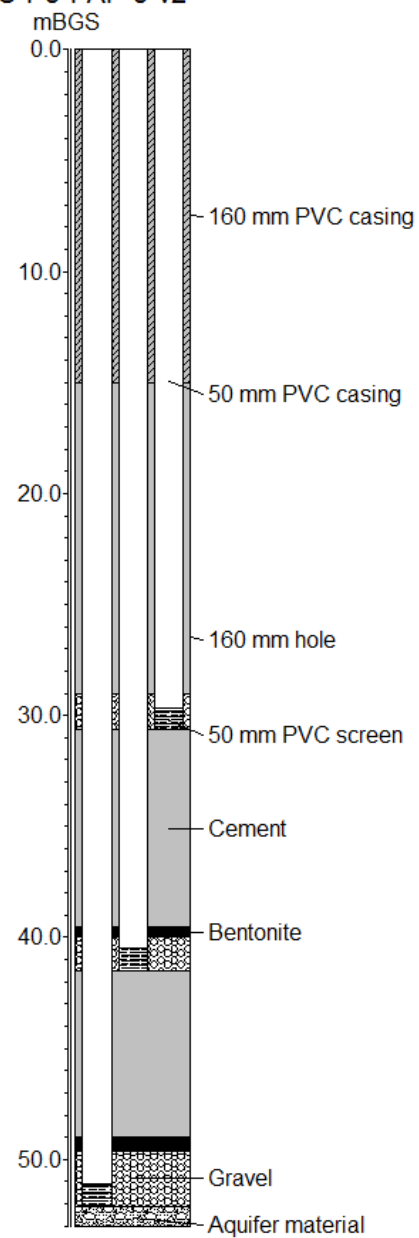
Lithology Log

Lithology was logged for WSS-P3-FAF-3, adjacent to WSS-P3-FAF-3-v2, by Edward Banks, National Centre for Groundwater Research and Training.



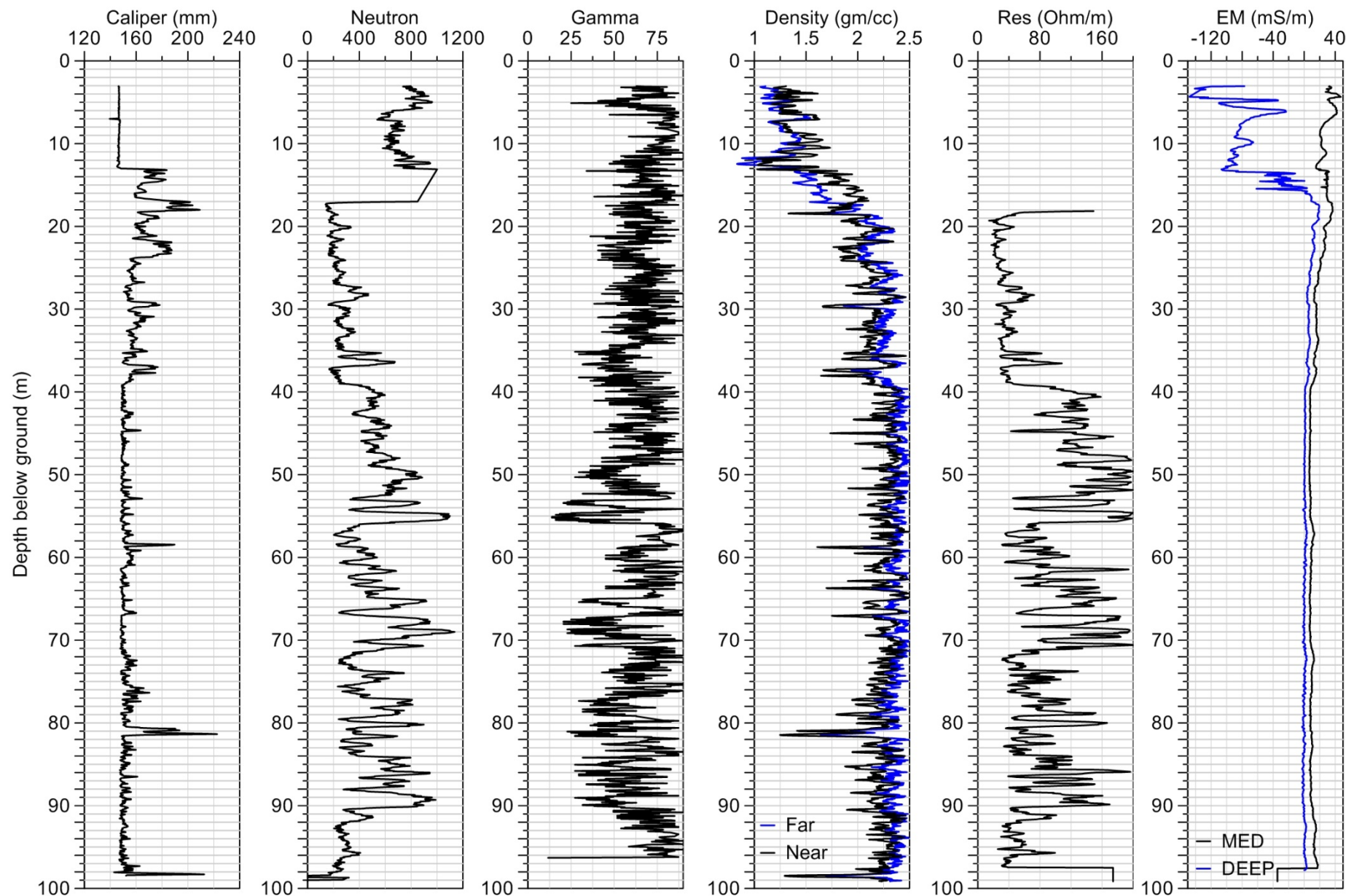
Well Completion Log

WSS-P3-FAF-3-v2



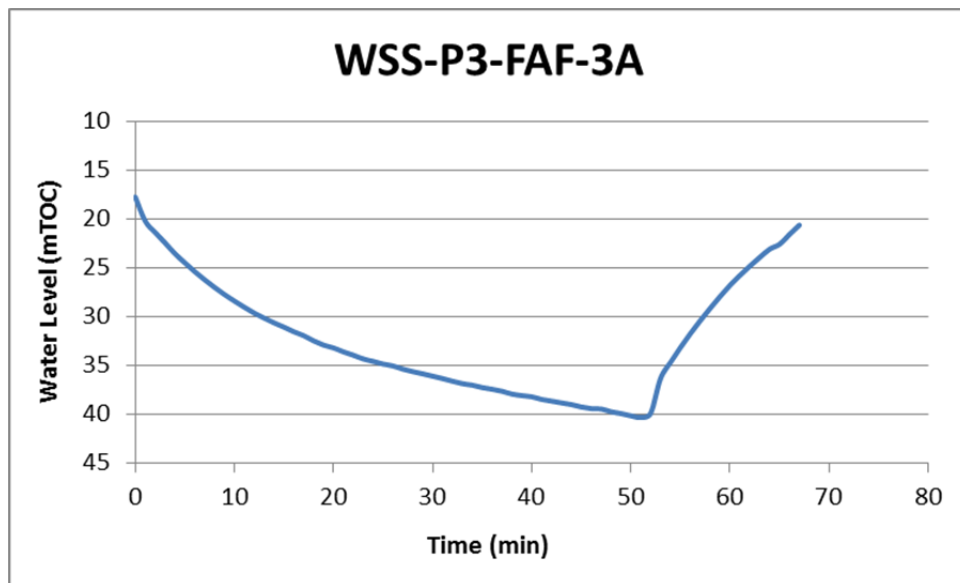
Geophysical Logs

The Department of Environment, Water and Natural Resources conducted geophysical well logging on WSS-P3-FAF-3, adjacent to WSS-P3-FAF-3-v2.

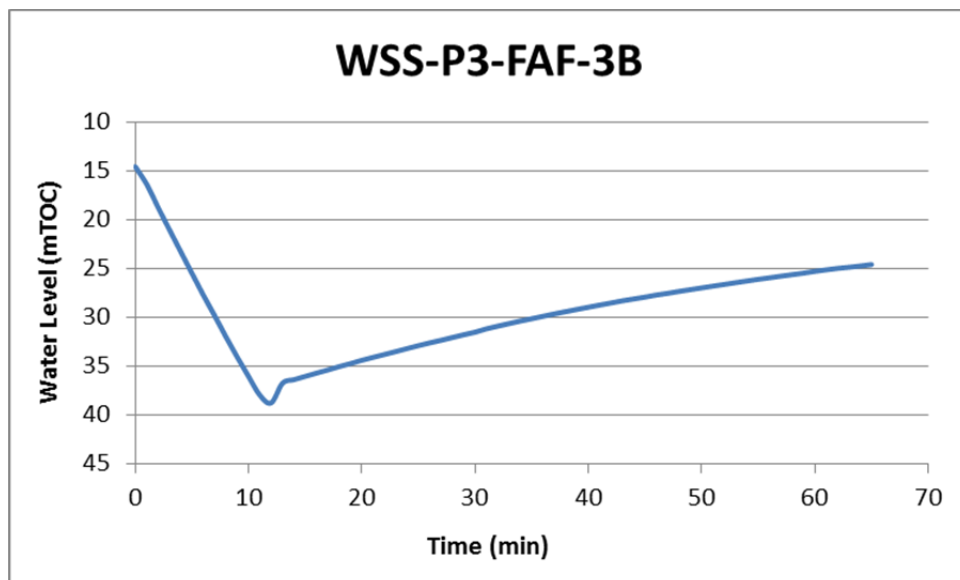


Pumping Tests

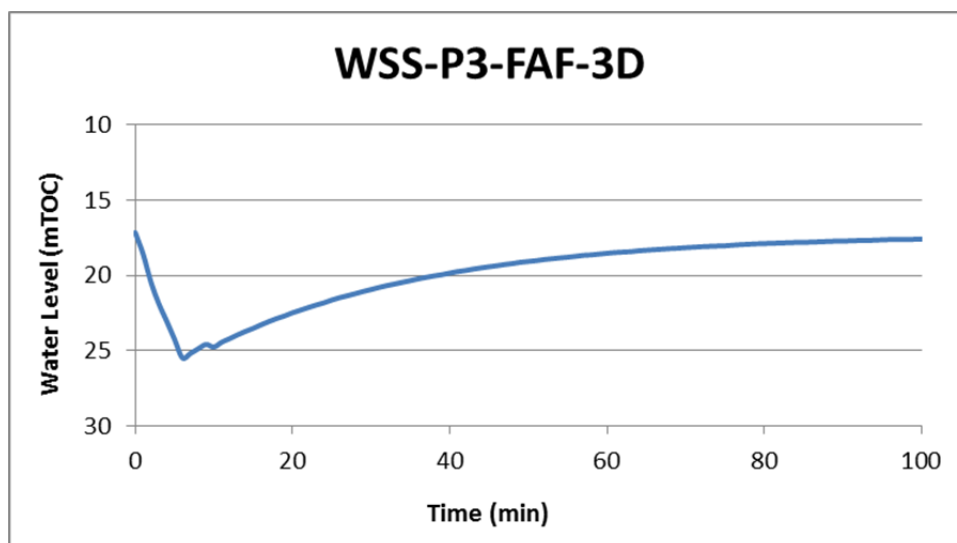
A pumping test was performed on piezometer WSS-P3-FAF-3A on 15/05/2013 with a water level logger and a submersible Grundfos pump using a flow rate of 5 L/min. The results of the test are presented below. The report author may be contacted for the full data set.



A pumping test was performed on piezometer WSS-P3-FAF-3B on 15/05/2013 with a water level logger and a submersible Grundfos pump using a flow rate of 5 L/min. The results of the test are presented below. The initial recovery is likely from water draining back from the tubing. The report author may be contacted for the full data set.



A pumping test was performed on piezometer WSS-P3-FAF-3D on 14/05/2013 with a water level logger and a submersible Grundfos pump using a flow rate of 3.6 L/min. The results of the test are presented below. The drop in water level during the recovery occurred when the pump was removed. The report author may be contacted for the full data set.



Chemical Analysis

The results of major ion chemistry on WSS-P3-FAF-3-v2 are presented below, along with chemical parameters measured in the field.

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses @ CSIRO ASU								Laboratory Analyses @ AWQC			
			pH	EC	Temp	Alkalinity	pH	E.C.	Total Alkalinity	F ⁻	Cl ⁻	Br ⁻	NO ₃ ⁻	SO ₄ ⁼	Ca	Mg	K	Na
		mTOC		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-P3-FAF-3A	15/05/2013	17.49	7.14	4190	20.3	7.44	7.7	4066	7.6	0.3	1404	3.7	0.2	100	185	143	8.63	475

Ion balance difference of -17.9%

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses @ CSIRO ASU								Laboratory Analyses @ AWQC			
			pH	EC	Temp	Alkalinity	pH	E.C.	Total Alkalinity	F ⁻	Cl ⁻	Br ⁻	NO ₃ ⁻	SO ₄ ⁼	Ca	Mg	K	Na
		mTOC		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-P3-FAF-3B	15/05/2013	17.47	7.5	4200		4.08	8.0	5420	4.1	0.4	2042	5.4	0.4	240	298	155	19.2	636

Ion balance difference of -16.2%; insufficient purging prior to sampling

Well ID	Date Sampled	SWL	Field Parameters				Laboratory Analyses @ CSIRO ASU								Laboratory Analyses @ AWQC				
			pH	EC	Temp	Alkalinity	pH	E.C.	Carbonate Alkalinity (pH 8.3)	Total Alkalinity	F ⁻	Cl ⁻	Br ⁻	NO ₃ ⁻	SO ₄ ⁼	Ca	Mg	K	Na
		mTOC	μS/cm	°C	meq/L	μS/cm	meq/L	meq/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
WSS-P3-FAF-3D	15/05/2013	17.34	12.1	6750	18.7	19.88	12.1	7930	19.0	19.8	0.6	1586	4.0	2.9	197	655	0.06	97.6	594

Ion balance difference of -1.6%; insufficient purging prior to sampling