Project Comments: 18137 is a triple completion multi-level piezometer. It is located adjacent to 18138. Together, these bores provide a nest of five piezometers sampling different depths in the unconfined aquifer.
Lithology Log

Very coarse to fine weak friable moderate reddish brown (10R4/6) silty sandstone, colour changing down to light brown (5YR5/6) and greyish orange (10YR7/4).

Minor pale brown sandy calcrite and white chalcedony.

Massive calcrete with 3% medium quartz sand, moderate orange pink (5YR8/4) to very pale orange (10YR8/2). Plus silty sandstone, similar to above, moderate orange pink (5YR5/8).

Very coarse to fine calcrete cemented sandstone, very pale orange (10YR8/2) and light brown (5YR6/4).

As above, passing down to weak friable very coarse to fine silty sandstone, light brown (5YR6/4).

Soft very coarse to fine silty sandstone, greyish orange (10YR7/4).

Coarse to fine well cemented sandstone, light brown (5YR6/4), plus very pale orange (10YR8/2) soft sub-plastic silty sandstone.

Light brown (5YR6/4) soft sub-plastic very coarse to fine silty sandstone.

Similar to above, ranging from sub-plastic to moderate indurated and friable, greyish orange (10YR7/4).

Very coarse to fine weakly indurated friable silty sandstone. Pale yellowish brown (10YR6/2) and light brown (5YR6/4).

Very coarse disaggregated felspathic sand, with granules, rounded to sub-angular. Some silty sandstone as above.

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Air Lift Yield L/s 7

Date Start 28/11/2011 Electrical Conductivity μSiemens/cm 869

Completed 29/11/2011 Standing Water Level m BGL 13.6

Contractor NRETAS Status Piezometer

Gamma cps Depth of casing at logging 5.7m
Medium to fine silty sandstone, light brown (5YR5/6) and greyish orange (10YR7/4). Plus disaggregated sand as above.

Disaggregated medium to fine silty sand, light brown (5YR5/4).

Weakly indurated friable fine grained silty sandstone, pale yellowish brown (10YR6/2) to pale brown (5YR5/2).

Moderate yellowish brown (10YR5/4) medium to fine grained soft friable silty sandstone.

Disaggregated coarse to fine sand, moderate brown (5YR4/4), plus very coarse disaggregated sand, probably from 27 to 30 m interval.

Soft friable very coarse to fine silty sandstone, pale yellowish brown (10YR6/2).

Moderately indurated friable medium to fine grained sandstone and silty sandstone, yellowish grey (5Y7/2). Some sandstone is vugular.

Medium to fine grained soft silty sandstone, yellowish grey (5Y7/2), from the interval drilled. Assorted from up hole.

Weathered schist, sample angular quartz, some clay and mica, pale red (10R6/2). Some vein quartz.
Geophysical Logs

The portable Mount Sopris logging system was used to collect geophysical data from bore 18137-1. 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 18137-1 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 7.8 L/min. The results of the test are presented below. The pump was not able to draw down the water level very much in this piezometer. The report author may be contacted for the full data set.

A pumping test was performed on piezometer 18137-2 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 8.3 L/min. The results of the test are presented below. The pump was not able to draw down the water level very much in this piezometer. The report author may be contacted for the full data set.
A pumping test was performed on piezometer 18137-3 on 5/02/2012 by attaching a level logger to a submersible Grundfos MP1 pump, lowering the pump to a depth of 22 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.
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.

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<th>SWL m</th>
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<th>EC μS/cm</th>
<th>Temp °C</th>
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<th>Ca²⁺ mg/L</th>
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