

Appendix 3. Location, physical characteristics, borehole-geophysical logs and interpreted structures for well Act 3.

The act3.110707 is located about a half a mile from act2.110707 at the Quayle Ridge Golf Club along one of the fairways. The well was logged, along with act2.110707, in a two day period spanning several months, between November 7, 2007 and May 14, 2008. The delay was due to repairs needed on the acoustic televiewer tool.

The well is 75 meters deep with 4.6 meters of casing. Reported yield is 2 gallons per minute. There is approximately one meter of overburden, which is likely artificial fill. The bedrock unit is schist of the Nashoba formation. It is a fine to medium grained, and well foliated, gray to silvery-gray quartz-mica schist that may contain biotite, garnet and sillimanite.

A total of 13 fractures were identified in this well. Of the total fractures identified, three are FPF, three are subhorizontal unloading joints and the remaining ten are tectonic joints.

The water table in November 2007 was at 35 meters depth, which is extremely low. There is a pumping wells approximately 15 meters away which had most likely drawn down the water table over the course of the spring and summer. The water table had risen to five meters in May 2008. Only HPFM ambient tests were run due to the low water table in the fall of 2007. The depth of the water was beyond the limits of the pumping apparatus.

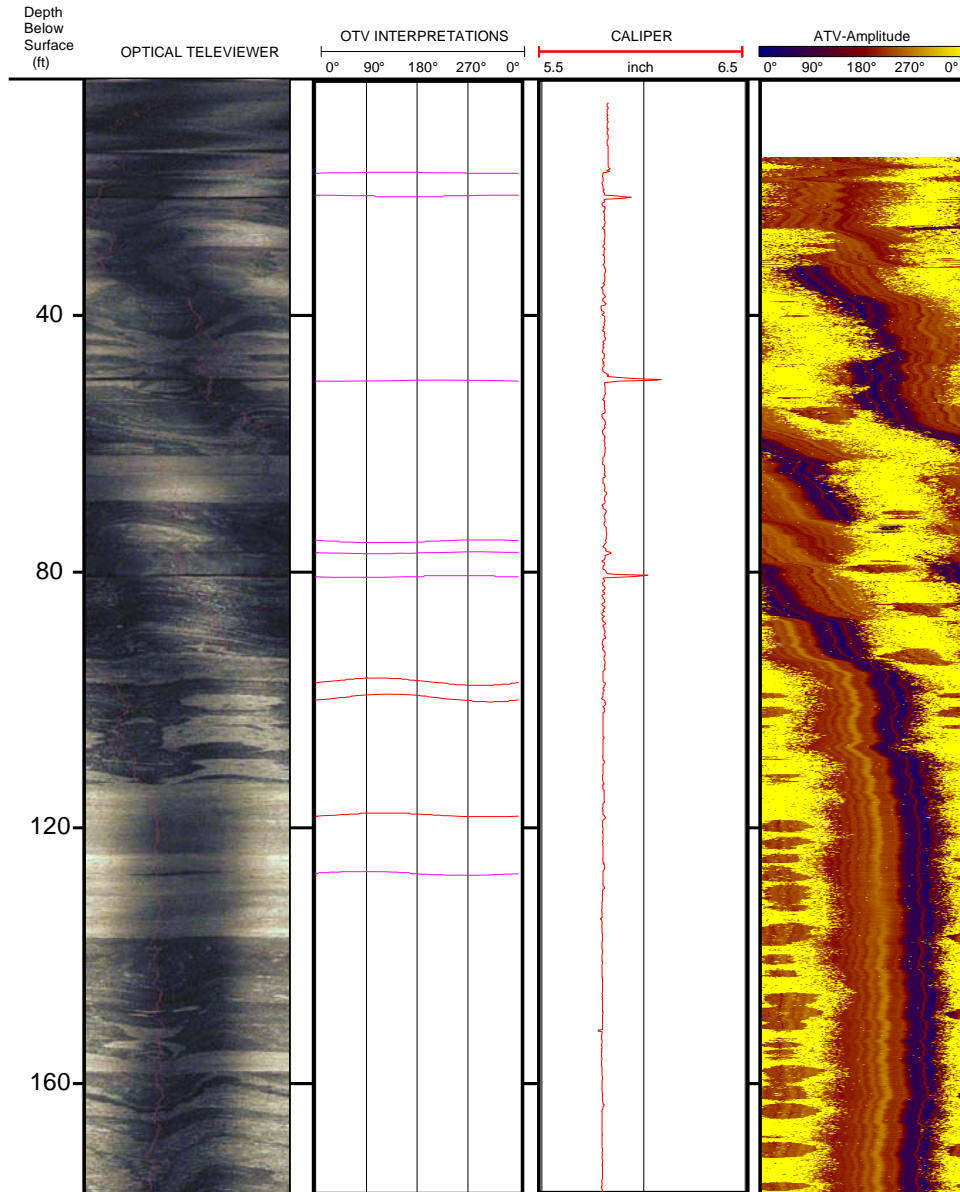
Appendix 3, continued. Location, physical characteristics, borehole-geophysical logs and interpreted structures for well Act 3 (Azimuths and dips follow right hand rule, t=tectonic, s = sheeting, p = foliation parallel fractures). Depth to the water table to high for pumping apparatus so no flow data collected under pumping conditions.

Site ID: act3.110707
 Location: "Quayle Ridge Golf Course Well #3" Acton, MA
 Elevation (m) 50
 Reported Yield (gpm) 2
 Rock Type: Schist

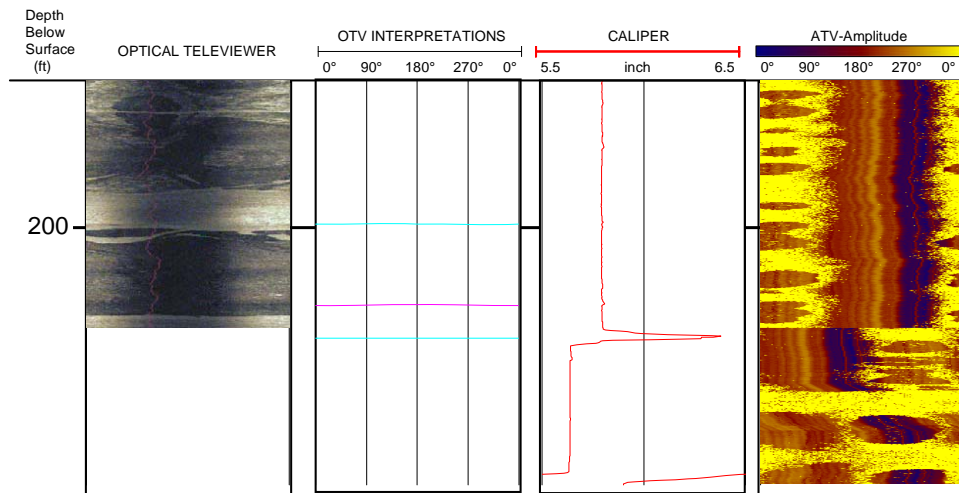
Depth to water: 116.05 ft 35.37 m
 Depth of casing: 15 ft 4.572 m
 Depth of well: 246 ft 75 m
 Land surface to MP: 0 ft 0 m

| Fractures | | | | | | Ambient | | | Pump | | |
|-----------|-----------|------------|---------|-----|------|------------|-----------|----------|---------------|------------|-------|
| number | depth (m) | depth (ft) | Azimuth | Dip | Type | Flow (y/n) | gpm (amb) | notes | Flow (y/n) | gpm (pump) | notes |
| 1 | 5.4 | 17.7 | 228 | 25 | s | n | 0 | | NOT AVAILABLE | | |
| 2 | 6.5 | 21.3 | 76 | 28 | t | n | 0 | | | | |
| 3 | 15.3 | 50.2 | 319 | 31 | t | n | 0 | | | | |
| 4 | 22.9 | 75.3 | 28 | 51 | t | n | 0 | | | | |
| 5 | 23.5 | 77.1 | 16 | 44 | t | n | 0 | | | | |
| 6 | 24.6 | 80.8 | 345 | 31 | t | n | 0 | | | | |
| 7 | 29.6 | 97.2 | 200 | 73 | p | n | 0 | | | | |
| 8 | 30.4 | 99.7 | 220 | 74 | p | n | 0 | | | | |
| 9 | 36.0 | 118.0 | 214 | 62 | p | n | 0 | | | | |
| 10 | 38.7 | 127.1 | 175 | 61 | t | n | 0 | | | | |
| 11 | 60.8 | 199.5 | 214 | 22 | s | y | 0 | flow out | | | |
| 12 | 64.6 | 212.1 | 277 | 32 | t | n | 0.01 | | | | |
| 13 | 66.2 | 217.3 | 270 | 0 | s | y | 0.01 | flow in | | | |

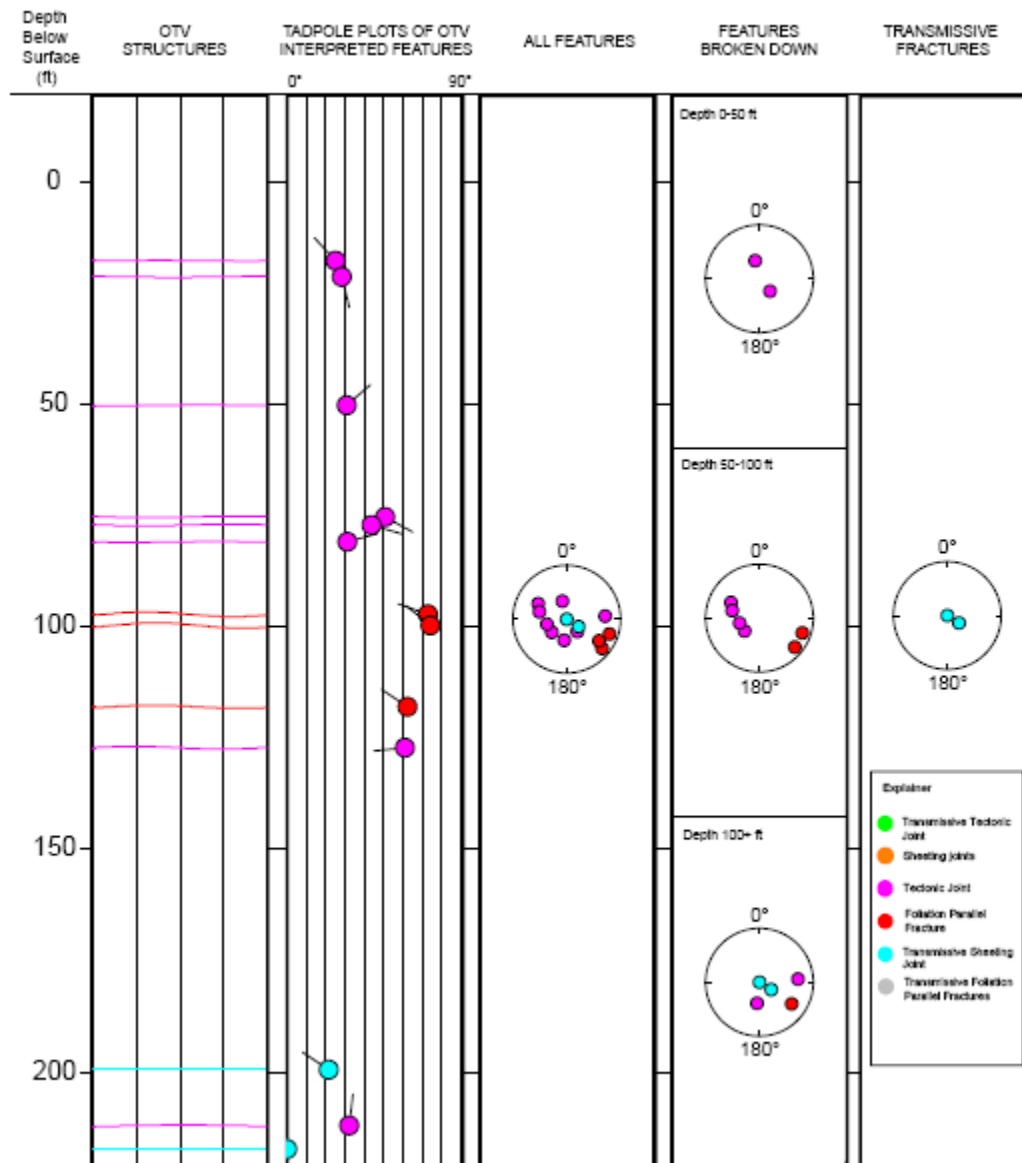
Appendix 3, continued. Interpreted features for Act 3. Optical televiewer interpretations indicated by color: orange – subhorizontal sheeting joint; magenta – tectonic joint; red – foliation parallel fracture (FPF); cyan – transmissive subhorizontal sheeting joint; green – transmissive tectonic joint; grey – transmissive foliation parallel fracture (FPF). OTV – optical televiewer; ATV – acoustic televiewer.



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Appendix 3, continued. Tadpole plots and stereoplots of interpreted optical televiewer (OTV) structures for Act 3. In the tadpole plot depth is plotted along the y-axis and magnitude of the dip plotted on the x-axis. The tail of the tadpole points in the direction of the dip, relative to true north, which is toward the top of the page. The stereonets represent poles to planar features plotted on a lower-hemisphere equal-area stereonet. Stereonets use right hand rule convention. Colors on the OTV structures plot correspond to those in the tadpole explanation.



Appendix 3, continued. Composite log for Act 3 of natural gamma, fluid resistivity, fluid temperature and heat pulse flowmeter data under ambient and stressed (pumping) conditions. No heat pulse flowmeter data collected under pumping conditions. Water depth to deep for pumping apparatus.

