

### CHEERS!

Welcome to the last edition of *Perfiles* of 2007, where we want to give you a final update of the latest geophysical instruments and applications we have added to our services during the last part of this year.

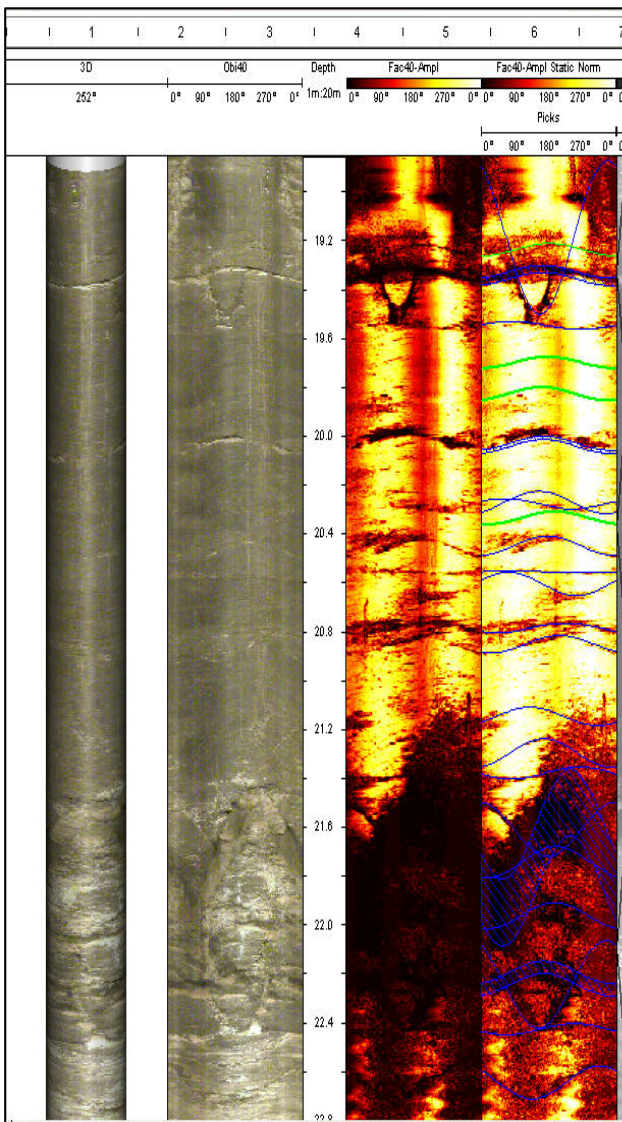
We have had a very busy year in Perú, as well as several other countries such as Colombia, Guatemala, Honduras, Panamá and Nicaragua, and our field crews already have strong commitments for 2008.

We hope you enjoy this last *Perfiles*, where we will present a very interesting case history of geophysical engineering.

José R. Arce

### INSTRUMENTS

In November we received new instruments, which have been used to complete a third crew for the induced polarization method. The instrument set consists of an Iris VIP 4000 transmitter, with 4kW of maximum



power, as well as a 10 channel Iris Elrec PRO receiver. One of our IP crews will spend the next six months in Central America, which is the primary reason why we implemented a new crew, so that we can compensate the continuous demand for these methods in Perú.

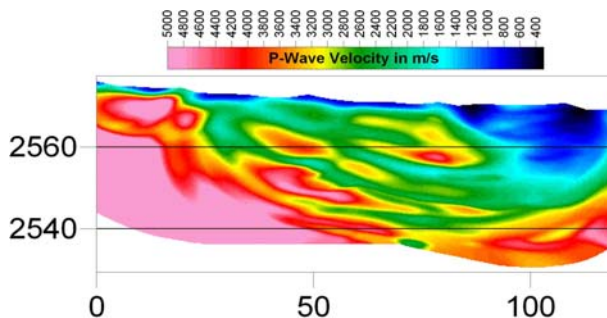
We informed in our August 2007 edition of *Perfiles* that we are expanding geophysical well-logging services with our Mount Sopris instrumentation. This includes a faster controller console Matrix, as well as several new probes, including a mechanical three arm caliper to precisely measure a borehole's diameter, a new probe for continuous and simultaneous measurement of electromagnetic induction resistivity and magnetic susceptibility. We have also added, along with Golder Associates, two new 3D visualization televiwer probes: one optical and one acoustic, for empty and fluid-filled boreholes. With these last probes we can accurately measure logs with sub-millimetric resolution of the borehole walls, which will allow for detail analysis of materials as well as structural features. The sample presented before shows two different styles of displaying the optical log on the left and two different color distributions for the acoustic images on the right. These logging tools are most useful to maintain a digital record of every borehole, as well as to image existing boreholes with no remaining core or known information.

Our new well-logging services will be available late January 2008.

### LANDSLIDES

One of the most common applications for seismic surveys is landslides. The following example is from a survey conducted this year on an active landslide area.

The results from this survey were most interesting. In the model shown next we can clearly see that the direction the materials moved towards the right end of the section, and this movement brought several flows with a variety of compaction of the materials, depicted as different colored velocities. We can clearly see remaining boulders of various sizes, shown as red-pink colored nuclei.



The part which was least affected by the landslide was between horizontal distances 90 and 120, where we have a larger concentration of low velocity materials (cyan-blue). We can conclude that seismic tomography is appropriate for this application.

Until next time...

