ABSTRACT

A leading reason millions of dollars are spent taking a whole core is to get a core slab for detailed geological interpretation. A core slab provides geologists a continuous view of the rock in 2D, exactly as one would see in a road-cut or how one looks at any picture. A 2D view is the perfect way to do geological interpretation from a core. Another very effective source for detailed geological interpretation is the borehole image. Borehole images provide a continuous image of the subsurface geology as seen in the borehole wall. The images are presented as an unwrapped cylinder of the borehole wall. The unwrapping process allows a 3D surface to be displayed and worked on as a pseudo–2D surface. However, in this view, planes, such as bedding planes, fractures, faults, etc., get displayed as sinusoids rather than as straight lines as seen in core slabs. Conducting interpretation visually based on these “sinusoidal” images requires lots of training and experience, and many industry geologists are not able to comprehend the details in these “sinusoidal view” borehole images even though they may be excellent geologists. If a geologist can be provided with borehole images where planes are seen as straight lines, as in a slabbed core, the geologist is able to extract more information from the image and do superior geological interpretations.

This paper discusses an advanced new mode of displaying borehole images—in true 2D in a slabbed-core-like format. The paper also presents cases from different geological settings demonstrating the value of the gain in geological interpretation using the new image visualization format.