



Figure 1: Digital Cuttings and Core Capture

Digital Cuttings and Core Capture

TMI-10 is one of the most important technologies DRC has been promoting. Digital capture of cuttings and well cores, as summarized in Figure 1 will revolutionize exploration. The business vision is for a fully integrated upstream service company which manufactures instruments, performs replicatable data acquisition, hosts and serves data, analyzes data correlating wells and reducing the need for logs, and interprets data. The upper left image shows microscope quality calibrated digital image of a core. The bottom left image shows existing software allows real-time web access as the cuttings and cores are captured. The bottom right image shows a patented cuttings sample card system, and the upper right image shows a digital cuttings scanner designed to be located next to the shaker and to update cuttings on a secure web site in real-time. Imaging with a patented image server system includes optical (white light), UV (Ultra Violet), IR (Infra Red), and Raman (Commercial Reinshaw). Automated analysis software allows separating rock types digitally for lithology detection, mineralogy, hydrocarbon detection, source rock identification, porosity and permeability data, synthetic logs, and feature recognition. Access to digital rock data has the potential to have more impact on interpretation and exploration than anything since 3-D seismic. Subsurface rock data is ground truth. Digital subsurface rock data can be integrated with seismic and well data. Most importantly, digital rock data enables statistical analysis, pattern finding, and is a new tool for correlating between wells in real time with greater accuracy than log runs.

TMI-10 was developed and is owned by Christian Singfield of Brisbane, Australia. Chris has been working on a real-time measurement and adjustment of mud system for MezurX for the last several years. And this summer he is again available to pursue development of the digital core and cuttings imaging systems.

DRC proposes a \$2.5 million investment to build 5 systems and to implement them on drilling rigs to demonstrate the value of this approach over the next couple of years. The technology can then be packaged and either used in-house or spun out as a fully integrated upstream oil services company.