

Examining Cretaceous Sediments in the East Texas Basin Using Videomicroscopy

By

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Cretaceous formations in Texas are recognized as a petroleum producing resource with abundant unexplored reserves. When wells are drilled, the cuttings and cores are often archived in various state repositories. Since geologists commonly utilize the cuttings and cores from the old wells to assist in evaluating the potential of new exploration targets, the importance of these resources is noteworthy. In addition, the recent flurry of drilling activities stimulated as a result of directional drilling technology, has made many old fields attractive as possible new prospects. A more comprehensive use of these archived geologic resources may now be realized with videomicroscopy. Videomicroscopy is a process which links a high-powered microscope, equipped with a high resolution video camera, to a computer from which images are collected and stored in a visual database. Cretaceous sediments were collected from several wells drilled in the East Texas Basin, imaged with videomicroscopy and then described and loaded into the Lithologic Information System (LIS). This software and imagery is conveniently packaged on a compact disk (CD) for easy viewing and inspection. The LIS greatly facilitates visual access to bore-hole cuttings and cores which are imaged and described, in addition to mud logs, and electric logs which have been scanned and integrated into the user specified application software. These features help to overcome the physical difficulties involved in correlating cuttings and cores to various logs as well as an aid in risk assessment decisions. By assisting geologists in overcoming some of the time consuming and expensive difficulties involved in examining the cuttings and cores available from thousands of wells, videomicroscopy and the LIS may prove to be a valuable new tool in petroleum exploration.