

Review of two photometric methods for estimating shale oil in oil shale

John Dyni

U.S. Geological Survey, CO, USA

Two methods for estimating the amount of shale oil obtained by pyrolysis of oil shale are reviewed. The first method was developed in 1951 by the U.S. Geological Survey and utilizes a colorimeter that measures the absorbance of blue-filtered light by shale oil obtained by pyrolysis of a small sample of oil shale. The second method, which is similar in some respects to the USGS method, was developed by Shell Oil Company. Shell filed a U. S. patent application in 1967 and the patent was granted in 1970. Shell's procedure utilizes a fluorometer to measure units of fluorescence emitted by shale oil obtained by pyrolysis of a small sample of oil shale. Both methods require that the instrument readings be calibrated against a suite of oil shale samples analyzed for shale oil content by other methods such as Fischer assay or Rock-Eval[®]. Both techniques are simple to use, are much faster than the Fischer assay, and give results comparable to the Fischer assay. The techniques are limited to estimating the quantity of shale oil and do not measure other parameters determined by Fischer assay including spent shale, water, *gas plus loss*, and oil specific gravity. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.