Osage Oil Field Single-Well Chemical Tracer Test Shows Promise

November 13, 2014 -- The first-ever collaborative field demonstration project conducted by Osage Partners LLC, TIORCO, Chemical Tracers Inc., and the Enhanced Oil Recovery Institute (EORI) was completed in the Bradley Unit of the Osage oil field in October. The purpose of this project was to collect an in situ measurement of residual oil saturation from the reservoir. The single-well chemical tracer test also evaluated the effectiveness of an alkali-surfactant-polymer (ASP) to mobilize stranded oil.

Initial test results indicate that approximately 32 percent of the oil in the reservoir is residual. Because residual oil is immobile, it cannot be produced using conventional techniques. The test results also indicated that close to 20 percent of this residual oil can be mobilized and produced using ASP.

The significance of this field demonstration project is that it shows that the use of ASP can significantly reduce residual oil saturation and ultimately improve oil recovery from the Newcastle Formation. Furthermore, this was the first ever in-situ measurement of residual oil in the Newcastle Formation. It is anticipated that other operators who have Newcastle production also may have a similar potential for mobilizing residual oil and, ultimately, improve oil recovery using ASP.

The oil field where the test was conducted is owned and operated by Osage Partners LLC. The field was discovered in 1919 and has produced 32 million barrels from the Newcastle/Muddy Formation. The well – referred to as OBU 4-24, T46N R63W -- selected for the test was drilled and completed in 1977, and produces from approximately 12 feet of the Newcastle Formation. The well currently produces 95 percent water and 5 percent oil with a total estimated daily volume of between five and six barrels of fluid per day.

The result of the successful single-well chemical tracer-test in this well supports the implementation of a larger multi-well or five-spot ASP flood. The test was conducted by Laramie-based Chemical Tracers Inc. and partially funded through the field demonstration budget of the EORI. The ASP formulation used in the test was designed by TIORCO of Denver.

For more information, contact the EORI at (307) 766-2791 or go to http://www.uwyo.edu/eori/