

CRAMER, DAVID D., Regional Technical Manager, BJ Services, Denver.

#### Stimulation Treatments in the Bakken Formation

Stimulation Treatments are commonly performed on vertical Bakken wells throughout the Williston Basin. The results of these treatments have been mixed, running the gamut from spectacular gains to catastrophic losses in productivity. From these experiences, several factors affecting treatment response in the Bakken have been identified.

Using well history, treatment records and laboratory data, this presentation will explore ways in which well stimulation influences Bakken reservoir performance. Some of the topics covered include: influence and importance of adjacent lithologic intervals; condition of the wellbore area; rock mechanics; formations fluid properties; stimulation fluid systems (i.e., water, acid and oil); use of fluid loss additives and propping agents; and job sizing. It will be demonstrated that the degree of reservoir sensitivity is related to the pore pressure gradient and beyond a critical volume, increasing the treatment size results in sharply diminishing productivity returns. The use of stimulation treatments for Bakken horizontal wells will also be discussed.