Bakken Production Optimization of Surface Facilities

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Abstract

Surface facilities that separate and condition produced fluids are the integral link between reservoir fluid production and downstream processing and distribution. These facilities are numerous and widely distributed across the basin, and each one contributes to the overall quality of Bakken crude and the sustainability of Bakken development. Given their fundamental role, the Energy & Environmental Research Center (EERC) has undertaken a task of modeling these facilities to assess the impact of different design and operating conditions on system performance such as fluids properties and regulatory compliance. Modeling has included Bakken-relevant oil properties and production rates, typical site equipment specifications, and regional weather parameters. Furthermore, dynamic or time-dependent modeling has been used to simulate effects such as treater dump cycle pulsations and vessel and piping heat losses during transient flow since anecdotal evidence suggests these non-steady-state events can impact the resulting crude volatility as well as the performance of vapor control systems. This presentation will review the EERC's current modeling effort, including a discussion of preliminary trends and observations.

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