Abstract

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Topic: Integrated near-online well management—Methodology to maximize production and minimize operating cost in matured brown field

Typical manual optimization process is complex stage-wise process and heavily dependent on the skill levels of human elements involved in the process. Because of the various production department involvements in between, generally, it is a time consuming process as well. Well optimization process involving external experts generally provides greater amount of gain but it is cost intensive process in the long run. Online optimization provides the opportunity to make the process more systematic, structured, sustainable and cost-effective. This paper discusses a case of optimization of a brown field running predominantly on Sucker Rod Pumping system. The operator involved is a small operator and wanted to minimize the cost of the optimization process. Instead of conventional fixed installation of Well head controllers, the total monitoring unit was made mobile. The unit was rotated and relocated in a systematic manner to cover the entire field. It was important to trap the total well behaviours at one go in a short span of monitoring (approximately 2 days per well per cycle) and hence all the important parameters (including, fluid level, casing head and tubing head pressures etc.) were captured during the monitoring cycle in order to make the optimization process a wholistic one. All the field parameters were consolidated through vehicle mounted RTU. The same were stored locally as a back-up and simultaneously, were transferred via GPRS communication system to a centralized server. These parameters were used for surveillance purpose while being online and later on analysed thoroughly through the analysis workbench to find out the opportunities for optimization. This paper discusses the following: - New way of carrying out near-online optimization - Benefits of online optimization - Techno-economic criteria for candidate selection - Critical parameters for near-online optimization At the end, this paper also brings out the field results from a successful deployment of the new concept. It is believed that this case study is a unique application and similar deployments are not tried elsewhere in the world.