

UNCONVENTIONAL RESULTS WITH CONVENTIONAL LONG STROKE ROD LIFT SYSTEMS: A STUDY OF DESIGN PROCESS AND RESULTS PRODUCED IN VARIOUS APPLICATIONS

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ABSTRACT

Sucker rod pumping is largely regarded as the final artificial lift method in a well's lifecycle. Until now, the industry standard application of sucker rod pumping systems has been up to 400 barrels per day fluid production. With the industry advancing towards deeper wells and increasingly aggressive production targets, the challenge of meeting these application parameters while decreasing costs has become forefront to an operator's requirements for profitability and in some cases, survival. To meet this need, Lufkin has established a system design comprised of a novel conventional 2560-500-320 pumping unit and fit-for-purpose rod string and pump, coupled with the ability to accurately control performance with automation. Through a comprehensive design analysis which factors in well characteristics, operational preferences, and production requirements, a system was developed to optimize production while minimizing lifting costs for operators. This approach has proven to lower or eliminate capital and operating costs for oil and gas producers by reducing the number or types of artificial lift methods, increasing fluid production, reducing failures, and lowering workover costs, as compared to other artificial lift methods or different pumping unit types. This paper will review design objectives, challenges, predictive analytics, implementation, economics, and the application results ranging from 400 to over 1000 barrels per day of fluid production achieved.