Title: High Pressure Gas Lift: The Critical Variables Affecting Your Maximum Outflow Potential
Author(s): Victor Jordan, Estis Compression

Since its' introduction to the unconventional oil and gas realm in 2018, Single Point High Pressure Gas Lift (referred to as HPGL going forward) has emerged as one of the top artificial lift choices for operators in the Permian and Anadarko basins. It has become a proven technology with over 1,250 applications to date as more operators are choosing it as their primary form of artificial lift for their unconventional assets. Its ability to achieve sustained high fluid rates as well as having a high sand and gas tolerance makes it the most versatile form of artificial lift offered in today's market.

HPGL is not a new concept having been discussed in SPE 14347. (Dickens, 1988) The concept was revitalized in SPE 187443 (Elmer, Elmer, & Harms, 2017) by which the authors of this paper emphasized its' application for horizontal wells though at the time the needed compressor technology was not widely available to the market. This has changed as compression service companies have begun offering compressors designed to achieve the high discharge pressures needed to initially unload wells. This has led to a surge in HPGL applications as operators are looking to maintain the high output capabilities of ESPs with the benefits of gas lift.

Gas lift is a naturally flowing process; therefore, it is important to understand the pressure drop across the entire system to achieve the desirable outcome. There are many components along the flow path from reservoir to sales that affect this pressure drop. HPGL has re-emphasized the importance of Nodal Analysis, and the understanding thereof, to production engineers. Proper design and installation of each node can drastically sway your well's performance capabilities therefore proper modeling must be conducted to ensure the desired outcome is achieved. In this paper we will demonstrate the HPGL design method used today to ensure optimal output will be achieved.

Bibliography

Dickens, R. J. (1988). *High-Pressure Gas Lift for Deep, Sour Produciton.* SPE.

Elmer, D., Elmer, W., & Harms, L. (2017). *High Pressure Gas-Lift: Is Industry Missing a Potential Huge Application to Horizontal Wells?* SPE.