

Case Study in Calculating Worst Case Discharge for an Alaska Well While Leveraging Soft Skills to Produce a High Quality Work Product

Islin Munisteri

Abstract

Successful reservoir development is a team-based effort across various disciplines—facilities, subsea, drilling, completions, production, reservoir and geology. Experience with projects in various phases, from Exploration/Appraisal to Developments and Production, with varying soft skill levels when successfully leveraged, contribute to successful work products. The author will explain, with first-hand experience in bringing together a disparate team to create a “new” reservoir engineering calculation-Worst Case Discharge. A comparison of Worst Case Discharge volumes are noted in the Alaska Chukchi Sea, as well as reservoir properties. The narrative will include from the SPE Global Oil and Gas Training and Development Survey, as well as marketing guru Seth Godin, and others.

As an example, the post-Macondo reality has impacted operators, government regulatory agencies, and service companies. Calculations of Worst Case Discharge for Exploration Plans and Development Operations Coordination Documents resulted in new work-flows for the reservoir engineer. Previously, the work was done in an Excel spreadsheet; now the analysis is done in a nodal analysis program such as IHS PERFORM, or PETEX MBAL/Prosper/GAP. Key data on reservoir properties is gathered from geologists, petrophysicists, geophysicists and drilling engineers. The main remit of the reservoir engineer is to integrate the data to perform the nodal analysis to determine Worst Case Discharge, or the highest rate of oil production if oil were to freely flow from the subsurface to the ocean floor. Actual measured well data is used for analogues.

Worst case discharge calculations should not necessarily be used as a proxy to team building. Soft skills were a key challenge the author personally had. Often, it is necessary to trust in the team to deliver their pieces of work on time and within scope. Along with the key element of trust is the transparency in communicating concerns, technical or not, with the other team members to get the best outcome possible. Ultimately, leveraging the team’s strengths and understanding its potential is the key to a high-performing team in delivering Worst Case Discharge within a reasonable time.