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Improved Drilling and Completions Decisions Using Advanced Data Quality Profiling Techniques

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Abstract

This paper explores how three different E&P companies used “data quality profiling” techniques to enhance strategic drilling & completions decisions and data management. Although each company had a different reason for data quality profiling, the results all indicated a higher level of trust and confidence in the data over time.

Especially in the current climate of “blow and go” activity, many drilling decisions are bets based on the best available data at the time. Multi-million dollar mistakes can be made if data used is incomplete, inaccurate, or inconsistent. Our case study E&P companies realized that they are more than engineering operations – they are in fact asset management companies, where data is their most valuable asset. Since their drilling performance is predicated on accurate data, it was vital to ensure that reservoir and well data gathered from different sources and disciplines is of the very highest quality and integrity.

A fundamental first step taken by the three E&P’s in the case study was to perform “data quality profiling” to identify any and all possible data issues. Learn how data quality profiling is an emerging technique that automates the ability to tag “trustworthy vs. untrustworthy data” when it pertains to drilling decisions.

Introducing Data Quality Profiling- A Case Study Approach

Sometimes it seems that in our day-to-day world when we’re dealing with everyday problems, the smallest things can have the biggest consequences. This is especially true in the oil and gas industry where we are constantly dealing with large volumes of complex cross-functional scientific, engineering and geological data. The slightest discrepancy in a lat-long value or a sidetrack TMD can mean the difference between a dry hole and a gusher.

The challenge for E&P engineers and geo-professionals is that to do their jobs they must align large volumes of data: geophysical, engineering, operating metadata and financial data, to geospatial references, in a way that provides ready access across diverse cross-functional project teams. So it is not only data managers who have to worry about data quality (DQ), but it is the responsibility of every E&P professional to know about the quality of the data they rely on to do their jobs. Gone are the days when E&P companies thought of themselves primarily as engineering businesses. Increasingly upstream E&P’s are recognizing the importance of becoming expert data management companies that can trust data assets they rely on to find and extract oil and gas.

It wasn’t always this way, and in many instances today, engineers, drillers and geo-professionals still struggle to find the right data to make the best decisions. This paper will discuss three cases where data quality was initially not considered in the E&P decision making process, until the effects and costly consequences were factored into the equation. Each case study provides a constructive example of the benefits of some initial, easy-to-do data quality checks, along with the advantages of profiling data.