

عنوان مقاله:

Investigation Of Formation Fluids Effect On Casing String Corrosion While Drilling

محل انتشار:

اولین همایش مهندسی عمران و منابع زمین (سال: 1401)

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خلاصه مقاله:

The casing of the well is the most important part of the process of drilling wells for crude oil because of its great importance, it is the spine of the continuity of the production processes in oil and gas wells. Previous research has led to the conclusion that failure due to the external wall of the production casing accounts for the majority of failures in oil wells. The corrosion of iron (casing) types K-55 and N-80 was examined in various fluid circumferences, such as salt water (SW), formation fluid (FF), sulfuric acid concentration 1M (SA), and two types of drilling mud related to formation fluids drilling mud polymer lime-based (MU1) and (MU2). It was determined that corrosion occurs more quickly in the acidic fluid circumference, and this is why the corrosion rate values indicate this. Then we investigated the effect of time on iron (casing) corrosion in each of the fluid circumferences studied. We observed that corrosion rates decreased over time. The effect of pH on iron (casing) corrosion was also investigated. The highest corrosion rates were found in the acidic fluid circumference. In an acidic fluid solution of (1M) sulfuric acid, the effect of temperature on iron (casing) corrosion was investigated, and the corrosion rates were observed to increase with the high temperature of the corrosive fluid circumference.

کلمات کلیدی:

Casing Corrosion Rate, Casing Grades, Loss Weight Method, Drilling Fluids, Formation Fluids, Sulfuric Acid, Formation Fluid Acidity

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