Borregaard

BioDrill

# BIODRILL GREENSCAV FE / FEQ

A sustainable $H_2S$ Scavenger for the oil & gas industry

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**Borregaard's GreenScav Fe and GreenScav FeQ are water-soluble Fe complexes used for scavenging $H_2S$ in brine and fresh-water systems.**

BioDrill GreenScav Fe and GreenScav FeQ combine Fe(II) with lignosulfonate to provide an efficient $H_2S$ scavenger that also aids in dispersion of solids. GreenScav Fe and Greenscav FeQ are effective over a wide pH range including under acidic conditions and is supplied in a powder form that easily dissolves in water.

## APPLICATION

Iron-based scavengers function by reacting with $H_2S$ to form insoluble iron sulfide. When iron is combined with lignosulfonate, the availability of metal to scavenge $H_2S$ is improved, resulting in faster kinetics and higher efficiency compared to standard iron-based products like iron oxide and ferrous gluconate. GreenScav Fe and GreenScav FeQ powder can be used to prepare a 12 wt% to 35 wt% solution in water.

## RECOMMENDED DOSAGE

GreenScav Fe: one pound per barrel
(1 lb/bbl or 2.85 kg/m³) for 190 mg/L $H_2S$

GreenScav FeQ: one pound per barrel
(1 lb/bbl or 2.85 kg/m³) for 160 mg/L $H_2S$

## MAIN BENEFITS

- Water-soluble
- Especially suited in locations where use and disposal of heavy metals like zinc is restricted
- Built-in dispersing and mud thinning capability
- Corrosion protection properties
- Does not cause scaling
- Scavenges more $H_2S$ than Fe(II) gluconate at theoretical required dosage

## $H_2S$ SCAVENGING PERFORMANCE

Scavenging tests were conducted in a sealed test vessel containing synthetic brine at pH 6 and 55°C. The scavenging was monitored at regular time intervals using a Garret gas train.

GreenScav Fe has greater scavenging efficiency than ferrous gluconate for the same scavenger dosage (1.5 kg/m³). GreenScav FeQ exhibits rapid kinetics compared to both ferrous gluconate and GreenScav Fe. A higher dosage of GreenScav FeQ (1.8 kg/m³) was used in experiment to account for slightly lower Fe content in the product compared to GreenScav Fe (figure 1)

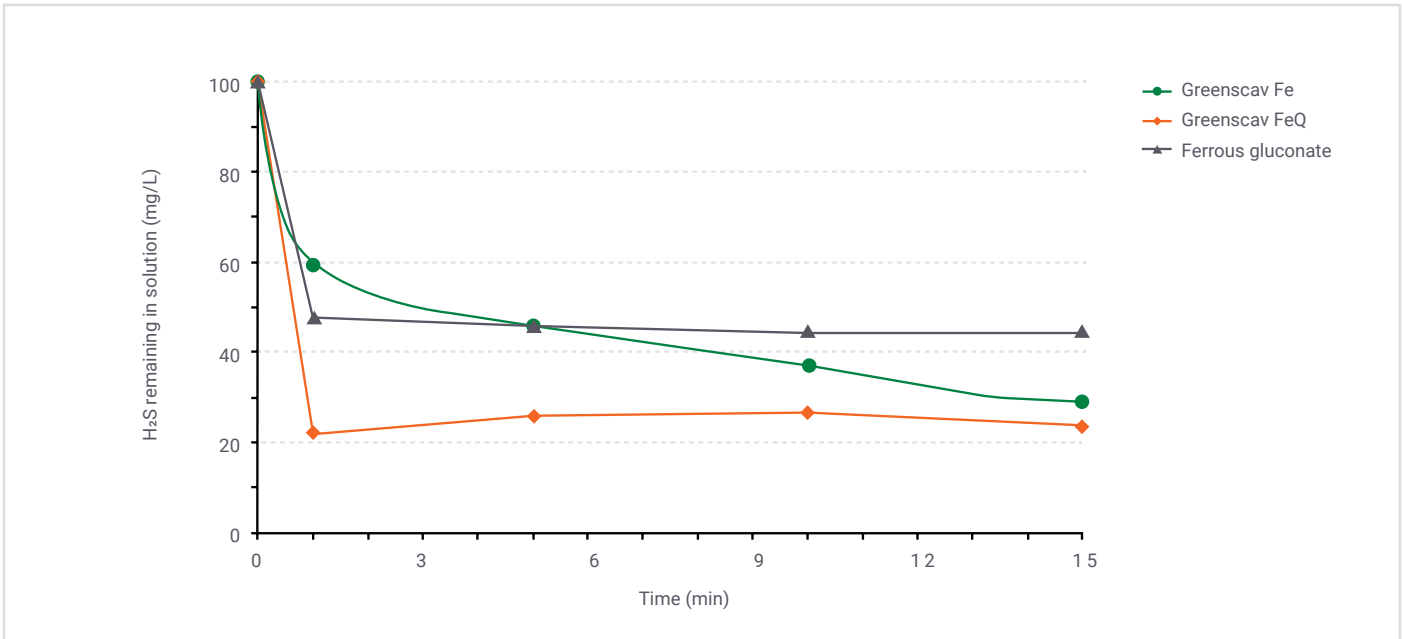


*Figure 1. H2S scavenging with GreenScav Fe (1.5 kg/m3), GreenScav FeQ (1.8 kg/m3) and ferrous gluconate (1.5 kg/m3) in synthetic brine at pH 6 and 55°C based on 165 mg/L iron (II) in scavenger.*