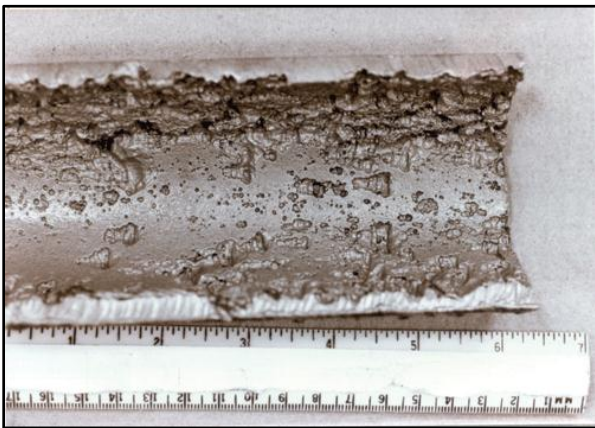


Challenge

Chemicals injected into the well-stream protect the production system in a completed well. However, the casing annular space must also be protected. Production casing and tubing has to be protected from the damaging effects of corrosive agents such as oxygen, carbon dioxide and hydrogen sulfide throughout the life of a well. The damage due to general, crevice, pitting and cracking corrosion must be minimized and this has to be maintained in wet, saline environments at elevated temperatures. Uncontrolled corrosion can lead to the failure of drill pipe, casing or production tubing.



Dissolved carbon dioxide pipe corrosion

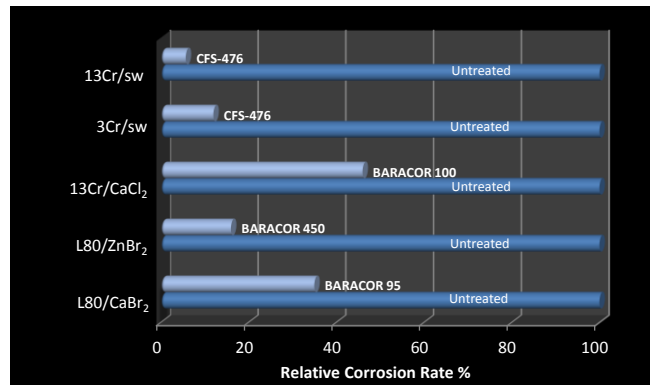
Overview

Dissolved oxygen, carbon dioxide and hydrogen sulfide will attack steel directly and corrosion is encouraged under scales, solid deposits and biofilms. Baroid offers corrosion protection additives to protect steels in a range of brine and temperature environments.

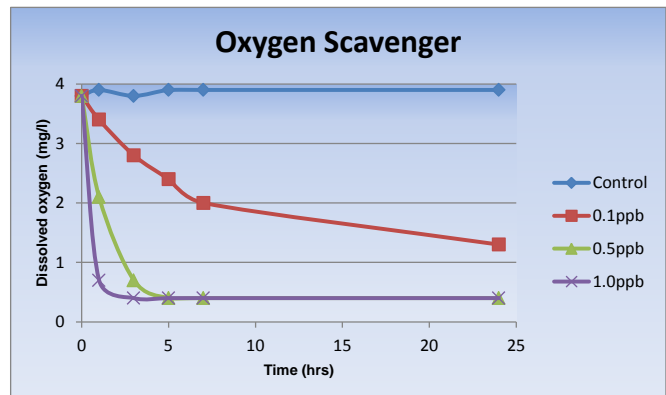
Features

Baroid corrosion inhibitors offer a range of chemistries and actions to meet local environmental requirements and specific brine and steel combinations. Corrosive agents, such as dissolved gases, can be removed quickly and thoroughly from packer fluids. In addition, biocides prevent microbial growth and inhibitors provide long term protection from corrosion actions.

Corrosion inhibition can be achieved in both mono and divalent brines and protection can be maintained up to 450°F. Treatments include unique, patented products for scavenging and protection. Protection programs are specified and optimized on the basis of laboratory testing.



This graph demonstrates the protection of various steel and corrosion resistant alloys with Baroid's corrosion inhibitors.



This graph demonstrates the rapid effect of OXYGON™ oxygen scavenger on dissolved oxygen concentration.

Corrosion Protection Additives

Filming Agents

BARACOR® 95	Maintains high pH and provides high temperature protection
BARACOR® 100	Nitrogen-based filming agent suitable for mono and divalent brines
BARACOR® 700	Filming phosphonate inhibitor for monovalent brines
BARAFILM™	Filming amine inhibitor, suitable for atmospheric protection
CFS™-476	Filming amine inhibitor, suitable for mono and divalent brines

Passivating Agent

BARACOR® 450	Thiocyanate inhibitor for zinc brine
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Scale Inhibitor

BARABRINE® SI™	Used in conjunction with BARACOR 450 to prevent scaling
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Biocides

ALDACIDE® G	Glutaraldehyde biocide for rapid action
STARCID™	Organic biocide for long term protection

Oxygen Scavengers

BARASCAV™ D	Sulfite-based oxygen scavenger
BARASCAV™ L	Bisulfite liquid form oxygen scavenger
OXYGON™	Organic oxygen scavenger suitable for mono and divalent brines
CFS™-635	Scavenger stabilizer with high thermal stability

Hydrogen Sulfide Scavenger

SOURSCAV®	Soluble iron-based H ₂ S scavenger for drilling fluids
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Benefits

Baroid corrosion inhibitors, scavengers and biocides can be added to drilling and completion fluids to protect drill pipe, casing and production tubing against corrosion damage. The range of treatments, the application program and the protection assurance are all customized for the well's requirements. This helps prevent failure and maximizes the productive life of the well.

Conclusion

With a wide array of corrosion inhibitors, effective treatments for individual tubular metallurgy and brine combinations can be specified based on the well conditions. These can be combined with oxygen scavengers and biocides to maximize the protection from corrosion attack. Baroid inhibitors provide corrosion protection for drilling, workover and packer fluids.

Creating a customized solution for every completion fluid, Halliburton experts help ensure that the right products, technologies and processes are in place to do the job efficiently, effectively and safely, every time.