

Frequently asked

Questions

Is there a product that you can put on wireline and braided line to help protect the line in H₂S wells? If so what is it called? How do you apply it? How well does it work?

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A There are two main corrosive elements that can adversely affect the performance of any steel wireline, Hydrogen Sulfide and Carbon Dioxide. A detailed description on this chemical reaction can be found in Wireline Works' technical bulletin #13. Either (or both) of these gases can be present in oil and gas wells ranging in concentrations from highly corrosive to trace amounts. The potency of these elements in reference to the corrosion of steel is mainly dependent on the concentration of the gas, temperature and pressure of the environment which makes giving baseline safe use recommendations virtually impossible with any degree of certainty. Armed with the knowledge that there is no safe concentration of H₂S or CO₂ suitable for a steel wireline and the high price of alloy wirelines relative to their steel counterparts, wireline operators who frequently encounter low levels of corrosive well conditions have a difficult decision to make.

Is it more economical to purchase a steel wireline knowing they will have to continue to purchase new lines as they corrode and are taken out of operation? Or purchase a high cost alloy wireline? This problem has prompted many to seek an alternative method of reducing the risk associated with running a steel product in a corrosive well. Many of our customers have turned to wireline grease manufacturers who sell H₂S and CO₂ resistant greases and lubricants that claim to protect a steel wireline from all types of corrosives, but do these products really work? In order to get to the bottom of these claims I decided to investigate these products by scouring their online product information and talking with representatives from two of the largest manufacturers and distributors of wireline lubricants and greases.

Upon investigating manufacturer's online information there are a multitude of products to choose from. These products claim to protect your wireline from everything between hydrochloric acid to salt water corrosion and are packaged in 5 gallon buckets all the way up to 55 gallon drums. There are two primary types of wireline corrosion resistant products that come in variable viscosity greases or liquid sprays. Sprays are applied through a dipping mechanism or spray nozzle apparatus affixed to the wireline unit during the re-spool of a job and are mainly used in preventing rusting when the wireline is not in use, but can also be purchased with CO₂ and H₂S resistant additives. Grease products are injected during operations through the grease injector and act as a pressure barrier and lubricant when utilizing pressure control equipment. These products are typically silicon or petroleum based, but can be formulated with biodegradable elements suitable for environmentally sensitive operations.

While one manufacturer's website advertises that their CO₂ resistant products provide protection against the corrosive effects of hydrogen sulfide up to 50,000 PPM or 5% concentration, manufacturers admit that the concentrations of corrosive elements are difficult to determine. One representative explains, "Customers are assuming a percentage of CO₂ in the well, but often that is not the case and very high CO₂ is nearly impossible to protect against." In fact, concentrations approaching 10% or higher are nearly impossible to protect from corrosion and with concentrations at these levels the only option is the use of an alloy wireline to prevent catastrophic damage to a cable.

