OIL & GAS – CASE STUDY

OEM Improves Operational Efficiency and Saves Maintenance Dollars Treating Vortex Meters with e9 Pro Performance

Results

- Extended time between required cleanings over 3X as long with e9 Pro Performance treated Vortex meter
- **Saved over $22,000.** Typical spend per cleaning cycle is $7500 including the cost of the new sensor, labor, cleaning and calibration. $7500 multiplied by what normally would have required at least 3 cleaning cycles = $22,500.
- Treated meters remained within operational specifications for over 6 months
- Reduced environmental impact from fewer cleaning cycles: less use of cleaning agents, less power usage, and less waste

Customer

OEM customer using Vortex meter on oil & gas production pad

Application

Vortex flow meters are flow measurement devices best suited for measurements where the introduction of moving parts presents problems. Vortex flow meters measure fluid velocity using a principle of operation referred to as the von Kármán effect, which states that when flow passes by a bluff body, a repeating pattern of swirling vortices is generated. The frequency that the vortexes are shed depend on the size and shape of the body. It is ideal for applications where low maintenance costs are important.

An OEM had a customer complaining about paraffin deposition occurring in vortex meters within less the 30 days of installation at their well site. A 2” Vortex Meter installed in the separator oil flowline began showing very erratic data at approximately 50 days. Upon removal of the meter, service technicians noticed large paraffin deposits packed around the shedder bar or diaphragm and caked into the sensing ports or “nostrils” of the meter. Upon inspection, all parties concluded that paraffin deposition was affecting the accuracy of the meter.

When meters failed due to paraffin deposition, the customer typically spent approximately $7500 per incident to install a replacement meter and to have the failed meter cleaned, reserviced and recalibrated.

Untreated vortex meter showing paraffin deposition in < 30 days below

Vortex meter treated with e9 Pro Performance after 90 days below

OIL & GAS – CASE STUDY

Test

The OEM decided to treat a Vortex meter with e9 Pro Performance as a trial and to test the meter at the customer's well site for improvements. It was critical that the meter remain within specifications for more than 30 days and to not require maintenance due to fouling issues to keep their customer's business.

A cleaned and calibrated 2" Vortex Meter was treated with e9 Pro Performance using a dip/flush application process. The exterior housing and all the components inside the meter's cavity were treated.

The treated vortex meter was installed at the customer's site in the same separator oil flowline, which had caused deposition issues. The engineered meter design allowed for 1% tolerance in measurement. The test was conducted to evaluate if the treated meter would remain within the 1% tolerance for 30 days. The treated Vortex meter continued to remain within specs for several months. After 80 days in service, the treated meter was pulled out for technicians to inspect for paraffin deposition. The photographs accompanying this case study show the paraffin deposition typical on the meter in less than 30 days and the paraffin-free meter after 80 days of use. The meter was returned to service and continued to operate within specifications for the next six months when the trial ended.

Resources

e9 Pro Performance
https://e9treatments.com/products/e9-pro-performance-metal-treatment/

LOWER ENVIRONMENTAL IMPACT

e9 Pro Performance Metal Treatment is environmentally friendly:

- Non-toxic
- Non-ozone depleting
- Low Global Warming Potential (GWP)

Extended maintenance cycles mean:

- Less cleaning
- Less chemical usage
- Less power usage
- Less waste disposal / paraffin remediation

e9 Treatments, Inc.
159 Enterprise Parkway
Boerne, Texas 78006
210-742-1051
InsideSales@e9Treatments.com
www.e9Treatments.com