



CUSTOMER

TARGA RESOURCES INC

LOCATION

TX USA / 2016

EQUIPMENT

COMPRESSOR

APPLICATION

LUBE OIL

ROI



**TOTAL
QUANTIFIABLE
ANNUAL
SAVINGS OF
OVER
\$300,000 USD**

CHALLENGE

Targa Resources was experiencing high levels of Black Powder contamination at its Galena Park terminal in purity NGL products and loading, vapor handling and facility lubrication systems. Black powder is a type of particulate contamination that is common in hydrocarbons and it consists of both ferrous and non-ferrous elements and compounds, in varying amounts, typically in high concentrations of particles under 10 microns in size. It is difficult and expensive to remove with conventional filtration, and as a result it has significant negative impacts on oil and gas equipment and facilities; this includes pipelines, pumps, compressors, meters and so on, as well as product quality.



Compressor lube oil system before magnetic filtration.

At Galena Park, low ethane propane (LEP) vaporizes in the flash tanks prior to ship loading operations, and the vapor is subsequently compressed by large Howden compressors and chilled to convert it back into LEP liquid for future sale. The compressors utilize injected oil as a sealing mechanism to reduce slip and to increase efficiency. The black powder in the LEP vapor was contaminating the compressor lube oil, thereby reducing its effectiveness and not only impacting compressor operations but the IMO lube oil pumps. The conventional filtration system was ineffective at capturing the black powder, particularly the particles below 10 microns in size.

SOLUTION

An OEI high-flow magnetic filter scrubber was installed immediately upstream of an IMO pump. The goals of installing magnetic filtration were: (1) eliminate the presence of contamination in the lube oil system, (2) reduce wear and tear on the compressors and pumps, (3) extend the life of the pumps and compressors, and save on maintenance and replacement costs, and finally (4) improve on the performance of the conventional filtration system to reduce costs related to replacement filter cartridges. Targa installed this unit in their lube oil system in 2017, and only during 2018 and 2019 (year to date) have the impacts been fully realized.



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RESULTS

Since installation, the lube oil system has functioned at a significantly higher level due to the removal of the contamination. The cost of the magnetic filter was \$19,989, and the total quantifiable annual savings have been in excess of \$300,000 per year.

1. The IMO pumps in the system are now performing as expected. Prior to installation, contamination issues had Targa replacing 2 pumps per year at a cost of \$65,000 per pump due to contamination issues. Since installation, no replacement pumps have been required, thereby saving the company \$130,000/year.
2. The cost of conventional filter elements has decreased significantly.
 - » In 2016, Targa had 67 filter change-outs at a cost of \$268,000.
 - » In 2018, that dropped to 24 filter change-outs at a cost of \$96,000.
 - » In 2019 and 11 filter change outs for a cost of \$44,000 (half-way through 2019).
 - » Based on 2018, the annual savings have been \$172,000 per year.
3. The Howden compressors have also been performing well, and no unexpected shutdowns have occurred due to contamination issues.

Targa has been highly pleased with the performance of OEI magnetic filtration and has installed (and is in the process of installing) multiple additional BPS magnetic separator systems at Galena Park as well as multiple other locations in their extensive facility network.



OEI high-flow magnetic filter scrubber.



Compressor lube oil system with magnetic filtration installed.