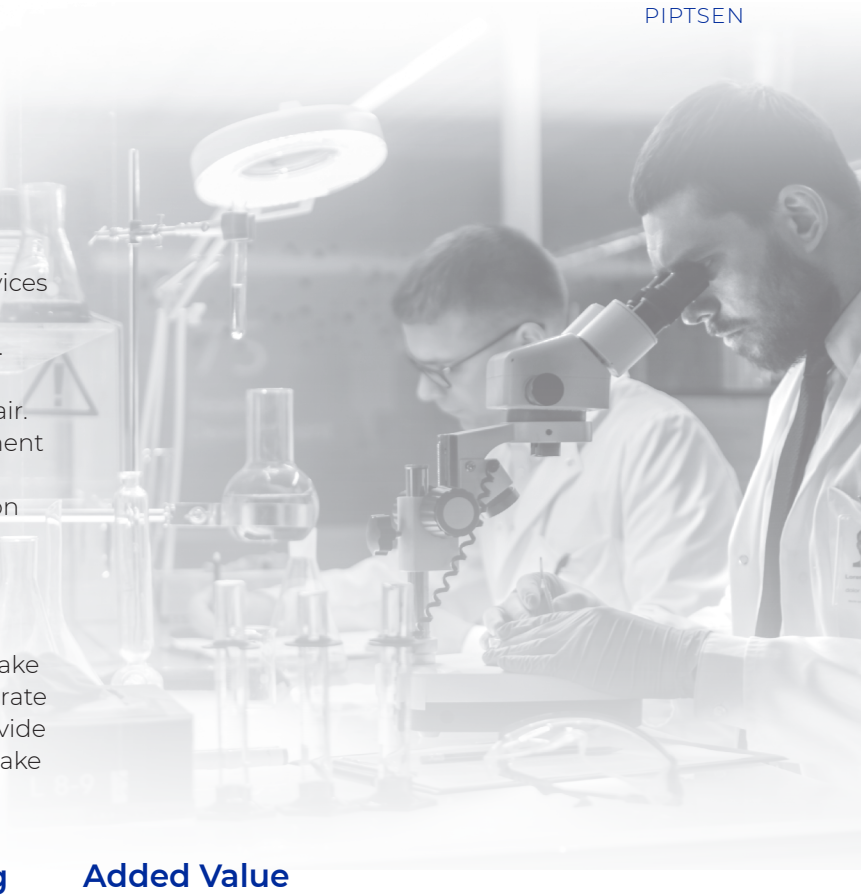
Pall Technical Services
Contamination Mapping Services

PIPTSEN



For Oil & Gas, Petrochemicals & Power Generation plants, tackling contamination is essential to ensure reliable operations, extend their assets lifetime and protect the environment.

Pall Corporation offers a comprehensive range of services that provide a convenient and reliable way to assure worry-free system operation and maximum run time. Our team of engineers and technical specialists are certified in process optimization, verification and repair. As a trusted provider of high-quality filtration equipment and expert technical services, we are committed to helping businesses take back control of contamination on critical process assets.

Pall Contamination Mapping Services

Our contamination mapping services offers a time stamped diagnostic assessment of your system. We take the pulse of the system and provide you with an accurate prescription to ensure your plant and equipment provide years of reliable service. The savings our customers make in operating costs means they enjoy a fast return on investment.

How it Works? Contamination Mapping

Using dedicated tools & pilot rigs, our field scientists connect to the process lines and collect samples of the contamination present in the fluid. The process is repeated to ensure samples are representative after which they are analysed on-site or in regional Pall laboratories for further evaluation

Deliverables

- Mobilization of Pall testing equipment to site
- Field piloting activities
- Demobilization from site
- Sample analysis & reporting
- Service report & recommendations

Added Value

Pall Services help End-users understand what's happening in their processes and find where the contamination is originating. This allows us to provide data-based recommendations to process & operation engineers for improvements and help buyers optimize their filtration spend.

Solutions can be trialled using rental skids, available for deployment from a comprehensive fleet of particulate filtration and coalescer filter skids. If proven in trial, permanent filtration installations can be planned and supplied or rental can be extended for longer term support.

Common Filtration Applications

- LPG, gasoline, diesel, and jet fuel final product filter
- Amine filtration
- Catalytic reactor bid protection
- Sour water stripper protection
- Pre-filtration for liquid/liquid coalescers

Common Coalescer Applications

- Water from LPG, gas oil, steam stripped diesel
- Remove water from fuels to protect catalyst bids
- Remove Hydrocarbon from Sour Water or Rich Amine
- Methanol removal from Propane or LPG streams
- Caustic removal from Hydrocarbon streams

Case Study

Problem

A middle East Oil & Gas Producer was planning a major expansion to a NGL (Natural Gas Liquids) & Gas transmission network.

In order to protect assets including metering skids, gas compressors, and shipping pumps, the producer requested Pall Services undertake comprehensive contamination mapping at select locations of his network, in order to understand requirements for future filtration equipment.

Figure 1 shows that from 12 locations, 7 are contaminated above maximum allowable limit, therefore 5 filtration projects were cancelled. Figure 2 shows that from eight tested locations, only one was actually experiencing contamination above the maximum allowable limit.

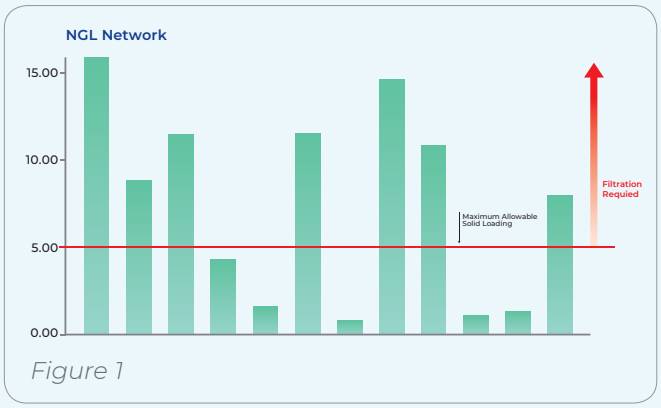


Figure 1

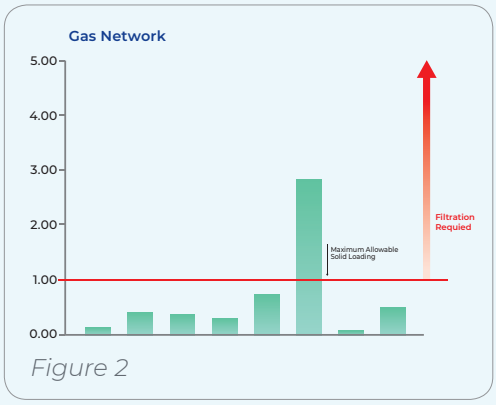


Figure 2

Benefits for End-user

- Cost savings on NGL and gas filtration equipment (budgets were re-allocated)
- Datasheets of NGL dewatering systems updated to reflect actual contamination data in each plant
- Some plants were able to identify the sources of contamination and took corrective actions upstream to control it

Findings and Recommendation

Working in co-operation with the site management team, Pall completed a system 'Health Check' to establish current state conditions. After sampling and analysis it was established that;

- Most "inlet feed gas" points were experiencing a higher solid loading than industry standard, with a wide particle size distribution, dictating that a 2-stage separation solution be applied
- "NGL" streams were clear of particulates but exhibited a high water content.
  - Most "condensate" streams were heavily contaminated. SEM (scanning electron microscopy) showed that contamination was mainly corrosion by-products (Black powder)
  - The existing filtration and separation equipment was not performing as designed

Our dedicated team would be happy to discuss your unique requirements and provide personalized recommendations.

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