



CASE HISTORY

FTC "ALTERNATIVE" SERIES SOLVES AMINE SWEETENING SYSTEM PROBLEM IN WYOMING SOUR GAS PROCESSING PLANT

Experiencing operational shutdown problems, low throughput rates and amine foaming this small gas processing plant looked to the amine sweetening system as the potential problem area. Inadequate filtration was suspected due to filter short life and visible solids in the amine filtrate.

PROBLEM:

The amine stream is "saturated" with suspended solids as well as the plant equipment with sludge from long term inadequate filtration. The full stream filtration system is through sock type filter cartridges and requires changing every 3-4 days due to high H₂S content in the exit gas stream. Due to the full stream filtration system, whenever the filters required changing, the entire plant operation was shut down. These problems along with short gas production are costly to the operator.

SOLUTION:

The filter cartridges were replaced with the FTC "ALTERNATIVE" Series cartridges for amine sweetening systems. These filter cartridges are specifically designed to remove stream particles to 10 μ absolute or less; the recommended level for this amine circulating systems. Due to the amine system solids "saturation" it was estimated that at least three sets of filter cartridges would be required to bring the system into balance.

The first set of filters remained in the system for 8 days and was changed when the plant was shut down for a compressor problem, not because the filters were expended. A second set installed for the re-start remained in the system for 27 days and were changed when the H₂S level reached a shutdown point. A third set was installed and remained in the system for 68 days before they reached differential change out pressure. Subsequent filter cartridge changes remained in the system for 55 to 65 days. A significant increase in filter cartridge life while removing the suspended solids to the proper operating range was experienced in the initial three set trial.

COST EFFECTIVENESS:

Cost analysis for the sock type filter to the FTC "ALTERNATIVE" Series cartridge required that the FTC cartridge last 16 days for a direct cost comparison. Increased filtration efficiency and extended filter life from the FTC cartridge demonstrated its cost effectiveness both in direct cost and in overall operation efficiency.

The operator continues to benefit from increased gas production, reduced cartridge filter and disposal cost, reduced amine losses and reduced system maintenance costs.

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