CASE STUDY:

Windrock Technical Services Saves Money & Increases Capacity

Background

A major oil and gas producer was seeking ways to reduce maintenance costs and maximize natural gas pumping capacity. The producer primarily utilized high-speed reciprocating engine/compressor assemblies for their compression processes and had historically operated under a preventative maintenance schedule. Performing routine machine maintenance based on unit operating hours resulted in unnecessary maintenance, unexpected downtime and poor unit efficiencies.

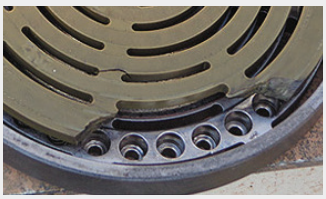
Solution

The producer turned to Windrock for assistance to assess the health of their machine, quantify machinery performance and guide maintenance efforts and expenditures. Windrock performed onsite engine and compressor diagnostics at a station with 5 engine/compressor units. After analyzing the data collected Windrock identified leaking discharge valves on one compressor unit and restricted suction valves on another compressor unit. Both machines had been operating with the faults undetected.

Results

Upon completion of the recommended repairs, all units were analyzed again. The unit with leaking discharge valves showed a 7% improvement in gas flow with a 5% reduction in the amount of horsepower required. With the unit in operation 24/7, the producer was able to document a savings of $55,500[1] per year in fuel costs by replacing two discharge valves.

Replacing the restricted suction valves on the second compressor resulted in a 39% improvement in gas flow with only a 5% increase in the amount of horsepower required. Under the new operating conditions, the producer was able to pump the same amount of gas for $30,000[2] less per year. More importantly, the resulting increased capacity was worth $1,485,000[3] in potential revenue for the producer. Windrock's Engine & Compressor Diagnostics saved the producer over $85,000 per year and provided a significant boost to their revenue earning.



NOTES:

1. Based on a flow rate of 13.29 MMSCFD and an average fuel cost of $4/MSCF.
2. Based on a driver cost of $0.032/HP-hr to pump 7 MMSCFD for a year.
3. Based on a 2 MMSCFD increase in capacity for a year and an average sale price of US $2.00/MMBtu.

UNIT 1

7%	5%	$55k
Gas Flow Improvement	Horsepower Required Reduction	Savings/Year

UNIT 2

39%	$1.5M	$30k
Gas Flow Improvement	Production Revenue	Savings/Year