

## Using Analysis to Identify Significant Fuel Gas and Operational Savings

### Current Plant Configuration

Detection has been engaged by a senior North American energy producer for the past several years to monitor and identify fuel gas and operational savings across their compression fleet. Utilization of Analysis recently highlighted an opportunity to save some significant money at one of their gas facilities. The existing site configuration at this particular facility was three Waukesha L7042G drivers coupled with EI FE565-2 reciprocating compressor frames. These three units were pulling off the same suction line with a throughput of 200e3m<sup>3</sup>/d (7mmscfd) for the site.

The annual calculated fuel gas cost at this facility was **\$331,100**. The annual operating cost of the facility, which included the cost of maintenance parts, labor and lubrication, was **\$327,765**. Therefore, it cost the client approximately **\$658,865** per year to operate all three reciprocating compressors at this facility.

### Proposed Plant Configuration

Analysis and the Detection engineers proposed to shut down one unit while continuing to compress 200e3m<sup>3</sup>/d of gas. All gas entering the facility is boosted by field compression; so an increase in facility suction pressure would not affect the well deliverability. The suction pressure at the inlet to the facility would increase by approximately 100kpag (15psig) in the process of shutting one of the sales machines down.

This proposed facility configuration reduced the annual fuel gas consumption cost to **\$273,202**. The operating cost reduced to **\$222,662**. Overall annual savings with the reduction of one compressor was approximately **\$163,000**.

### Field Compression

By shutting down one of the sales units, the suction pressure increased by **approx 100kPag (15psig)**. This, in turn, increased the discharge pressure on the screw compressors in the field that were feeding this facility. The higher discharge pressure increased the HP required to boost the gas to the facility; which resulted in a marginal increase in the fuel gas consumed by the field screw compressors.

The increase in discharge pressure on the field screw compressors resulted in **\$31,896 per year** of additional fuel costs once the sales compressor was shut down.

**The net benefit for this field and facility was approximately \$131,000 per year when considering both operational and fuel savings.**

