Power Generator Package Reduces Annual Propane Costs by 37.5%

Objectives

- Reduce propane costs of the existing engine/generator package supplying power to three pump jacks.
- Gas being produced from the well has insufficient casing/natural gas pressure to support normal engine operation.
- With the existing system, the client was consuming approximately 288 liters of propane per 24-hour day at an average price of CAD 0.40 per liter, which amounted to an average cost of CAD 115 per day, or CAD 42,048 per year.

Our Approach

- Weatherford replaced the client's existing engine/generator package with a GM 5.7 44-kW engine/generator platform equipped with integrated electronic pressure regulator (IEPR) technology and then monitored fuel consumption.
- The engine/generator package uses an electronic control module (ECM) in the fuel system to monitor engine parameters such as fuel pressure, engine timing, temperature, exhaust O_2, intake manifold pressure, throttle position, and type of fuel gas being used. The ECM then optimizes the engine timing and the amount of fuel delivered through the electronic pressure regulator to the throttle body to maintain optimum engine performance. The fuel system of the engine, a priority pressure-based system, was designed to switch between propane and natural/well gas. It can also be set up to use only a single fuel, if desired.

Value to Client

- Use of the Weatherford GM power generator with IEPR technology allowed the client to maintain the rate of oil production while reducing the operating cost by lowering the required amount of propane.
- When a pressure switch detects sufficient natural gas pressure to support normal engine operation, the fuel-efficient engine switches from using propane to using natural gas from the well to run the engine. The ECM then re-optimizes the engine to run on the natural gas from the well. With the engine's ability to optimize propane or natural gas, the customer realized a cost savings.
- Propane consumption was reduced from 288 liters per day to 180 liters per day—saving the client CAD 43.20 per day and CAD 15,768 per year (at CAD 0.40 per liter). The calculated fuel cost reduction to the client is 37.5%.

The Weatherford GM 5.7 44-kW power generator equipped with IEPR technology enabled the client to significantly reduce propane fuel consumption.

CLIENT
Bruin Oil and Gas

LOCATION
Kinderslery, Saskatchewan, Canada

WELL TYPE
Onshore, light oil

EQUIPMENT POWER REQUIREMENT
3 reciprocating rod pump jacks, each powered by a 15 hp, 11-amp electric motor

PRODUCTS/SERVICES
GM 5.7 44-kilowatt power generator equipped with IEPR technology

Weatherford®