# Canadian heavy oil producer captures valuable vent gas

Oil and Gas

## Result

- 200+ compression packages being used to capture vent gas from oil wells, typically 40-120 mcfd
- Modular compression packages delivering scalable well head horsepower, improving utilization
- High pressure, dry gas is improving engine and oil tank burner operation
- Project payback in under 2 years

## Application

Heavy oil vent gas recovery.

## Customer

One of Canada's largest integrated energy companies, with significant heavy oil operations throughout Western Canada.

## Challenge

Western Canadian heavy oil producers have focused on capturing solution gas vented or flared from oil wells. Producers have aimed to capture the gas for its economic value, creating attractive financial returns. For years producers have looked for cost effective, low maintenance compressor technology to capture and effectively utilize oil well vent gas. Traditional compression technology has not been able to meet the unique demands of this application.

To survive in this environment, the solution needed to handle ambient temperatures from minus 40 to plus 40 deg C, as well as continuous duty under changing gas production rates.

*"These Copeland Scroll® compressors are well-suited to fit the needs of heavy oil due to the fact that we can compress smaller volumes of gas with very little maintenance."*

Senior Production Engineer
Lloydminster, Alberta, Canada

Copeland Scroll™

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Climate Technologies

Prior to Copeland Scroll® compression, existing compression offerings were often unreliable, high maintenance, and inflexible to changing gas flow rates.

Casing gas had to be compressed from 1 psig up to as high as 190 psig to be used productively. Traditionally this would have involved a two or three stage reciprocating compressor. Packages that employ rotary vane and most screw compressors are typically not suitable for pressure ratios of this magnitude.

## Solution

Emerson Process Management and PC Compression, Inc. of Nisku, Alberta partnered together to develop a compression package to meet this producer's specifications. Utilizing Copeland Scroll® compressor technology from Emerson, a unique gas compression/drying package has been deployed. The result is the industry's first modular, all electric scroll compressor package. The packages are meeting key customer requirements — application flexibility and low maintenance.

The all-electric approach was critical to achieving low maintenance. Casing pressure is automatically controlled via variable speed operation. Once the desired casing pressure set point is entered, the compressors instantaneously change speed to hold casing pressure constant. The scroll modules typically require once per year maintenance. The Copeland Scroll® hermetic compressor design eliminates belts, gears, hydraulics and associated maintenance.

## Typical project payback (Gas and Oil) ($CDN)

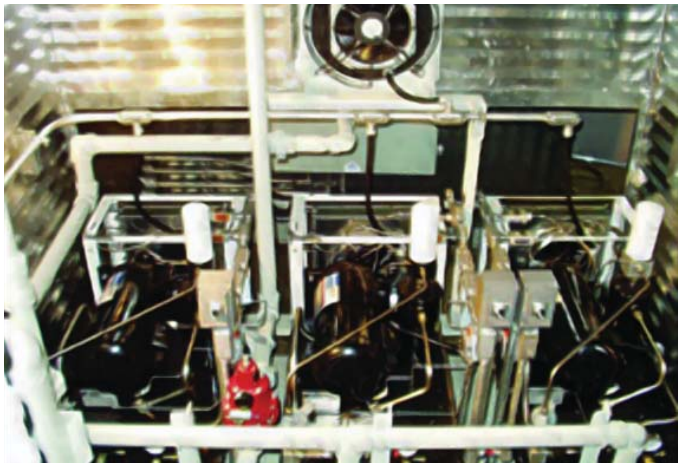
Value of utilized dry gas for onsite use....$4,200/month
(35 mcfd x 30 days x $4/mcf)

Value of sold vent gas.....$9,600/month
(80 mcfd x 30 days x $4/mcf)

Yearly maintenance costs.....$500 per compressor
(parts+labor)

Total capital and installation costs .....$275,000
(total project cost including gas lines, commissioning, site preparation, genset and $90K compressor package)

Simple payback for investment.....less than 2 years



*"All-electric Copeland Scroll® compressor packages are a popular choice due to their application flexibility, very-low maintenance, and high reliability."*

## Resources

To learn more about Copeland Scroll® compression solutions visit **EmersonClimate.com/oil_gas**

EmersonClimate.com