

Engineered Concepts, LLC

New Technology Overview

**Natural Gas STAR Producer's
Technology Transfer Workshop**

September 11, 2007

New Technology Now Available

- Quantum Leap Natural Gas Dehydration Technology (QLD)

What is the QLD Process?

First TEG dehydration process specifically designed

- To capture and convert virtually all hydrocarbon emissions to revenue
- For incorporation into or retro-fitted to dehydration packages
- To reduce total operating expenses

What is the QLD Process?

First TEG dehydration process specifically designed

- To reduce maintenance
- To improve operating safety
- To be used in any climate



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QLD is verified by the EPA to eliminate

- more than 99.74% of HAPs
- virtually all VOCs and Methane



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The QLD Process

- Field tested for over three years in two pilot plants
- Verification tested by the Greenhouse Gas Technology Center, Southern Research Institute in cooperation with the EPA
 - Testing completed in 2003
 - Report issued in September 2003

Retrofit QLD equipped with Direct Drive Pumping System

Jonah Field near Pinedale, Wyoming



Direct Drive Pumping System

- Kimray pumps are very wasteful as large volumes of gas are required to power the pump.
- The amount of gas required to power the pump is more than can be used by the dehydration process as fuel.

GAS CONSUMPTION for KIMRAY PV PUMPS

Operating Pressure - p.s.i.g.	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Cu. Ft./Gallon @ 14.4 & 60°F	1.7	2.3	2.8	3.4	3.9	4.5	5.0	5.6	6.1	6.7	7.2	7.9	8.3

GAS CONSUMPTION for KIMRAY SC PUMPS

Operating Pressure - p.s.i.g.	100	200	300	400
Cu. Ft./Gallon @ 14.4 & 60°F	1.0	1.9	2.8	3.7

Direct Drive Pumping System

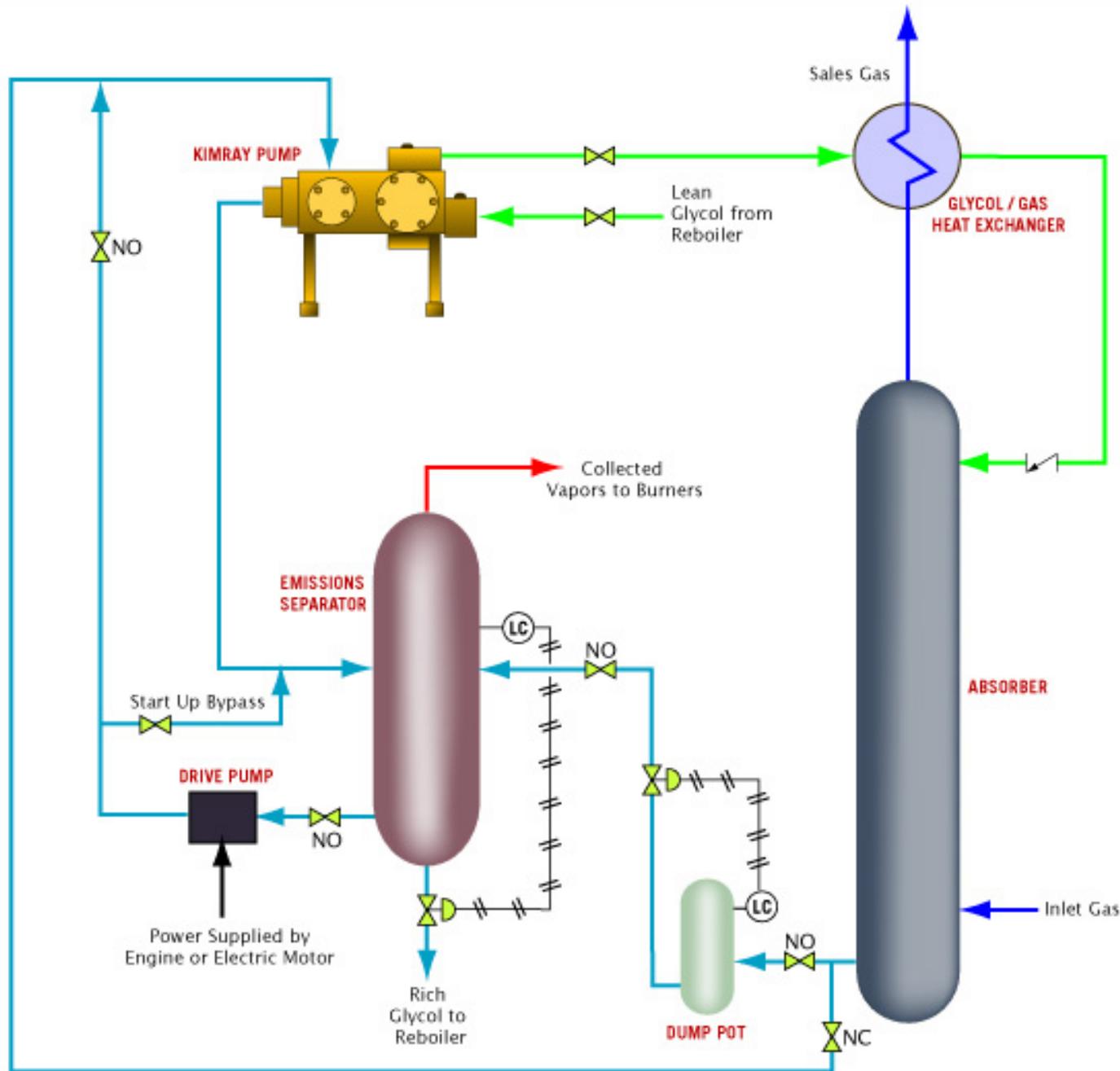
- Provides power to drive the Kimray pump without using wet glycol from the process.
- Eliminates gases vented from the Kimray pump that are used to provide the power to operate the pump.

Direct Drive Pumping System

- Excess gas is usually vented or flared. Rarely are facilities provided to capture this gas.
- Only gases absorbed by the glycol are vented by the Kimray pump - identical to an electric pump.







DIRECT DRIVE PUMPING SYSTEM

Direct Drive Pumping System

- The Kimray pumps are controlled and operated exactly like pumps without the Direct Drive Pumping System. Operators are already familiar with operations and maintenance.
- Glycol used to power the Kimray pump is cleaner than the glycol from the process. Pumps last longer and experience less maintenance issues.

Direct Drive Pumping System

- If power is lost the unit can switch back to normal Kimray pump operation while repairs are made. This cuts lost production to a minimum and alleviates start up concerns - particularly in cold weather.