

Ozone Prevention & Air Quality Action Workshop

March 24, 2011

“Industry”



PAMZ

Parkland Airshed
Management Zone

BONAVISTA
ENERGY CORPORATION

Industrial Sources

- Compressors
- Dehydrators
- Flaring & Venting
- Vehicle usage



Opportunities

- Co-Generation
- Solar Power
- Waste Heat Recovery Systems
- Toe-to-Heel Air Injection (THAI™)
- Geothermal Energy



Compressors

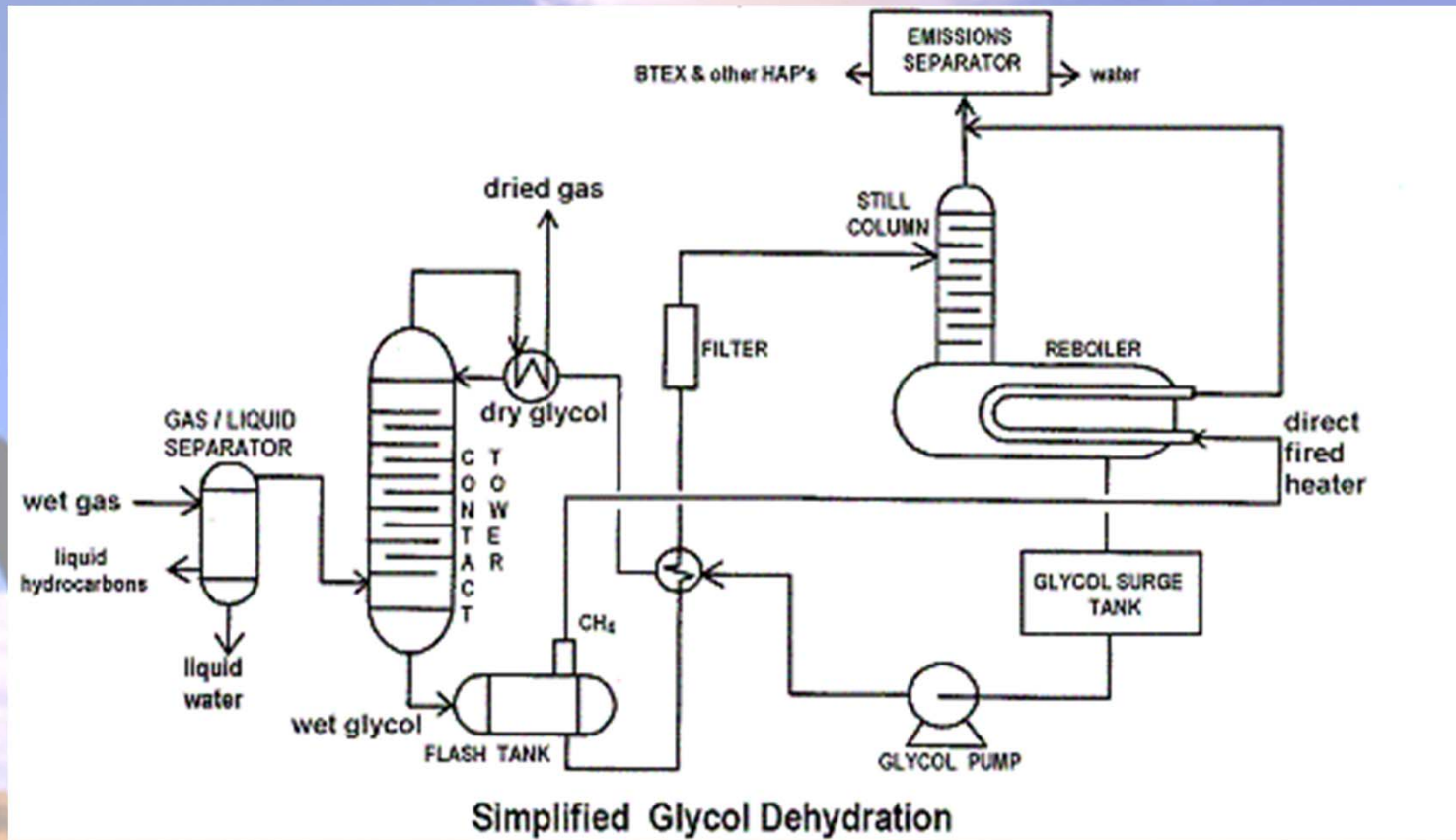
- Compress and transport natural gas
- Oil & Gas accounts for 48% of NO_x emissions in AB
 - 90% from stationary combustion engines
- AENV Code of Practice – September 1996
 - New or additional natural gas-driven reciprocating engines greater than 600 kW shall emit less than 6 grams $\text{NO}_x/\text{kW}/\text{h}$.
- Rich Burn vs. Lean Burn
 - REMVue AFR

Dehydrators

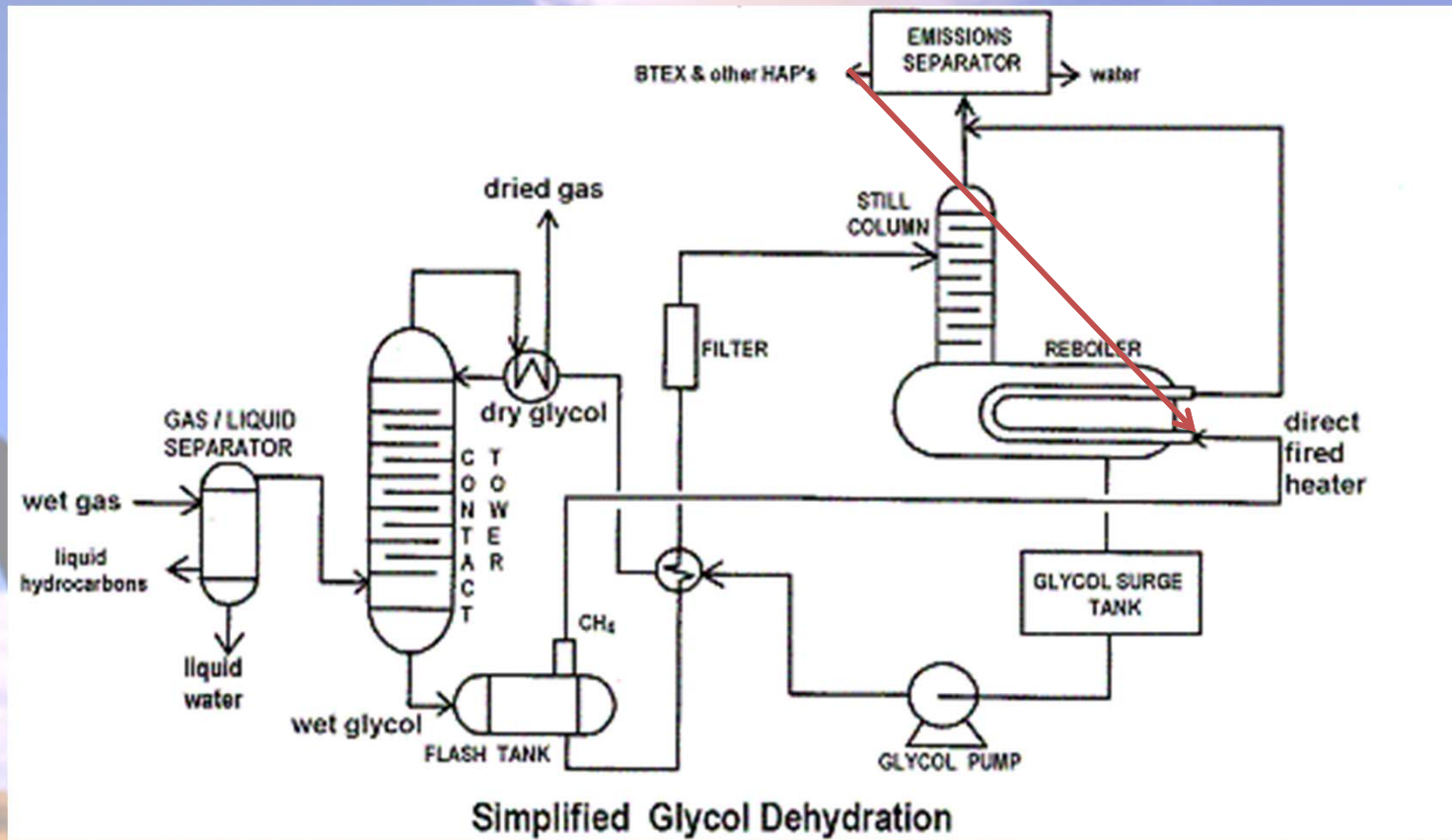
- Remove water from raw gas streams
 - Reduces corrosion
 - Prevents hydrate formation
- Major source of Benzene emissions
- ERCB D039 – Benzene Reduction Directive
 - July 2006

Date Dehydrator Installed or Existing Dehydrator Relocated	Benzene Emission Limits
Prior to January 1, 1999	
<ul style="list-style-type: none">• Greater than 750 m to permanent resident or public facility• Less than 750 m to permanent resident or public facility	5 tonnes/yr 3 tonnes/yr
January 1, 1999, to January 1, 2007	3 tonnes/yr
After January 1, 2007	1 tonne/yr

Dehydrators



Dehydrators



Thank You

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