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# Vapor Recovery Unit Application

Glenwood Springs Producers Technology Transfer Workshop

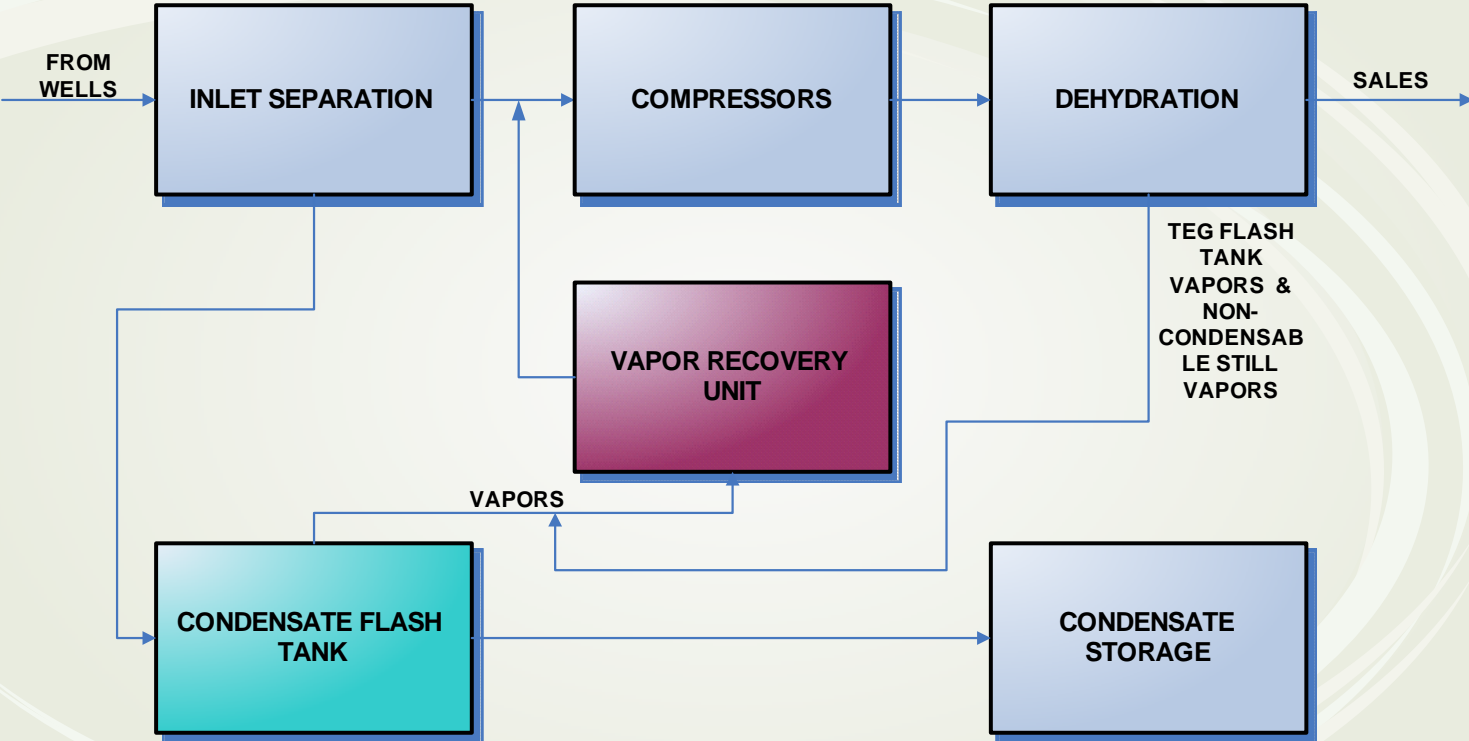
Presenter: Bill Herrmann

Company: Williams Production RMT

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# Block Flow Diagram – Crawford Trail



# Vapor Recovery Unit



# Condensate Flash Tank



# Specification Sheet



## SPECIFICATION SHEET VAPOR RECOVERY SYSTEM

PREPARED BY: Paul Rehrig  
 DATE: 11/9/2006  WILLIAMS PRODUCTION RMT CO.  
 DELIVERY REQ'D.: \_\_\_\_\_  
 SHIP TO: Crawford Trail Compressor St.   
 PROJECT: Crawford Trail Compression & Dehydration LOC: Garfield Co., CO  
 FURNISH: Sets / Date Req'd \_\_\_\_\_ Sets / Date Req'd \_\_\_\_\_ Sets / Date Req'd \_\_\_\_\_  
 Preliminary approval dwgs. 2 / 4 wks ARO Certified dimensional dwgs. 2 / 4 wks ARO Parts list. \_\_\_\_\_ / \_\_\_\_\_  
 Operating Instructions. \_\_\_\_\_ / \_\_\_\_\_ Installation Instructions. \_\_\_\_\_ / \_\_\_\_\_

### SPECIFICATIONS FOR VAPOR RECOVERY SYSTEM Trail Ridge Compressor Station

SITE ELEVATION	8500 FT.
AMBIENT TEMPERATURE (Min/Max)	-20/110°F
GAS ANALYSIS (Mol%)	
Carbon Dioxide	7.29
Methane	51.43
Ethane	18.83
Propane	11.34
I-Butane	3.10
N-Butane	3.25
I-Pentane	1.35
N-Pentane	0.97
Hexane Plus	2.44
TOTAL	100.00
INLET PRESSURE	14 PSIA
INLET TEMPERATURE	40°F
DISCHARGE PRESSURE	212 PSIA
CAPACITY	0.332 MMSCFD
GAS	SWEET NATURAL GAS
MOLECULAR WEIGHT	29.76
SPECIFIC HEAT RATIO (Cp/Cv)	1.201
COMPRESSIBILITY FACTOR (Z)	0.9924
DRIVER	ELECTRIC MOTOR
POWER	480 VOLT/ 3 PHASE/ 60 CYCLE
MOTOR ENCLOSURE	TEFC
ELECTRICAL AREA CLASSIFICATION	CLASS 1, DIV. 2

MARKS:

- Regulation 7 of the Colorado Air Pollution Control Division (APCD)
- Revised - 40 CFR, Subpart HH / O&G Area NESHAP
  - Rule effective on January 3, 2007
  - Subpart HH formerly addressed only major sources
  - Area source requirements now included in Subpart HH

- VRU Skid: \$93,000 X 1.5 installation factor = \$139,500
- Condensate Flash Tank: \$40,000 X 2.5 installation factor = \$100,000
- Total Estimated Cost: ~\$240,000

- Conserves BTU's of the recycled stream (\$\$\$)
- Eliminates flare stack that may be visible to the public
- Controls CO<sub>2</sub> emissions (greenhouse gasses)



- Designing for future expansion while maintaining operability at low flow rates
- Reliable power
- Operator understanding

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