

# Trinity CO<sub>2</sub> Pipeline

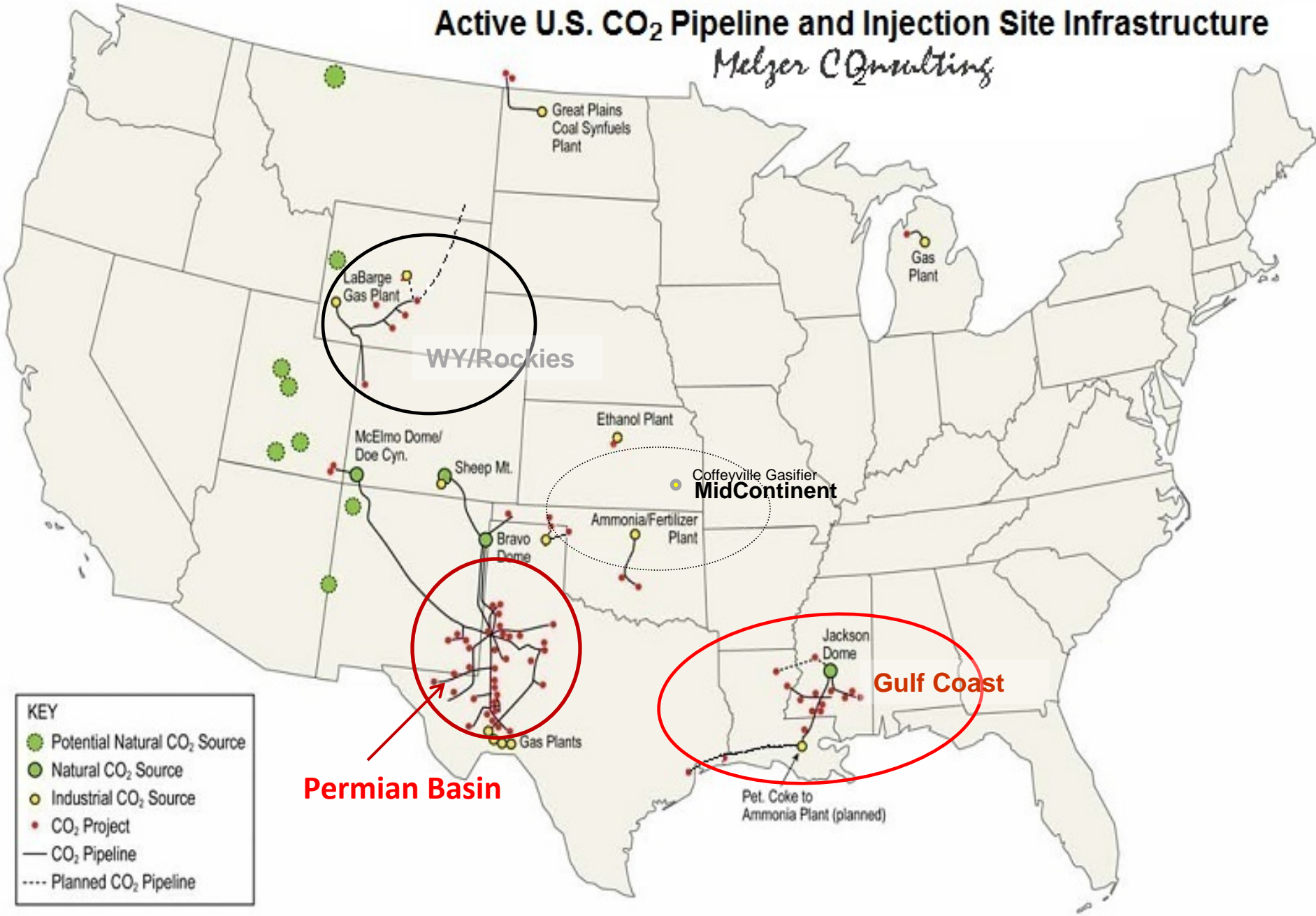
Key Considerations of Transportation

December 3, 2012

Midland, TX

# Active U.S. CO<sub>2</sub> Pipeline and Injection Site Infrastructure

*Melzer CO<sub>2</sub> Consulting*



**KEY**

- Potential Natural CO<sub>2</sub> Source
- Natural CO<sub>2</sub> Source
- Industrial CO<sub>2</sub> Source
- CO<sub>2</sub> Project
- CO<sub>2</sub> Pipeline
- - - Planned CO<sub>2</sub> Pipeline

**Permian Basin**

**Gulf Coast**

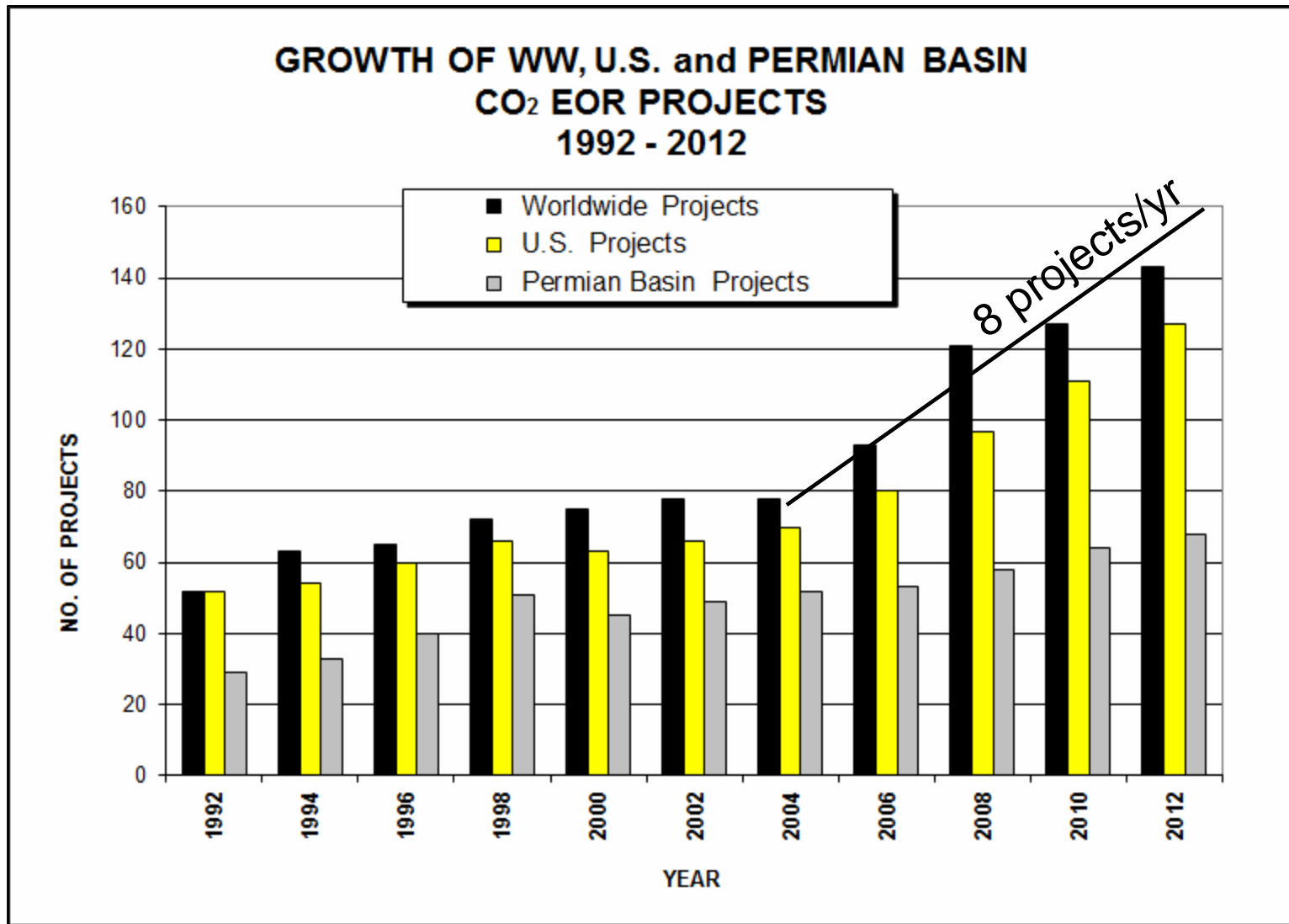
**WY/Rockies**

**MidContinent**

# LARGE CO<sub>2</sub> SUPPLIERS AT MAXIMUM CAPACITY

• McElmo Dome/Doe Canyon Source Fields	1300 mmcfpd
• Sheep Mountain	30 mmcfpd
• Bravo Dome	250 mmcfpd
• LaVeta and West Bravo	60 mmcfpd
• Century Plant	<u>100 mmcfpd</u>
<b>Total Permian</b>	<b>1.74 bcfpd</b>
• Shute Creek Wyoming	400 mmcfpd
• Denbury Resources Mississippi	1000 mmcfpd
• Dakota Gasification	<u>150 mmcfpd</u>
<b>Total non-Permian</b>	<b>1.55 bcfpd</b>
<b>2nd Q 2012 CO<sub>2</sub> Sales: 3.29 bcfpd</b>	

# CO<sub>2</sub> EOR PROJECT GROWTH\*

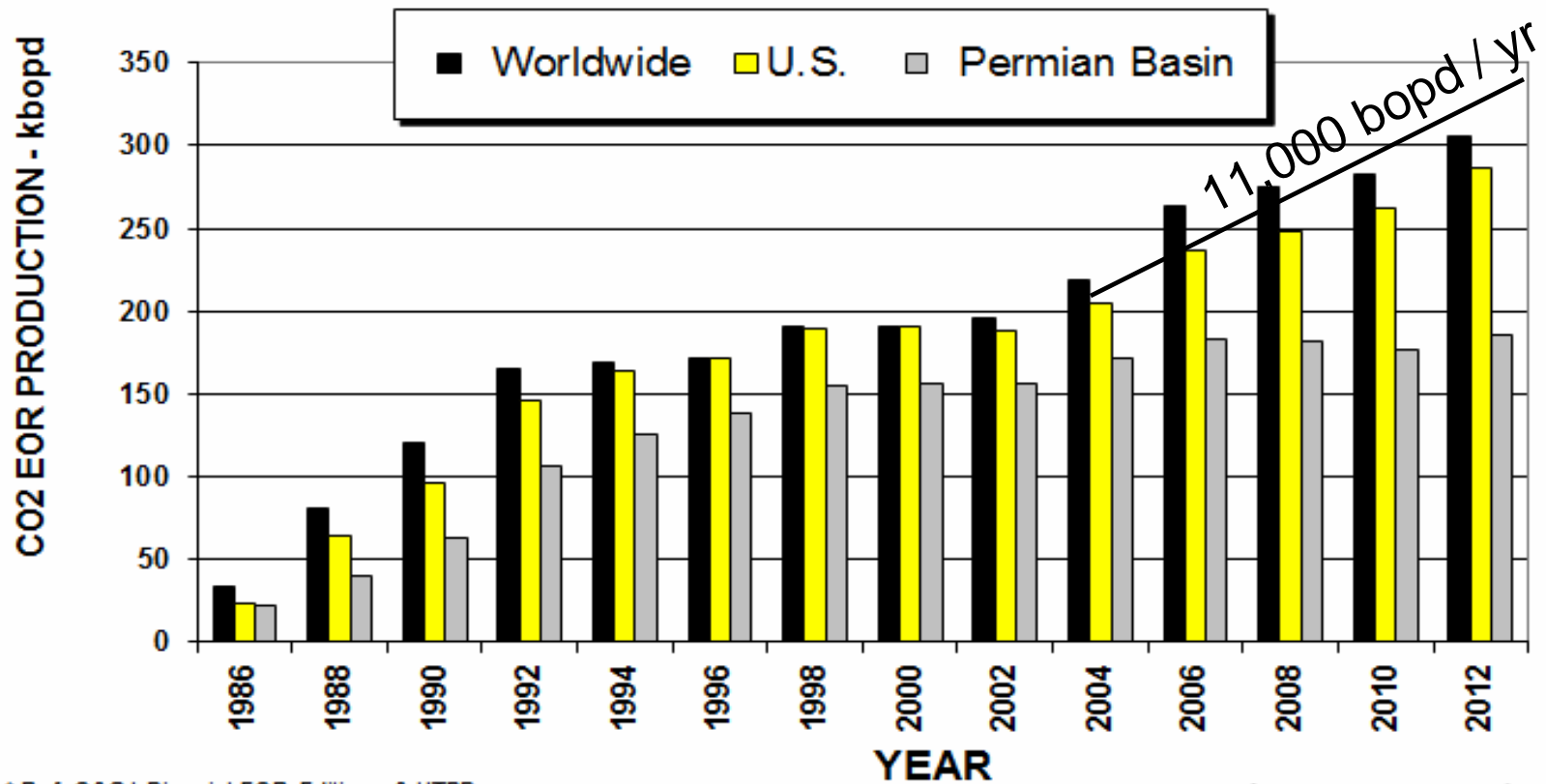


TRINITY\*

Oil & Gas Journal 4/2/12 & UTPB Petroleum Industry Alliance

# CO<sub>2</sub> EOR Production Growth\*

## WW, U.S., & PB CO<sub>2</sub> EOR PRODUCTION 1986 - 2012



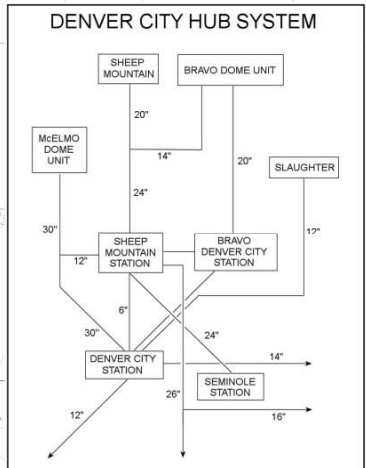
\* Ref: O&GJ Biennial EOR Editions & UTPB  
Petr Industry Alliance

Melzer Consulting

**SHEEP MOUNTAIN**  
 OPERATOR  
 OXY 50  
 EXXONMOBIL 50  
 RESERVES: < 0.2 TCF  
 DELIVERABILITY: 30MMCF/D

**McELMO DOME**  
 OPERATOR  
 KINDERMORGAN 44.5  
 EXXONMOBIL 43.5  
 CHEVRON 5.0  
 OTHERS 7.0  
 RESERVES: 10 TCF  
 DELIVERABILITY: 12 BCF/D

**BRAVO DOME**  
 OPERATOR  
 OXY 75  
 KINDERMORGAN 11  
 HESS 10  
 OTHERS 4  
 RESERVES: 2 TCF  
 DELIVERABILITY: 260 MMCF/D



**PIPELINE KEY**

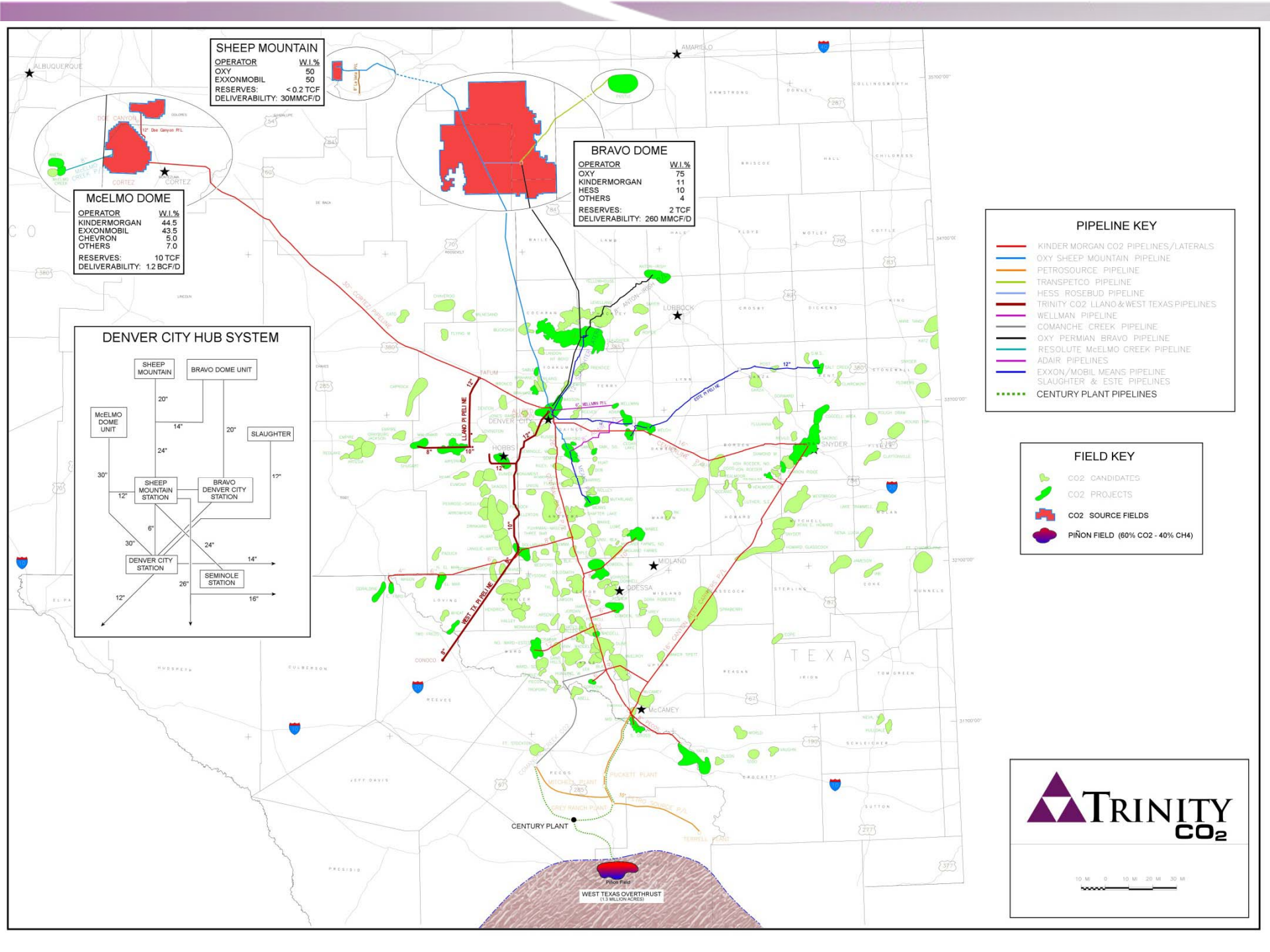
- KINDER MORGAN CO2 PIPELINES/LATERALS
- OXY SHEEP MOUNTAIN PIPELINE
- PETROSOURCE PIPELINE
- TRANSPETCO PIPELINE
- HESS ROSEBUD PIPELINE
- TRINITY CO2 LLANO & WEST TEXAS PIPELINES
- WELLMAN PIPELINE
- COMANCHE CREEK PIPELINE
- OXY PERMIAN BRAVO PIPELINE
- RESOLUTE McELMO CREEK PIPELINE
- ADAIR PIPELINES
- EXXON/MOBIL MEANS PIPELINE
- SLAUGHTER & ESTE PIPELINES
- CENTURY PLANT PIPELINES

**FIELD KEY**

- CO2 CANDIDATES
- CO2 PROJECTS
- CO2 SOURCE FIELDS
- PIÑON FIELD (60% CO2 - 40% CH4)

**TRINITY CO2**

10 MI 0 10 MI 20 MI 30 MI





# Transportation Primary Terms and Conditions

- Receipt/Delivery
- Quantity – Min and max
- Pressure – Min and max
- Measurement
- Fee – Fixed, indexed to oil, volume based
  - Take or Pay vs Reservation
  - Term
  - Notices – communication, invoices, payments
  - Miscellaneous – catch all (CA, FM, dispute resolution, etc)

# Transportation Quality Specs

- Carbon Dioxide – not less than 95% by volume
- Water – no free water nor more than 30 pounds of water per 1000 cubic feet
- Hydrogen Sulfide and Sulfur – not contain more than 20 ppm of hydrogen sulfide nor 35 ppm of sulfur
- Oxygen – not contain more than 10 ppm by weight of product
- Temperature – shall not exceed 120 degrees Fahrenheit



# CO2 Market Observations

- This is a long-term business
  - Capex intensive
  - Reliability
  - Not for everyone, but it is a robust business model
- Logistics is “King”
- Market is short of CO2 supply
- Substantial amount of “pent up “ demand
- CO2 supply will not exceed 30% of a barrel of revenue