Anadarko Petroleum Corporation

Salt Creek Field

C02 Flood Performance

EORI – Wyoming CO2 Conference
June 2009

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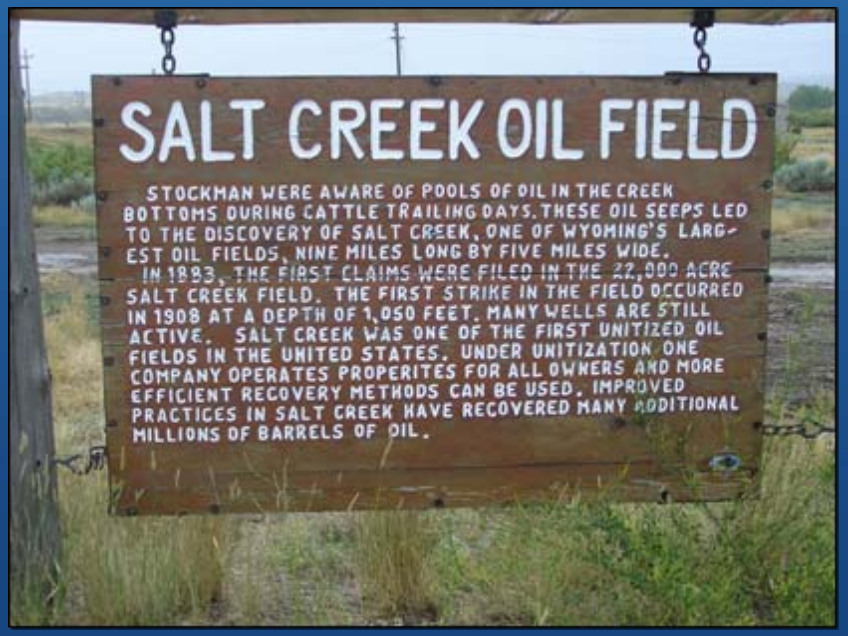
Reservoir Engineer

This presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities and Exchange Act of 1934. Anadarko believes that its expectations are based on reasonable assumptions. No assurance, however, can be given that its goals will be achieved. A number of factors could cause actual results to differ materially from the projections, anticipated results or other expectations expressed in this release. While Anadarko makes these forward-looking statements in good faith, neither Anadarko nor its management can guarantee that the anticipated future results will be achieved. Anadarko discloses proved reserves that comply with the SEC's definitions. Additionally, Anadarko may disclose estimated recoverable reserves, which the SEC guidelines do not allow us to include in filings with the SEC. See Additional Factors Affecting Business in the Management's Discussion and Analysis (MD&A) included in the company's Annual Report on Form 10-K.

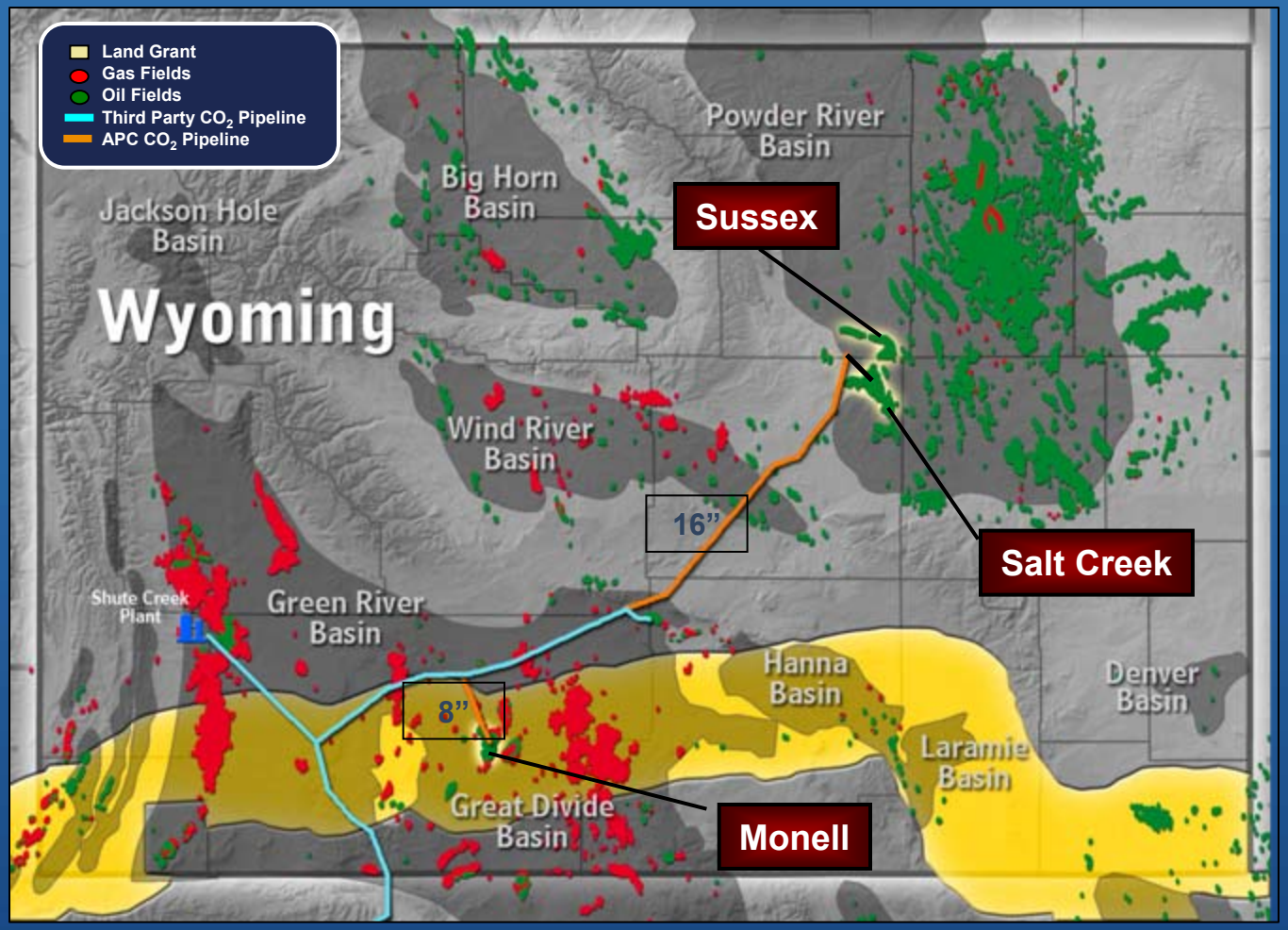
Outline

- History
- Brief Overview of Salt Creek Field
- Current CO2 Development
- Questions



Anadarko's Wyoming EOR Assets

- **Fields**
  - Monell
  - Salt Creek
- **Pipelines**
  - 33 mile, 8"
  - 125 mile, 16"
- **CO_2 Supply**
  - XOM Shute Creek



Salt Creek History

1908 – Dutch Company Strikes Oil at Salt Creek (WC1)

1917 – WC2 Discovered

1925 – Salt Creek Field Electrified

1939 – Salt Creek Light Oil Unit Formed

1962 – 1st full Scale Waterflood Development

2003 – CO2 Pilot Success

2004 – 1st CO2 Injection & Oil sales (Phase 1)

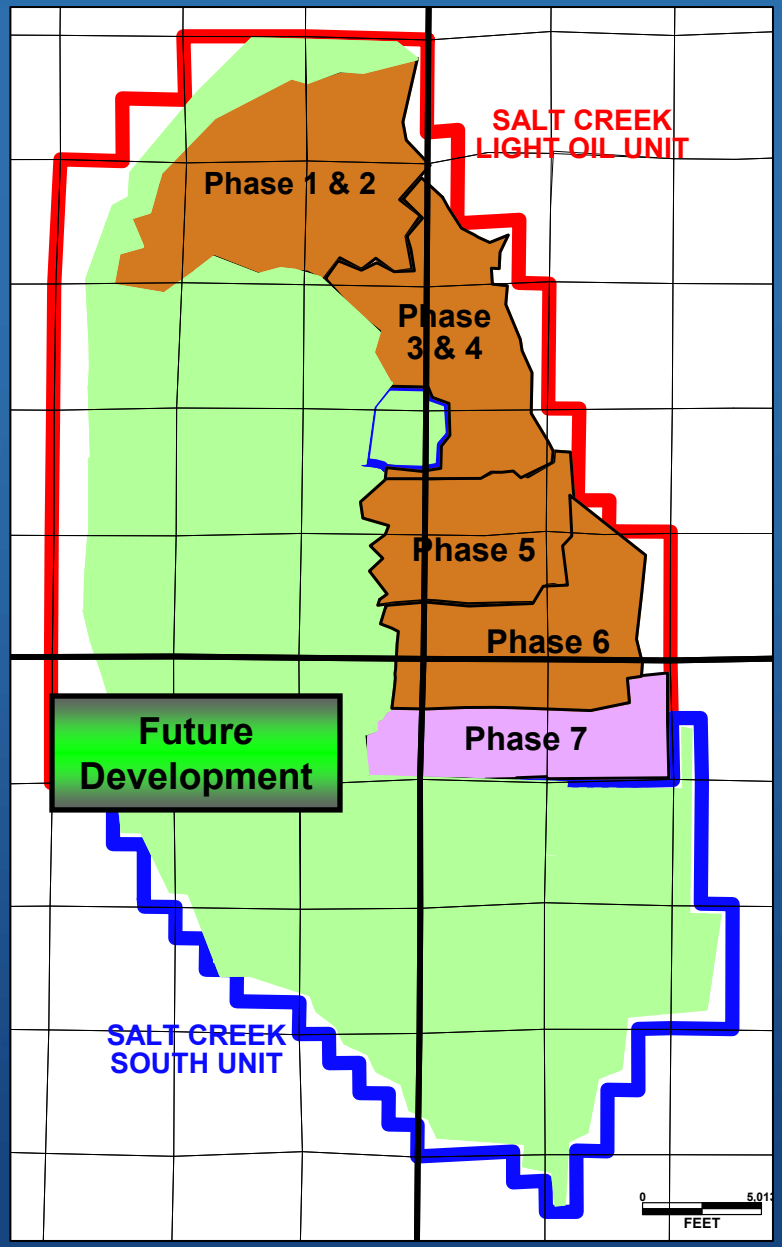
Overview

Salt Creek Field

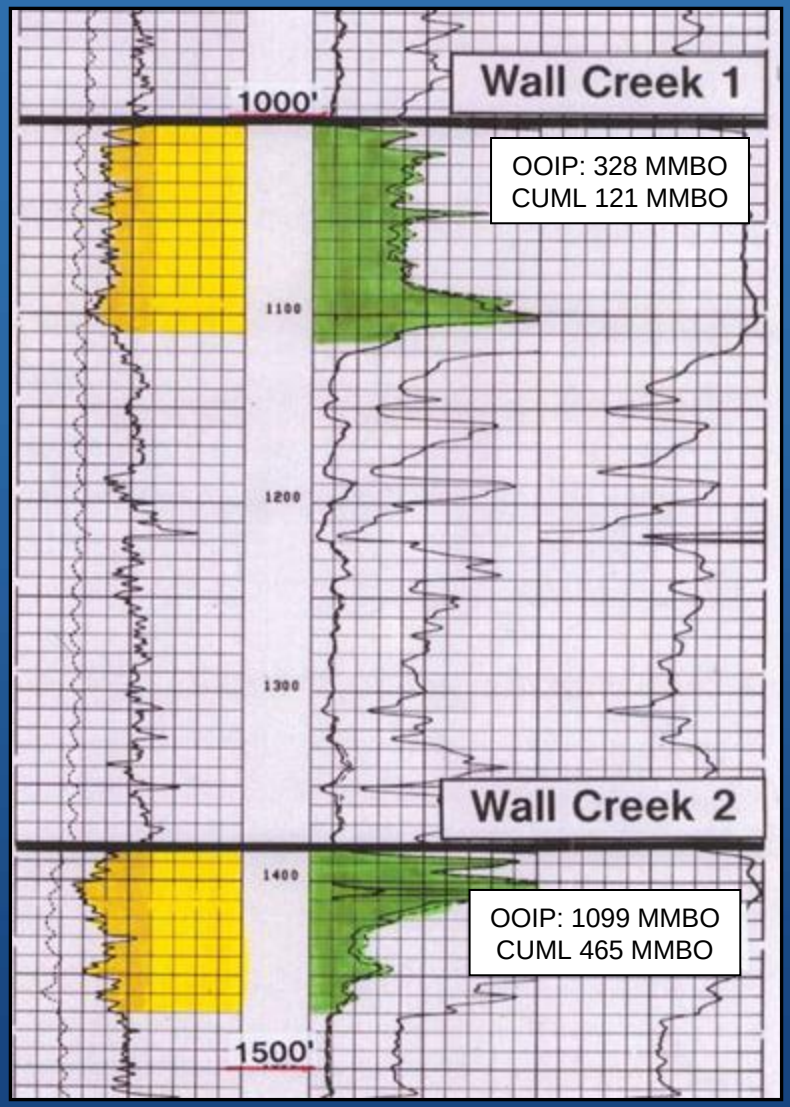
- Asymmetrical Anticline
- 1680 MMBO OOIP
- Cum Production 683 MMBO
- 11 productive intervals & over 4000 wells
- Anadarko acquired 2002

Wall Creek 2 (Primary Horizon)

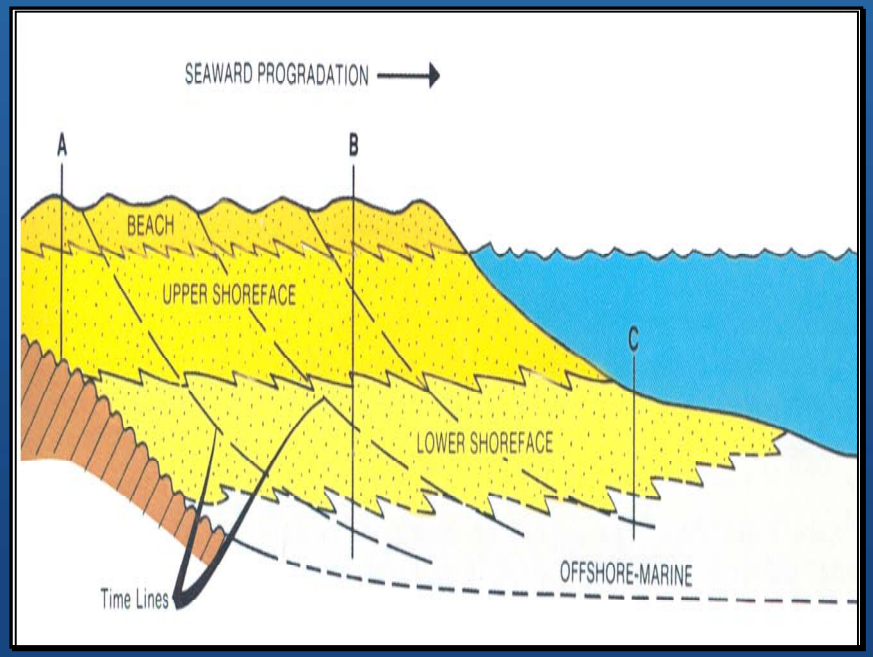
- 1099 MMBO OOIP
- Cum Production 465 MMBO
- Completed 6 of 16 development phases
- Currently developing Phase 7



Geologic Overview



- WC2 Depth: 1500-3000’
- Thickness: 85’ Net
- Average Φ: 19%
- Average K: 52 md
- Marine Shoreface



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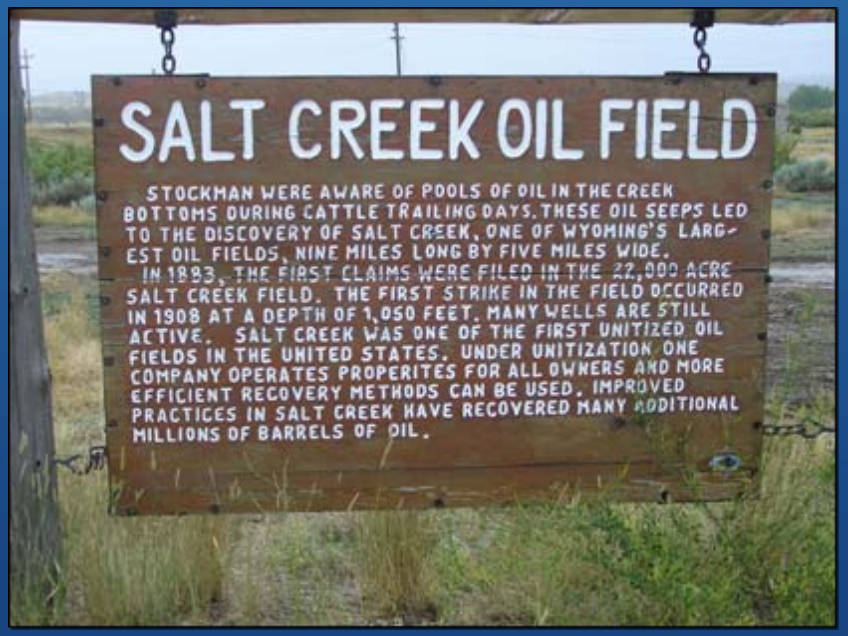
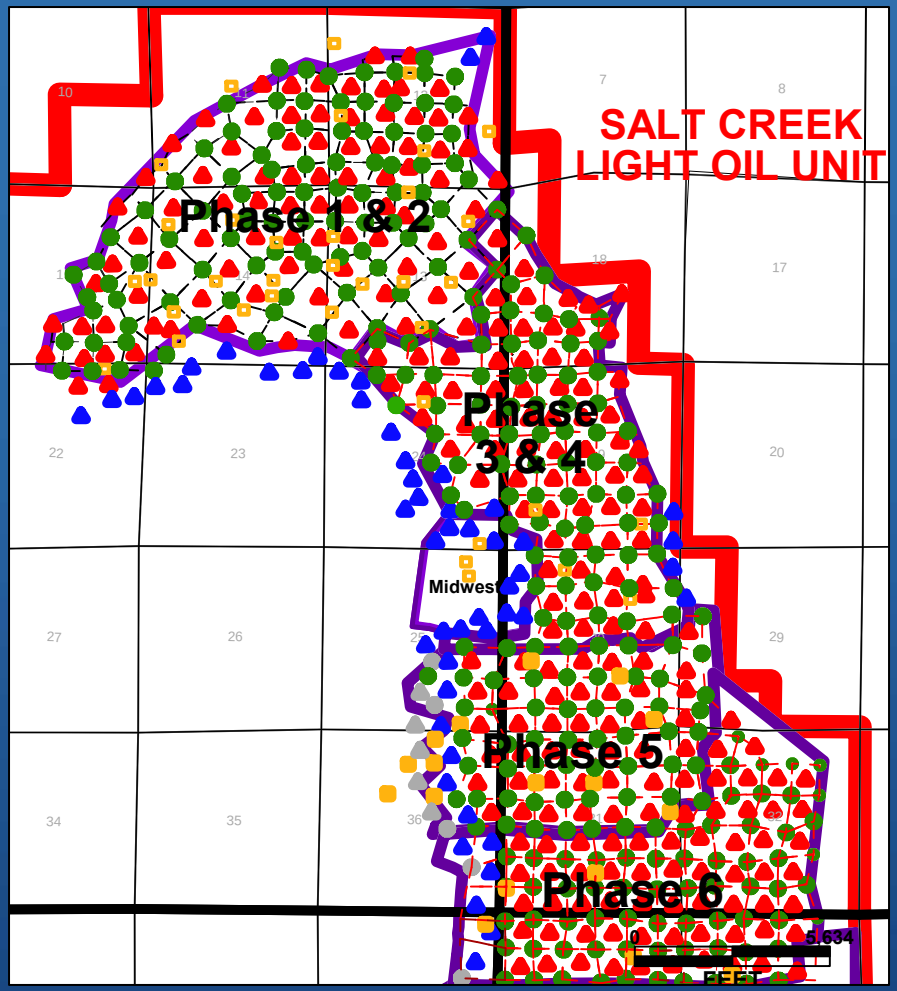


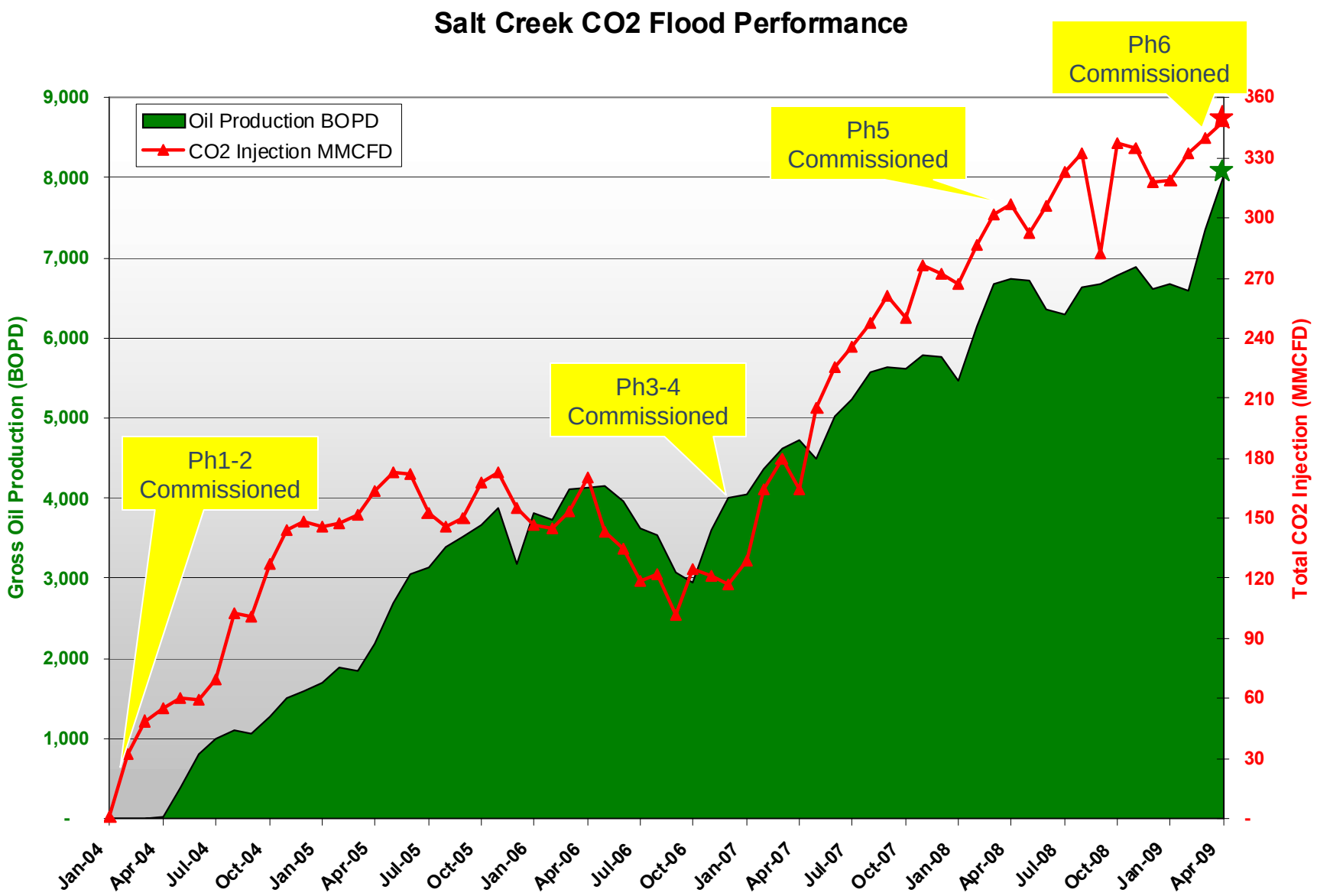
WC2 CO_2 Flood



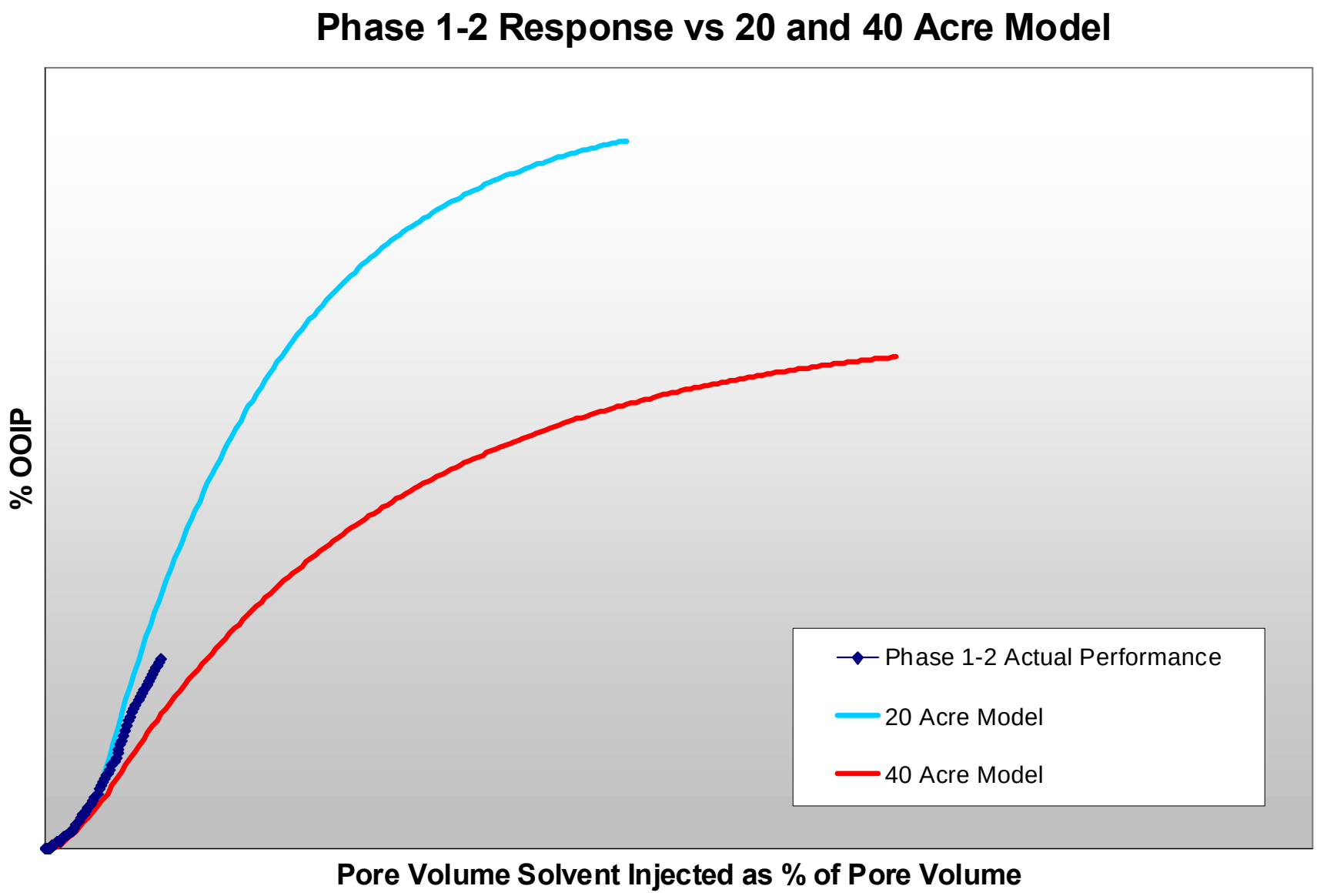
- Oil: 39º API
- MMP: 1,275 psi @ 105º
- Miscible areas on flanks
- Flood Type: (WAG) Water Alternating Gas
- Producers: Flowing wells (against surface backpressure of 200 – 400 psi)

254 Patterns
660 Active Wells
~8,000 BOPD from CO2

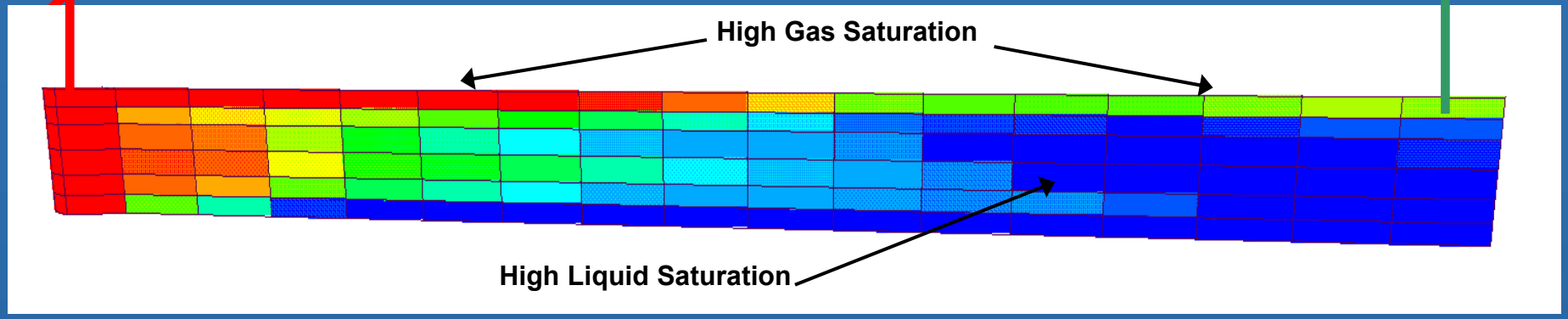
+ 8 MMBOE from Salt Creek CO2 flood



Phase 1-2 Performing as Expected



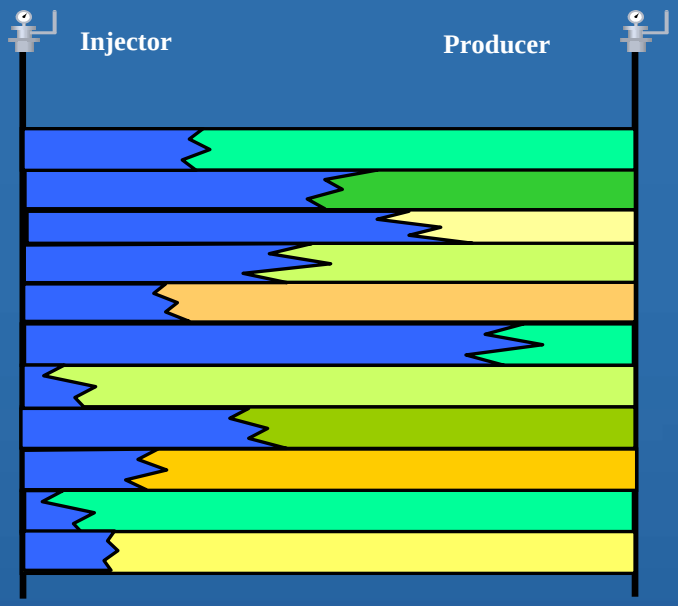
Reservoir Challenges

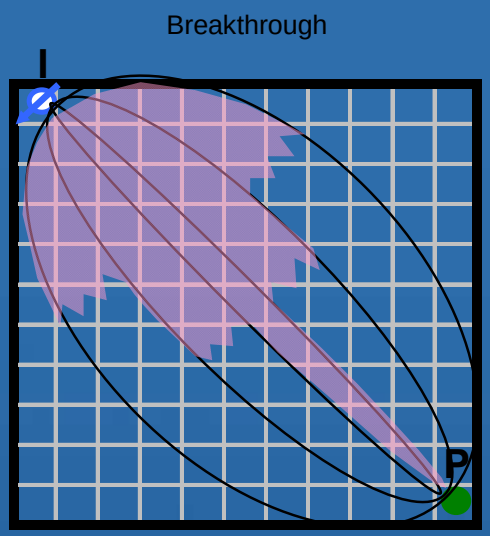


Operating Pressure	Temperature	CO2 Viscosity	CO2 Density
1300 psia	105 deg F	0.031 cp	29.3 lb/cu ft
3200 psia	140 deg F	0.065 cp	46.8 lb/cu ft

- Density of CO2 in “Typical” CO2 Operating Environment is Much Closer to Oil and Water Density than in the Shallow Environment
- Low CO2 Density and Reduced Flood Front Velocity Promotes Gravity Override

Reservoir Challenges





Schematic Depiction Stream Tubes
1/4 5-Spot Symmetry Element

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1300 psia	105 deg F	0.031 cp	29.3 lb/cu ft
3200 psia	140 deg F	0.065 cp	46.8 lb/cu ft

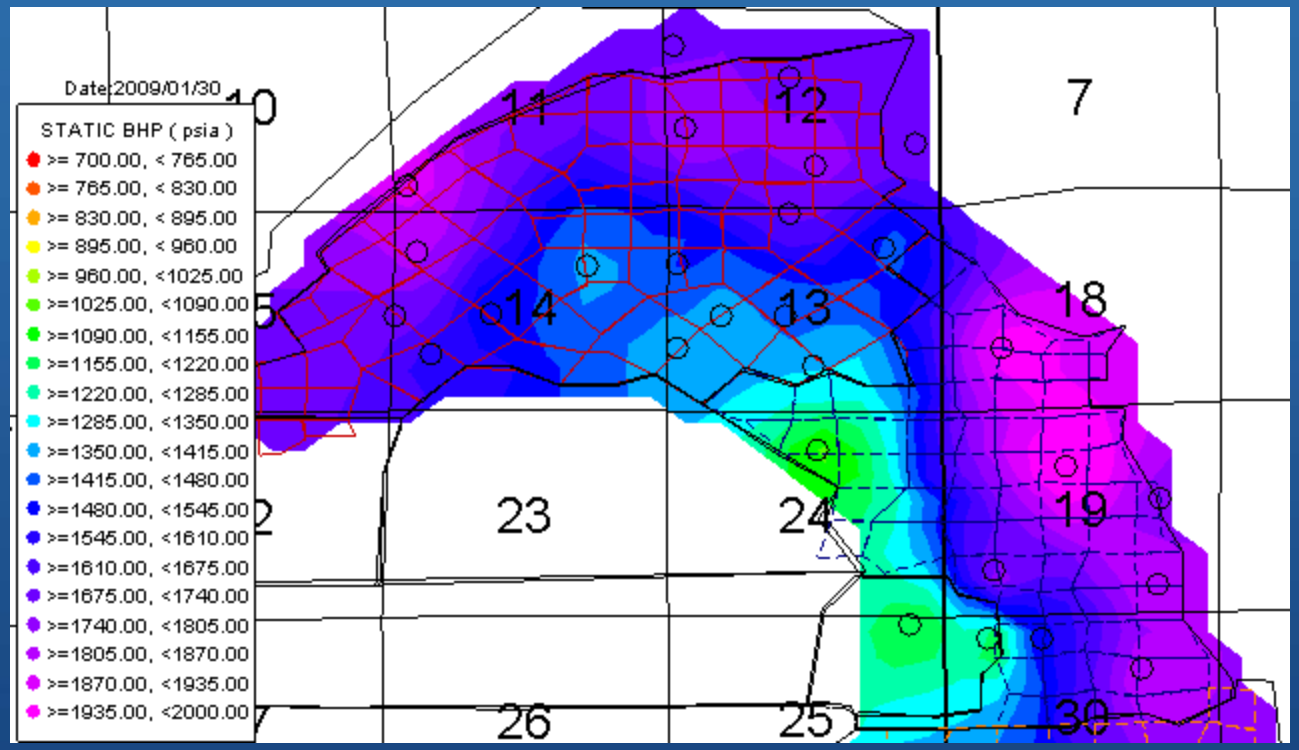
- Volumetric Sweep Reduction is Magnified with Lower Viscosity/Higher Mobility Ratio
- WAG's, Pattern Size

Reservoir Management Tools

- Diligent Surveillance Necessary for Optimal Recovery
- BHP Surveys
- Injection Withdrawal Ratio (IWR)
- Injection Processing Rate (PVI)
- CO_2 Utilization
- Step Rate Tests
- Injection Profiles
- Tracer Surveys
- Produced Fluid Temperature Monitoring
- Automated well tests, and human QC (for proper allocation where necessary to known data points)
- WAG Management

Reservoir Management Tools

- **BHP~ Stay above miscibility**
  - Quarterly BHP surveys



Datum BHP- Jan07

Datum BHP- Mar07

Datum BHP- Jun07

Datum BHP- Sep07

Datum BHP- Jan08

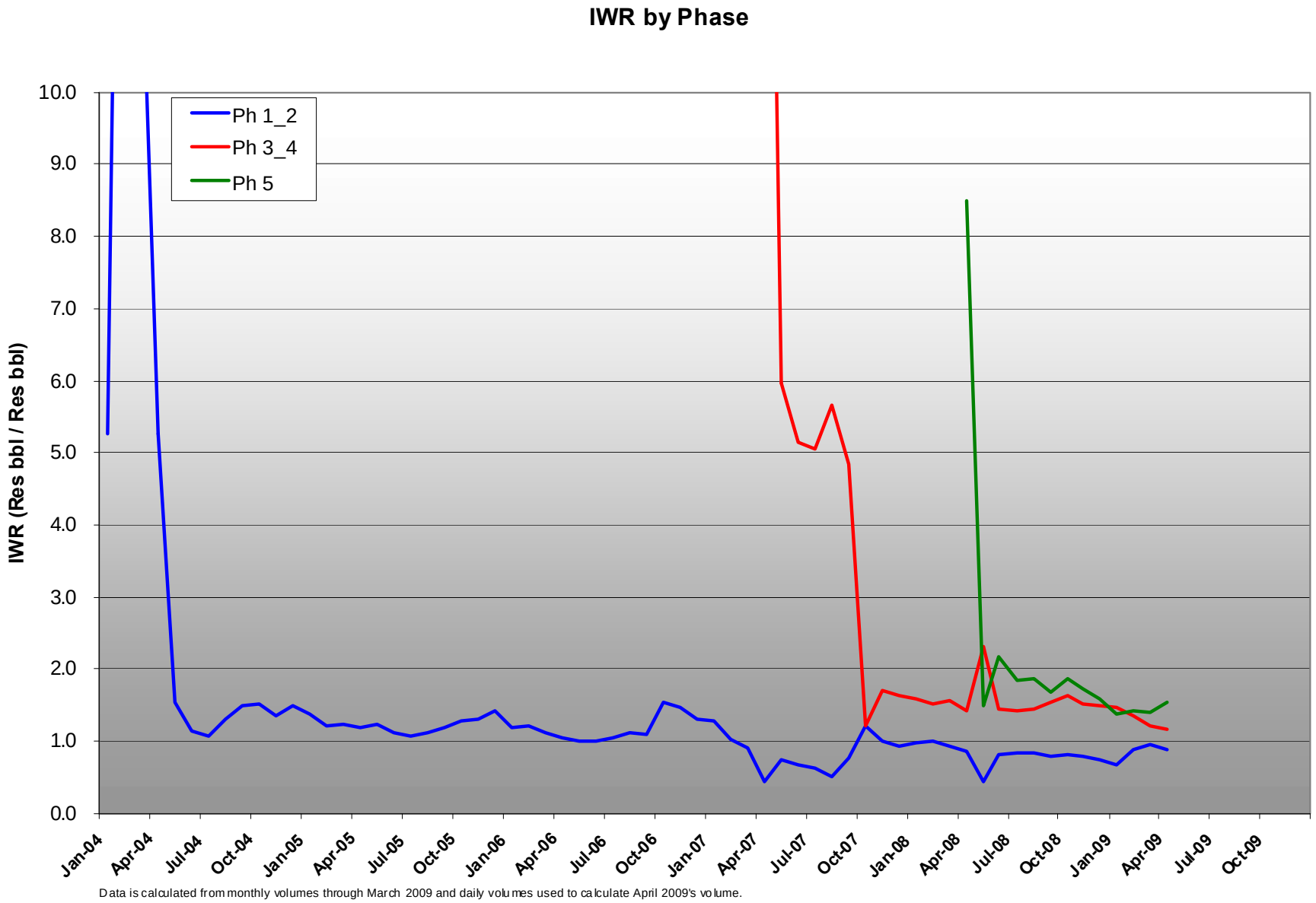
Datum BHP- Mar08

Datum BHP- Jun08

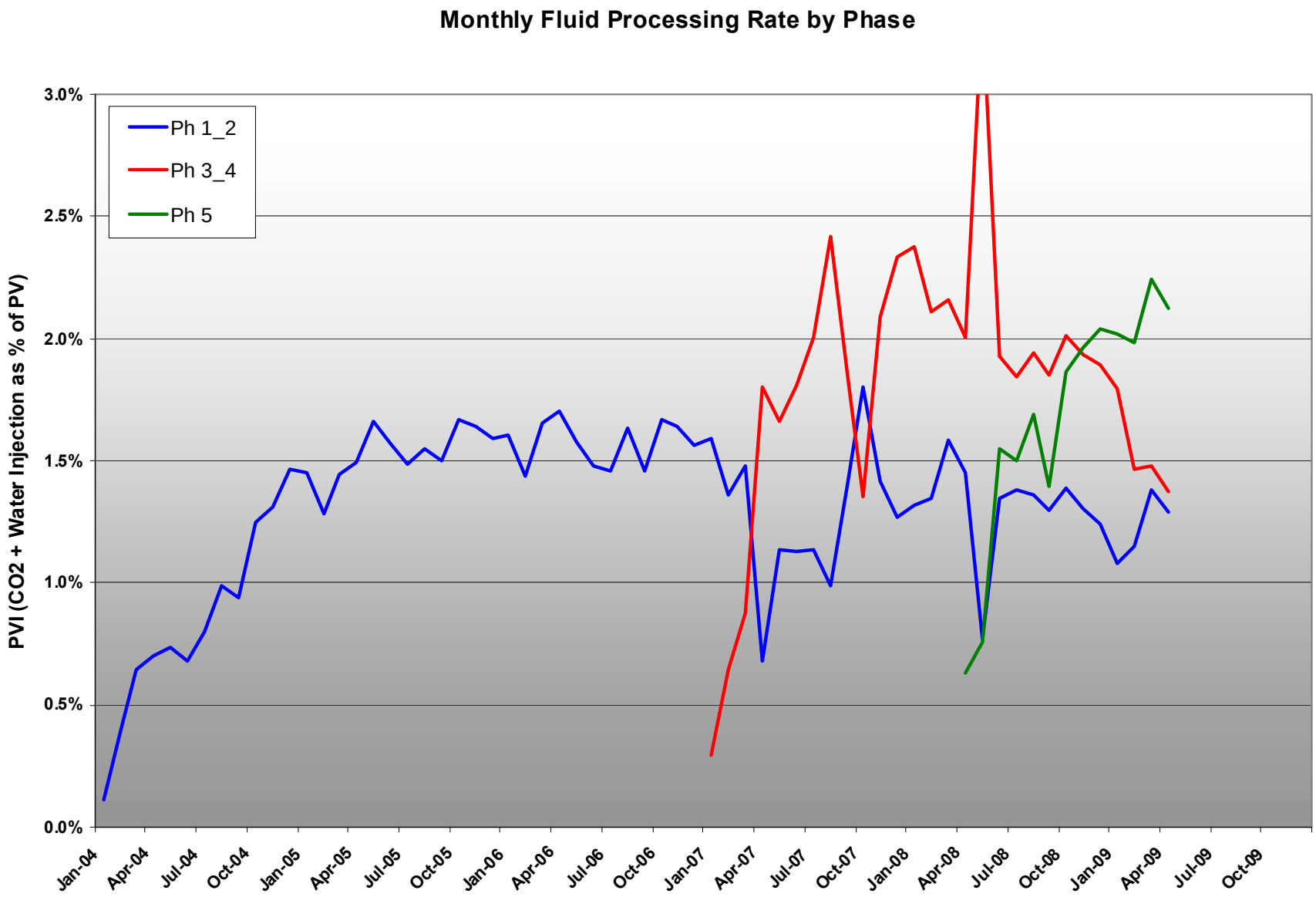
Datum BHP- Sept08

Datum BHP- Jan09

Reservoir Management Tools

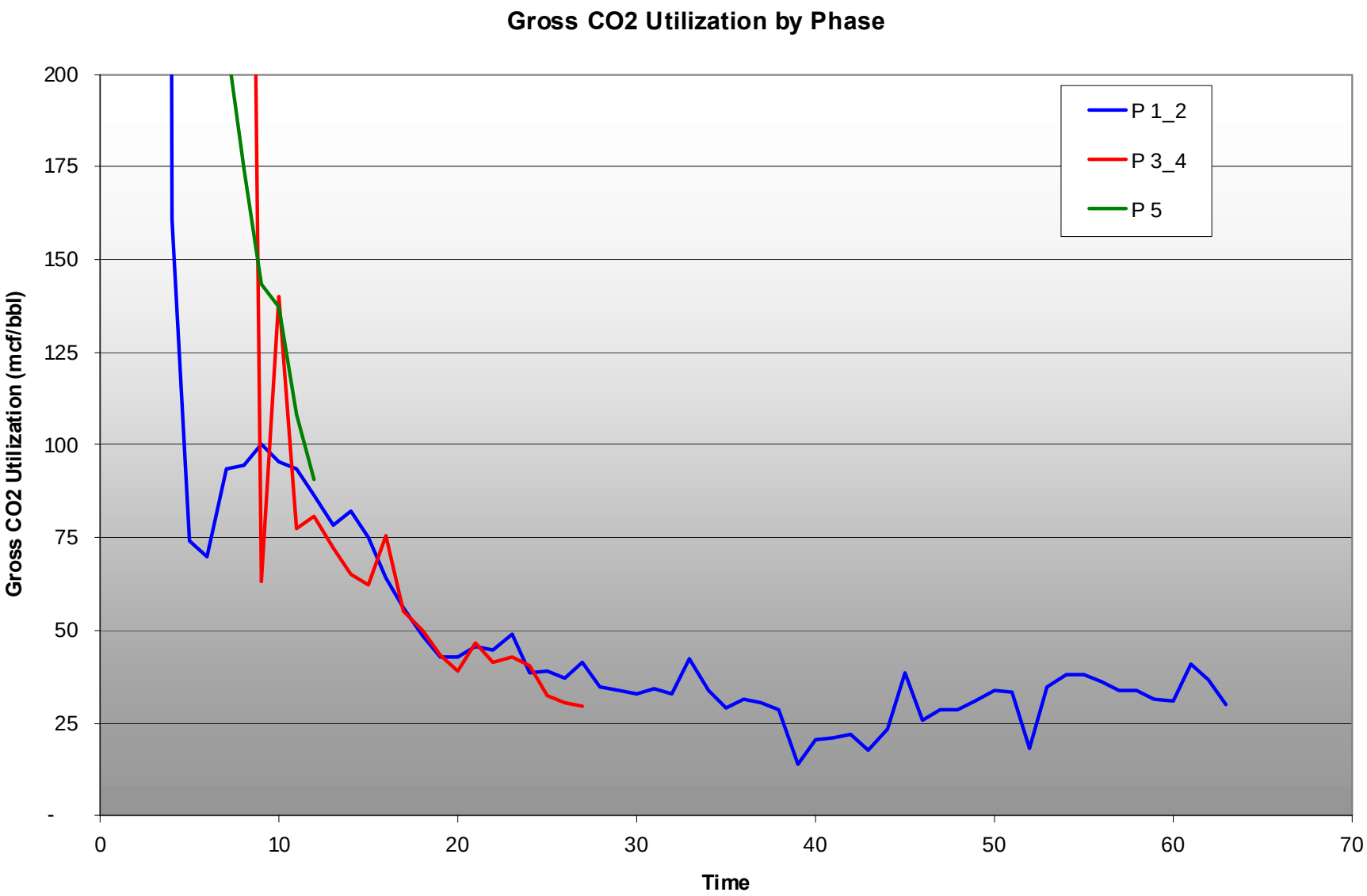


Reservoir Management Tools



Data is calculated from monthly volumes through March 2009 and daily volumes used to calculate April 2009's volume.

Reservoir Management Tools



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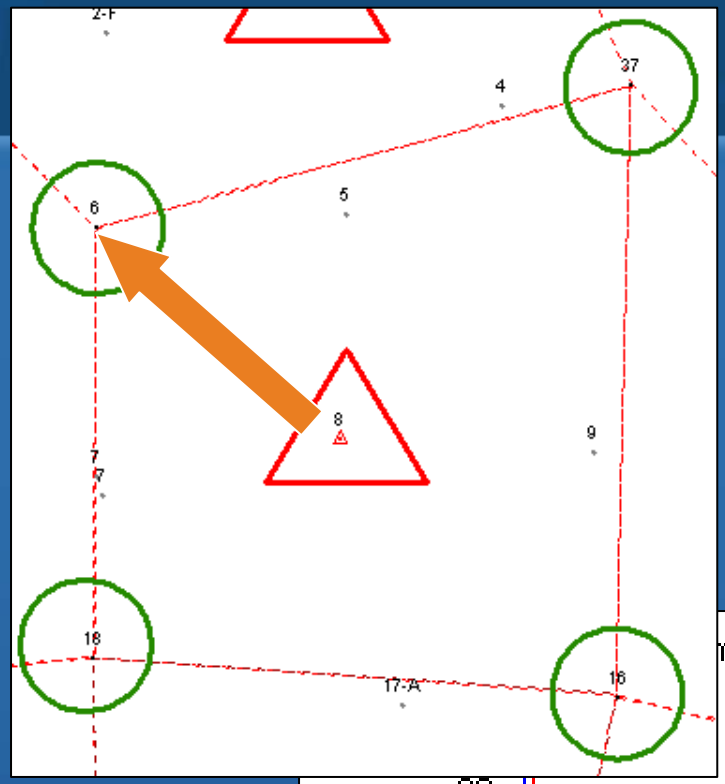
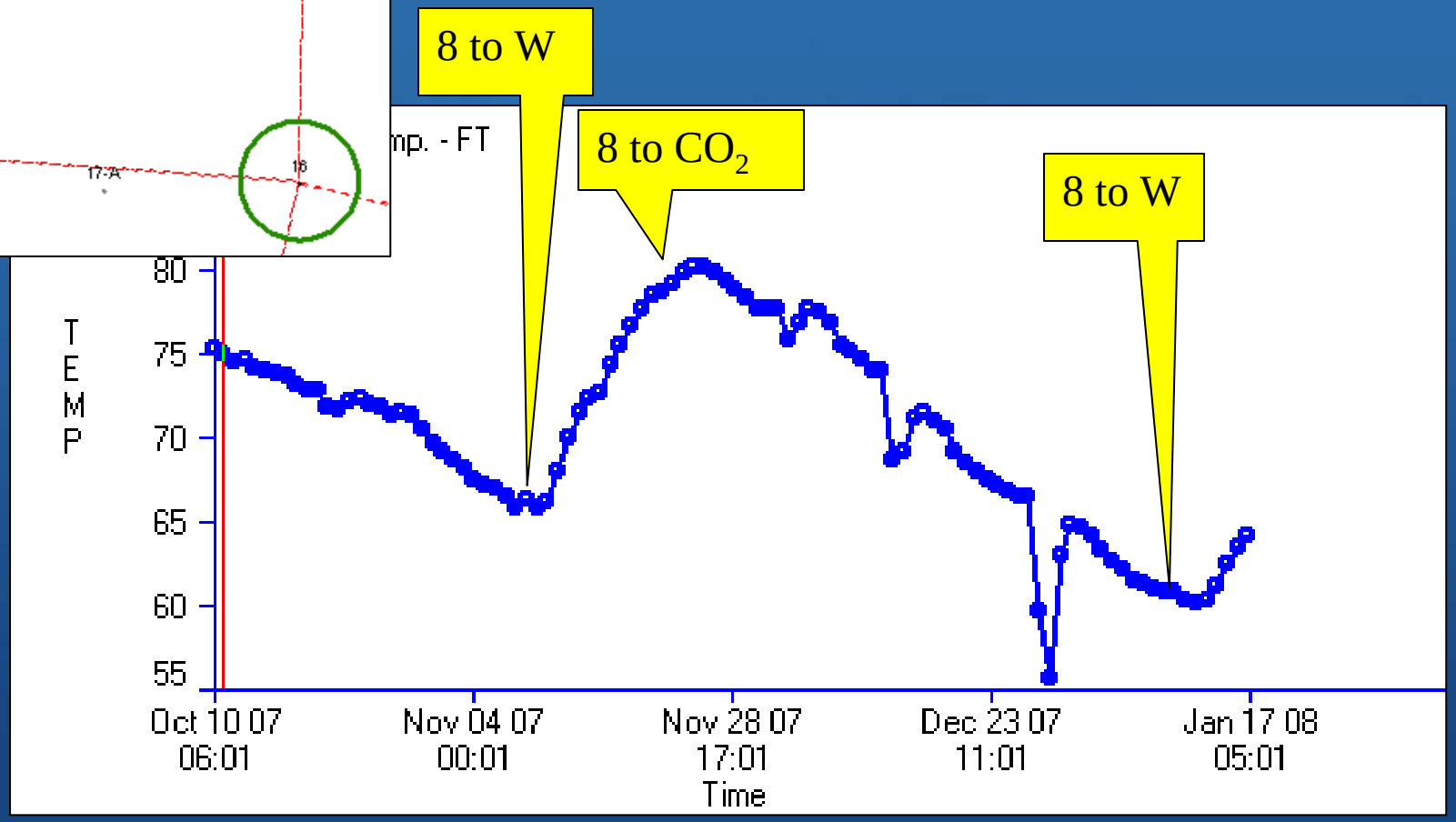
Temperature response at producer showing preferred fluid paths



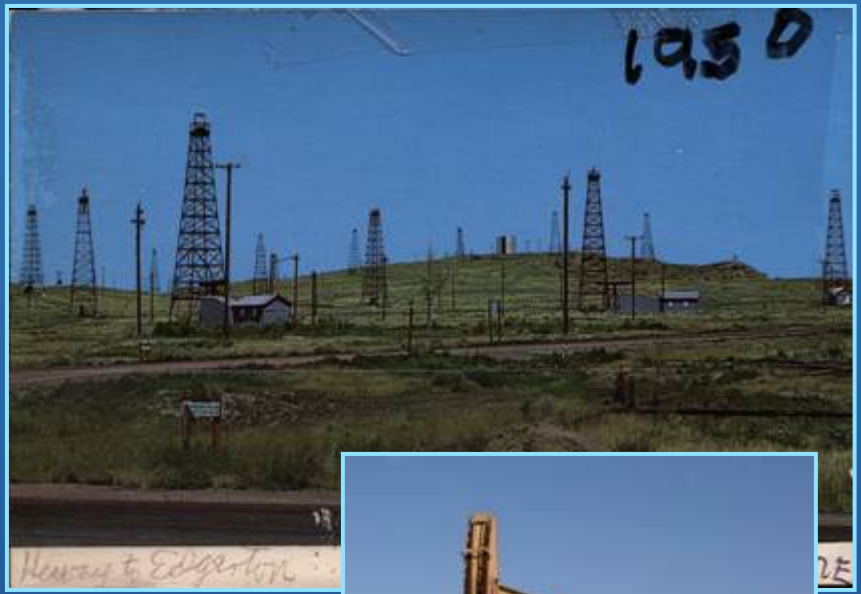


Further Understanding

- **3D seismic acquired in 2005**
- **4D seismic monitoring in Phase 5, baseline and 4 incremental time sequence snapshots collected**
- **WC2 core in Phase 5**
  - Standard P&P
  - XRD/SEM: mineralogy & clay content
  - Thin sections: grain type/size. Cement, pore space, sorting…
  - Advanced SCAL: relative perms, saturations, capillary pressure, pore size distribution
- **Refining Geologic Model (Petrel)**
- **Reservoir Simulation (Nexus)**

Questions

The past…



Today