North Dagger Draw Upper Penn Unit

Economics and Testing

Brief Economics

- 1. With injection, unit lost \$400,000 per month in 2006
- 2. Average operating costs are \$6,000 per well per month
- 3. Shut-in wells (22) would cost \$132,000 per month to pump
- 4. Current injection wells (5) would cost \$30,000 per month to pump
- 5. Marginal wells (60 more) would cost \$360,000 per month to pump
- 6. Estimate loss of \$300,000 or more per month to hold these wells
- 7. Ignore capital costs and additional wells becoming non-economic
- 8. Cost to hold unit together is about \$10 million for 36 months

Testing Plan

- 1. Measure accessible oil saturation at two wells
 - Wells #61 and #135
 - Inject partitioning ester in well
 - Soak and partition

Produce back and analyze produced fluid for ester and alcohol Cost = \$70,000 per well

2. Measure interference around two injectors

Inject into #53, measure pressure downhole in #36 and #52 Inject into #101, measure pressure downhole in #84 and #102 Inject for two weeks at each injector Cost = \$30,000 per test

- 3. Total cost = \$200,000; Time = four to six months
- 4. Low oil saturation could kill entire project
- 5. Try 5-spot first if East-West permeability about equal to North-South permeability. Capital cost = \$1.2 million; time = 15 months
- 6. Try line-drive first if East-West permeability much greater than North-South permeability. Capital cost = \$1.5 million; time = 15 months

BEFORE THE OIL CONSERVATION DIVISION Santa Fe, New Mexico Case No. <u>13893</u> Exhibit No. 12 Submitted by: <u>YATES PETROLEUM CORPORATION</u> Hearing Date: <u>March 29, 2007</u>