

South Chavlea State Exploratory Unit Geologic Testimony

The proposed South Chavlea State Exploratory Unit is located in sections 24 and 25 of 12S-31E, Chaves Co., New Mexico and Sections 19 and 30 of 12S-32E, Lea Co, New Mexico. It is comprised of 2,249.40 acres. Chesapeake has leased 1,649.40 acres within the proposed unit and owns 73% of the proposed unit. Yates has leased 400 acres within the proposed unit and owns 18% of the proposed unit. Remaining leasehold is held by 3 different owners who control 200 acres collectively and 9% of the proposed unit.

Chesapeake wishes to unitize all formations from the surface to the base of the Mississippian. The primary objective is the Morrow formation, though all wells would be drilled to the Mississippian in order to fully test the Morrow. Chesapeake wishes to develop this area under a unit plan because the wells are expensive and the risk is high. Exhibit A which is the Lower Morrow Gross Sand Isopach, illustrates the outline of the proposed unit and producing wells from the Morrow formation as designated by a filled orange circle. Wells shown on the map with a dry hole or gas or oil producing well symbols are wells drilled deep enough to test the Morrow formation. Several potential locations are shown as open circles.

There is one well within the proposed unit which tested gas from the Morrow, but proved to be uneconomic. This well, the EP Operating State 24#1 located 660' FNL and 1980' FWL of 24-12S-31E tested water in the Lower Morrow sand with a show of oil. It was completed in the Middle Morrow but was plugged back after producing 35 MMcfg.

There are 5 additional wells drilled within 1 mile of the proposed state unit. Only one well, the Ensearch State 13 # 1 located 1980' FSL and 660' FWL of 13-12S-31E, has made economic quantities of gas from the Morrow Formation. This well was completed in 1984 in the Lower Morrow Sand and has produced 5.4 Bcfg. The Isopach of the Lower Morrow Sand on exhibit A illustrates the sand is present through the center of the exploratory unit. In 1965, the Graridge Livermore State G-9 located 1787' FWL and 467' FNL of 31-12S-32E production tested the Lower Morrow sand initially at 1 MMcfg/d and 27 bo/d, however over the next 30 days of production testing rates dropped to 300 Mcfg/d and BHP dropped from 4239# to 2800#. The well was thereafter plugged back.

Exhibit B is the Northwest to Southeast stratigraphic cross section of the Morrow formation through the proposed Unit. The cross section illustrates the excellent Lower Morrow reservoirs present in the 5.4 Bcfg producer (Ensearch State 13 #1) in section 13 northwest of the proposed unit and the EP Operating State 24 #1 well in section 24 just within the confines of the proposed unit in which this sand is water bearing. The Graridge Well in section 31 has poor quality reservoir sand as illustrated on this cross section. Chesapeake has acquired a 3D seismic survey, which will help locate the wells within the unit in favorable structural locations to avoid water bearing Lower Morrow reservoirs. However the seismic data is not of the quality necessary to predicting sand quality or even the presence of sand in the Morrow formation. The prospect remains risky even with the use of 3D seismic. The initial location in 19 if successful could prove up locations in sections 24 and 25 of 12S-31E and section 30 of 12S-32E. These potential locations are shown on exhibit A. Further development drilling in for the Lower Morrow would depend on the success of these wells.

The cross section also shows sub economic production from Middle and Upper Morrow sands in the EP Operating State 24 #1 well in section 24-12S-31E (35 MMcfg) and just north of the proposed Unit in the Ensearch State 14 #1 well in section 14-12S-31E (77MMcfg). These Morrow sands appear to be prospective in the north half of the proposed state exploratory unit.

Geologic evidence indicates that considering the risky nature of the Morrow formation in this area, that a state exploratory unit would be the prudent way and fairest way to develop the Morrow formation for all parties having leasehold within the proposed unit.