STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF YATES PETROLEUM CORPORATION FOR APPROVAL OF A UNIT AGREEMENT, CHAVES COUNTY, NEW MEXICO. **CASE NO. 13297**

AFFIDAVIT OF TIM MILLER

STATE OF NEW MEXICO)
) ss.
COUNTY OF EDDY)

Tim Miller, being first duly sworn on oath, states as follows:

1. My name is Tim Miller. I reside in Carlsbad, New Mexico. I am the petroleum geologist employed by Yates Petroleum Corporation ("Yates") who is responsible for the formation of the proposed Barracuda State Exploratory Unit ("the Unit") comprised of 3200 acres, more or less, of State of New Mexico lands situated in Chaves County, New Mexico. The horizontal limits of said Unit Area are described as follows:

Township 10 South, Range 27 East, N.M.P.M.

Sections 4 and 5:	All
Sections 8 and 9:	All
Section 17:	All

2. Yates, the designated Unit Operator in the Barracuda State Exploratory Unit Agreement, proposes the formation of the Unit to test all formations from the surface to the base of the Siluro-Devonian formation.

3. Attached to this Affidavit as **Exhibit A** is a copy of the Unit Agreement for the proposed Barracuda State Exploratory Unit. This agreement is on the New Mexico State Land Office State Unit Agreement Form.

4. Attached as **Exhibit B** is the plat to the Unit Agreement that shows the boundaries of the Barracuda State Exploratory Unit, the state leases in the unit area and the working interest ownership in each.

5. **Exhibit C** to this affidavit is a copy of Schedule B to the Unit Agreement for the Barracuda State Exploratory Unit that identifies the working interest ownership in the unit area. One hundred percent of the working interest in the Unit Area is voluntarily committed to the

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
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Submitted by:
YATES PETROLEUM CORPORATION
Hearing Date: July 22, 2004

unit.

6. The schedule under **Exhibit C** also identifies the royalty and overriding royalty interest in the Unit Area. All base royalty interest is owned by the State of New Mexico. **Exhibit D** to this Affidavit is a letter from the New Mexico Commissioner of Public Lands giving preliminary approval of the State Land Office to the proposed Barracuda State Exploratory Unit. All overriding royalty interest is also committed to the Barracuda State Exploratory Unit.

7. The initial unit well will be the Barracuda State Unit Well No. 1 that will be drilled at a standard gas well location 1650 feet from the North line and 880 feet from the East line of Section 5, Township 10 South, Range 27 East, NMPM, Chaves County, New Mexico to test all formations from the surface to the Siluro-Devonian formation. The primary objective in the unit is the Siluro-Devonian dolomite with a secondary objective in the Wolfcamp A Zone. The Siluro-Devonian dolomite is productive in three wells that are in close proximity to the proposed location for the initial unit well. These wells are the Bluegill State Well No. 1 (32-9S-27E, 2310 FNL & 1980 FWL), Sunfish State Unit Well No. 1(32-9S-27E, 1980 FS&EL), and the Starkissed AWS State Well No. 2 (3-10S-27E, 1980 FNL & 990 FWL). The Bluegill well has produced 477 MMCF and 2,272 BO from December 2002 through February 2004. The Sunfish well has produced 1.6 BCF and 10.378 BO from May 2001 through February 2004. the Starkissed well has produced 5 MMCF and 14,600 BO and 6,296 BW from September 2003 through May 2004. The Diablo State Well No. 1 (32-9S-27 E, 660 FS&EL) tested in the upper part of the Siluro-Devonian dolomite with gas to the surface in 45 minutes with a two-foot flare and recovered 652 feet of slightly gas cut drilling mud.

8. The Seismic Time Structure Map (**Exhibit E**) shows the proposed location for the initial well is up-dip and on the crest of a structure from the two producing Siluro-Devonian wells in Section 32, Township 9 South, Range 27 East (the Bluegill and the Sunfish wells) and to be on the up thrown block from the Moalbo State Com AZC Well No. 1 located in Section 5, of Township 10 South, Range 27 East, which was a dry hole. This Seismic Time Structure Map also shows the proposed location to be bounded by two faults, one to the west and the other to the southeast with the proposed location on the up thrown side.

9. Cross Section A-A' **(Exhibit F)** shows the proposed location to be on the up thrown side of the northwest to southeast trending fault with the Moalbo well in the northwest quarter of Section 5m Township 10 South, Range 27 East to be in a down thrown block. The Moalbo well was wet in the dolomite. Cross Section B-B' **(Exhibit G)** shows the location of the initial unit well to be up-dip from the three wells in Section 32, Township 9 South, Range 27 East, and bounded on the south by the southwest to northeast trending fault.

10. The secondary objective in this unit is the Wolfcamp A Zone. The Gross Isopach Map of the Wolfcamp A Zone **(Exhibit H)** and the Net Porosity Isopach map of this zone **(Exhibit I)** show this zone to be present in several wells in the area. The proposed location for the initial unit well should encounter between 50 and 55 gross feet of limestone with 25 to 30 feet of net porosity greater than or equal to 4%. This zone has not produced in this area. However, in several wells (The Bluegill, Sunfish, Starkissed and Diablo Wells) the mud logs had

gas kicks of 100 units with the electric logs showing the zone to be productive. This Wolfcamp Zone is highlighted in pink on the two Cross Sections (Exhibits F and G). Being on the crest of the structure enhances Wolfcamp A Zone production potential but, by Wolfcamp time, the geologic faulting is not present.

10. **Exhibit J** is a summary of the geological data supporting the formation of the Dice State Exploratory Unit.

11. The unit covers an area that can be reasonably developed under a unit plan.

12. If the initial unit well is successful, additional wells will be drilled in the Unit Area. Accordingly, approval of the unit agreement will result in the efficient recovery of hydrocarbons.

14. Approval of the Barracuda State Exploratory Unit and the development of the Unit Area pursuant to a unit plan is in the best interest of conservation, the prevention of waste and the protection of correlative rights.

FURTHER AFFIANT SAYETH NOT.

H. Tim Miller
Geologist

SUBSCRIBED AND SWORN before me on this 19th day of July, 2004.

Notary Public

My Commission Expires:
10/9/04