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

APPLICATION OF YATES PETROLEUM CORPORATION FOR APPROVAL OF A UNIT AGREEMENT, CHAVES COUNTY, NEW MEXICO.

CASE NO. 13559

AFFIDAVIT OF H. TIM MILLER

STATE OF NEW MEXICO)) ss. COUNTY OF EDDY

S.

I, H. 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 Mortar State Exploratory Unit ("the Unit") comprised of 1600 acres, more or less, of State lands situated in Chaves County, New Mexico. The horizontal limits of said Unit Area are described as follows:

Township 8 South, Range 27 East, N.M.P.M.

Section 23:	S 2
Section 25:	All
Section 26:	A 11

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

3. The initial unit well will be drilled at a standard well location 1980 feet from the North line and 1980 feet from the West line of Section 32, Township 11 South, Range 27 East, NMPM, Chaves County, New Mexico with a proposed total depth of 6,670 feet.

4. <u>Attachment A</u> to this Affidavit is a copy of the Unit Agreement for the proposed Mortar State Exploratory Unit. This agreement is on the New Mexico State Land Office State/Fee Unit Agreement form.

5. <u>Attachment B</u> is the plat to the Unit Agreement that shows the boundaries of the Mortar State Exploratory Unit.

BEFORE THE OIL CONSERVATION DIVISION Santa Fe, New Mexico Case No. <u>13559</u> Exhibit No. 1 Submitted by: <u>Yates Petroleum Corporation</u> Hearing Date: <u>September 22, 2005</u> 6. <u>Attachment C</u> to this Affidavit is a copy of Schedule B to the Unit Agreement for the Mortar State Exploratory Unit that identifies the working interest ownership in the Unit Area. 100% of the working interest in the Unit Area is committed to the Unit.

1

7. The schedule under <u>Attachment C</u> also identifies the royalty interest in the Unit Area. 100% of the royalty interest is owned by the State of New Mexico and under <u>Attachment D</u> 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 Mortar State Exploratory Unit. There are no overriding royalty interests.

8. All of Yates' interest in the Unit Area has been committed to the Unit.

9. <u>Attachment E</u> is a Siluro-Devonian Time Map which is a seismic structure map on top of the Siluro-Devonian. Each seismic contour interval on the map represents 5 milliseconds which is equal to about 50 feet. A major contributor to better Strawn sand production is that the sand be deposited over a structural high. This may cause some fracturing in the sand which could enhance porosity and permeability. Also being on the flank or near the crest of a structure could possible keep a productive sand above the water zone. The map shows the best Strawn sand production is deposited over or on the flank of a structural high as shown by the Carl Schellinger Campbell wells in the southwest quarter of the map and Yates' Hanlad AKZ State #1 Well (Section 13). Yates' proposed initial well (Mortar State Unit #1) is located over a structural high as shown on the map which is the top of the Siluro-Devonian.

10. <u>Attachment F</u> is a Cumulative Production Map. The Hanlad well has produced 521 MMCF from Strawn sands and the Campbell wells have produced from 500 MMCF to 1 BCF from Strawn sands. To the north and west of the proposed location, the Strawn sands have produced from 3 MMCF to 521 MMCF as shown on the map. Harper Oil's Pioneer well (in Section 26) produced 3.8 MMCF. BHP's Puffer State #1 (in Section 24) produced 4.9 BCF, 10,399 barrels of oil and 99,463 barrels of water from the Siluro-Devonian. Yates' Hanlad well (in Section 13) produced through January 2005 491 MMCF, 1,177 barrels of oil and 34,950 barrels of water.

11. Attachment G is a Lower Strawn Sand Gross Isopach Map and shows the proposed well location is projected to encounter 25 feet or better of Lower Strawn Sand. Even though 20 feet of the Lower Strawn Sand was encountered in Harper Oil's Pioneer 26 State #1 Well to the west of Yates' proposed location, the sand was deposited in a low which could have resulted in poorer permeability. The Lower Strawn Sand that occurs in the Campbell wells, Hanson Operating Amoco State #1 (in Section 23) and the Hanlad well was deposited on the crest or flank of a structure.

12. Attachment H is Structural Cross Section A-A' which is from the north to the southwest and shows the Lower Strawn Sand in yellow. The Rault Petroleum well (in Section 23) has 12 feet thick of Lower Strawn Sand near the crest of a structure that

has a fault on the east side. This well produced 98 MMCF from several Strawn sands. This well is separated by a northeast to southwest trending fault over to BHP's Puffer A State #1 which was re-entered and completed by Yates in several Strawn sands and a very think Lower Strawn Sand. This well has produced 16 MMCF from the abovementioned Strawn sands. The proposed well location is situated on a small structure. which will enhance the Lower Strawn Sand. This location is projected to have 25 feet or more of Lower Strawn Sand with the possibility of also having upper Strawn sands as shown in yellow on the cross-section. The cross-section passes through Harper Oil's Pioneer Well (in Section 26) which has 20 feet of Lower Strawn Sand but is structurally lower. This may explain why it only produced 3 MMCF from this sand. The permeability could be partially plugged even though porosity averages 12-13%. The cross-section ends at the Campbell Station Unit #1 Well (in Section 34). This well is on the flank of a structure and has produced 1 BCF from the Lower Strawn Sand which is 22 feet thick further, reinforcing the idea of the productive sand being deposited on the crest or the flank of a structure.

The unit covers an area that can be reasonably developed under a unit 13. plan.

14. The main objective to this Unit is the Lower Strawn Sands. Secondary objectives are possible Abo sands, the Wolfcamp and Cisco limes, and the Siluro-Devonian.

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

Approval of the Mortar State Exploratory Unit and the development of the 16. 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 Deologist

SUBSCRIBED AND SWORN before me on this $\frac{10^{+1}}{10^{-1}}$ day of September, 2005.

Dina M. Roma Notary Public My Commission expires: 1/25/07