

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

**APPLICATION OF CHEVRON U.S.A. INC.
FOR APPROVAL OF NON-STANDARD OIL
SPACING UNITS AND COMMINGLING,
OR ALTERNATIVELY FOR THE CONTRACTION
OF THE WC-025 G-06 S263319P, BONE SPRING
POOL AND THE SANDERS TANK; UPPER
WOLFCAMP POOL, AND FOR THE CREATION
OF NEW BONE SPRING AND UPPER WOLFCAMP
POOLS, SPECIAL POOL RULES, AND
COMMINGLING IN SECTION 29 AND
IRREGULAR SECTION 32, TOWNSHIP 26 SOUTH,
RANGE 33 EAST, N.M.P.M., LEA COUNTY,
NEW MEXICO.**

CASE NO. 16380

AFFIDAVIT OF CHRISTINE DEFRIEND

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

I, Christine DeFriend, being first duly sworn, upon oath, states the following based upon my own personal knowledge:

1. I am over eighteen (18) years of age and am otherwise competent to make this sworn statement.
2. I am employed as a Reservoir Engineer in the Permian Basin in Southeastern New Mexico for Chevron U.S.A. Inc. ("Chevron"), and I testified in the above-captioned cases on September 6, 2018.
3. In my position as a Reservoir Engineer, I review production data from wells and related well information that Chevron keeps as a matter of course in its company business records.

4. Attached hereto as **Exhibit 1** are additional documents requested during the September 6, 2018 hearing by the Hearing Examiners. These documents contain: updated structure maps for the Bone Spring and Wolfcamp formations, updated isopach thickness maps for the Bone Spring and Wolfcamp formations, updated cross sections which show the targeted zones in each formation, a type log from the Salado SWD 13 well for the Bone Spring formation, a type log from the Salado SWD 13 well for the Wolfcamp formation, diagrams and plats for the defining wells in the Bone Spring and Wolfcamp formations in the Needmore Tank pools that Chevron seeks to establish, and discovery well logs for the Needmore Tank pools.

5. Chevron's counsel contacted Paul Kautz at the Division's District Office and confirmed the discovery wells with Mr. Kautz prior to the execution of this affidavit.

6. I have also reviewed reservoir data for the Bone Spring and Upper Wolfcamp formations in Sections 29 and 32, Township 26 South, Range 33 East, N.M.P.M., Lea County, New Mexico.

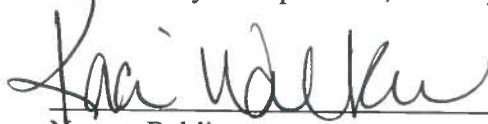
7. Fractures (natural or man-made) provide the permeability conducive enough for fluid flow, and it's the stimulated rock volume (SRV) created by the hydraulic fracturing process that contributes to production.

8. In the Bone Spring and Upper Wolfcamp formations underlying Sections 29 and 32, the matrix permeability is 1-1000 nD, which is not conducive for fluid flow by itself without the presence of a fracture network. Fracture permeability is a range in the thousands of mD.

9. The initial Gas Oil Ratio (GOR) for wells drilled in the Bone Spring and Upper Wolfcamp formations in Sections 29 and 32 ranges between 2500 – 3500 scf/bbl, and production is considered volatile oil.


Christine DeFriend

SUBSCRIBED AND SWORN to before me this 19th day of September, 2018 by Christine DeFriend.



Notary Public

My commission expires: 12/23/21

