

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

2016 DEC 21 P 2:10
CASE NO. 15487

**APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION
THROUGH THE SUPERVISOR OF DISTRICT II FOR AN EMERGENCY ORDER
SUSPENDING CERTAIN APPROVED APPLICATIONS FOR PERMITS TO DRILL,
AND FOR ADOPTION OF A SPECIAL RULE FOR DRILLING IN CERTAIN AREAS
FOR THE PROTECTION OF FRESH WATER, CHAVES AND EDDY COUNTIES,
NEW MEXICO**

STATEMENT OF REASONS

Pursuant to the Commission's request, the Supervisor of Oil Conservation Division (OCD) District II ("Applicant") submits the following Statement of Reasons in support of proposed new Rule 19.15.39.11 NMAC.

1. Subparagraph C(1) concerning "conductor pipe" should be adopted because no evidence was presented contradicting the testimony of Mr. Kautz on this point, and Respondents proposed no changes to this subparagraph.

2. Subparagraph C(2), requiring setting and cementing of a water protection casing string below the shallow aquifer where both aquifers are present, should be adopted to prevent the wellbore from becoming a conduit for movement of water between the aquifers. Mr. Kautz testified that water from the Artesian aquifer could flow upward in the wellbore during the drilling process. Such upward flow of the artesian waters into the lower quality shallow aquifer would reduce the availability of better quality artesian water. Furthermore, the testimony was that there is no definitive test to establish the integrity of the cement seal of the surface casing. Indeed, the operators' witnesses testified that even a cement bond log would not be definitive in this regard,

and did not suggest any viable alternative. There was also testimony that no monitoring was required or usually practiced to determine if wells during the drilling and completion process are allowing communication between these two aquifers, thus indicating that operators do not really know if such cross contamination is or is not occurring. Accordingly, the protection string for the shallow aquifer is needed as an additional line of defense, in case a sufficient cement seal is not obtained when only a single protection string is utilized.

3 **Subparagraph C(2)** as proposed should be amended to require that the surface protection casing string set below the shallow aquifer to be set “at least 50 feet below the base of the shallow aquifer, such that the surface casing is landed in the first competent formation, and above the first show of hydrocarbons encountered on the mud log, and cemented to the surface.”

The addition of the inserted language is required to take account of the probability, attested by Lime Rock’s witness, of encountering hydrocarbons in the intervening strata between the two aquifers. If there is a difficulty in finding a competent formation in which to set casing that will satisfy both requirements, the operator can propose a solution under the “Exceptions” provision of Paragraph C. If the Commission decides to revise Subparagraph C(2) as proposed by counsel for COG, Fasken and OXY, so that it will require only one surface protection string that will be set below the Artesian aquifer, it should nevertheless require two surface protection strings where hydrocarbon shows are encountered in the intervening strata between the shallow and the Artesian aquifer to prevent communication between such shallow hydrocarbon zones and the Artesian aquifer. If the waters in the Artesian aquifer are locally of such low quality as to not constitute “fresh water” as defined in Rule 19.15.2.7.F(3) NMAC, that situation could be handled under the “Exceptions” provision of Paragraph D.

4. **Subparagraph C(3) requiring a water protection string in the San Andres not more than 50 feet above the first oil show** should be adopted to protect the Artesian aquifer, but could be subject to an exception if the deeper aquifer in particular areas is shown to be not of protectible quality, thus mitigating the additional costs the rule would impose on operators drilling in such areas.

5 **Subparagraph C(4) requiring cement bond logs** should be changed to (1) require a cement bond log only for the deeper water protection string, and (2) eliminate the requirement for division approval of the log prior to continued operations. This would provide some assurance of a quality cement job on at least one surface protection string as an assurance for which the operators' witnesses suggested no adequate alternative.

6. Consistent with adoption of the requirement for two water protection casing strings, which Applicant urges above, **Paragraph D concerning exceptions** should be adopted substantially as the Applicant proposed. However, the Commission should consider deleting the requirement that a single water protection casing string authorized by exception must be set "in the San Andres formation" and substituting language requiring that such single string be set at a depth sufficient under the circumstances to protect all fresh water zones that may be present, thus allowing flexibility in areas where the deeper aquifer is not present.

7. Consistent with adoption of the requirement for two water protection casing strings, which Applicant urges above, **Paragraph E concerning wells that penetrate the Artesian aquifer only**, should be adopted substantially as the Applicant proposed.

8. **Paragraphs G and H**, are not controverted and should be adopted as proposed.

Respectfully submitted

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Certificate of Service

I hereby certify that the above pleading was served on the following parties by electronic mail on December 21, 2016.

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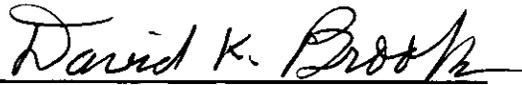
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A handwritten signature in cursive script that reads "David K. Brooks". The signature is written in black ink and is positioned above a horizontal line.

David K. Brooks