



WM DOCKET CONTROL CENTER

United States Department of the Interior

BUREAU OF MINES

P. O. BOX 25086

'86 NOV 12 11:01 AM RECEIVED NOV 20, DENVER FEDERAL CENTER DENVER, COLORADO 80225

Minerals Availability Field Office

November 5, 1986

Memorandum

To: Charlotte Abrams, Project Officer, Nuclear Regulatory Commission
Through: Chief, Minerals Availability Field Office
From: NRC Project Coordinator, Minerals Availability Field Office
Subject: Review of BMI/ONWI-589 & 590 for NRC (Task Order 002)

The following is a review of the phone conversation held with you on 11/05/86. Three individuals reviewed the subject studies, D. Bleiwas (14 hrs) and quality assurance by A. Sabin (2 hrs) and Dr. T. Anstett (2 hrs) (Dr. Anstett is a specialist in subjective probability methods) for a total technical work effort of 18 hours. Mr. R. Read, Program Manager, also reviewed our comments. Based on the evidence cited in the study, I basically agree with the Author's conclusions, but I do have a few questions.

As a general comment, the Author continually confuses the terms reserves and resources, despite the fact that he defines the terms and provides diagrams. For example, please refer to figure 6-5 (p. 37). These are reserves not resources, as labeled. Also we have no idea how the Author incorporated the market price into his calculations nor can the reviewers determine the recovery factors used from an in-situ reserve. It would be helpful if an appendix was supplied which showed the responses to his subjective probability approach. Did the author actually utilize specialists in his study? Who were they and what were their responses? Perhaps I missed this, but I do not recall seeing any clear statement addressing this. Specific questions follow.

BMI/ONWI-589

- 1. Page 10, third paragraph.- A bit semantic, but, if a well is "abandoned" how can "ultimate" production be estimated?

WM-225
WM Record File
D1018
BOM

WM Project: 10, 11, 16
Docket No.
PDR
LPDR B, N, S

Distribution:

Abrams

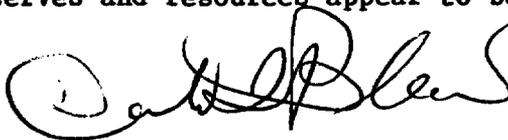
(Return to WM, 623-SS)

8611200238 861105
PDR WMRES EUSDOI MI
D-1018 PDR

3425

BMI/ONWI-590

1. Page 25 - Study is based on \$26-\$28 per barrel, as opposed to current prices (\$15). Perhaps additional price ranges (\$20-25, \$30-35, \$36-40) should have been selected for analyses in this study. If the probability of economic resources was based on a higher price, then the resource estimates would be much larger. Should price be a criteria? Clarify whether they are determining a reserve or a resource based on use of a market price as a method for estimation. In other words, I think they are determining reserves not resources, since they use the "current" price as their determination of a "resource". Statement on page 25 clearly states the author selected the market price. This approach could invalidate the study based on the possibility of an explorationist speculating on the presence of oil. Did the NRC actually request that the study be performed at the market price (\$26-\$28)?
2. Page 35 - Text states that figure 6-5 summarizes production, reserves, and future resources. It does not.
3. At what confidence level is the Palo Duro Basin estimate in Table 6-5 developed from?
4. Conclusions on page 41 - paragraph 5 reads. "I am 95% confident that undiscovered economic resources of at least 51 MBO and 60 BCF of gas await future discovery in the Basin. Stated incorrectly, should be stated as "are potentially available" or a similar statement.
5. Page 33, paragraph 6.3.5 - Should use of term "reserve" be resource?
6. Page 41. Again, reserves and resources appear to be used interchangeably.



Donald I. Bleiwas