



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

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FAX TRANSMITTAL SHEET AND INVOICE

DATE: 5-19-97

TO: DAVID CATANACH

FROM: ERNIE BUSCH

COMMENTS: THIS RECOMMENDED ALLOCATION SHOULD WORK
IF THE ACTUAL IS NOT LESS THAN THE CALCULATED.
THIS LEASE IS EXPERIENCING THE 31% THE BLM APPROVED
THE APD, BUT THEY WANT DRILL UNTIL THEY GET A DMC
NUMBER OF PAGES INCLUDING COVER: 2 CHARGES: 0

PLEASE REMIT TO LETTERHEAD ADDRESS WHEN THERE IS A CHARGE

Richardson Operating
Bushman Federal #6-1

Allocation Formula

1. Perform well tests on Fruitland Coal formation and on the total well production.

2. Determine the initial production rate from the Pictured Cliffs formation from the actual first months production from the following relation:

$$Q_{pCi} = \text{1st Month Production} * (\text{Total Well Test} - \text{FTC Well Test}) / \text{Total Well Test}.$$

3. Determine Pictured Cliff decline from the following equation:

$$D = (Q_{pCi} - Q_{pCa}) / \text{Estimated Total Pictured Cliffs Reserves}$$

where:

Q_{pCa} = Pictured Cliffs rate at abandonment = 304 MCF/Mo.
Total Pictured Cliffs Reserves = 87,770 MCF which is the average of the five offset wells.

4. Calculate Pictured Cliffs rate at any time from the following:

$$Q_{pC} = Q_{pCi} * e^{(-Dt)} \text{ where } t \text{ is any time in months.}$$

5. The Fruitland Coal production can be calculated from the actual measured production for any month minus Q_{pC} .