

MERRION & BAYLESS

Gallup-Dakota Co-Mingling
Hearing Exhibit #1

County Sandoval

State New Mexico

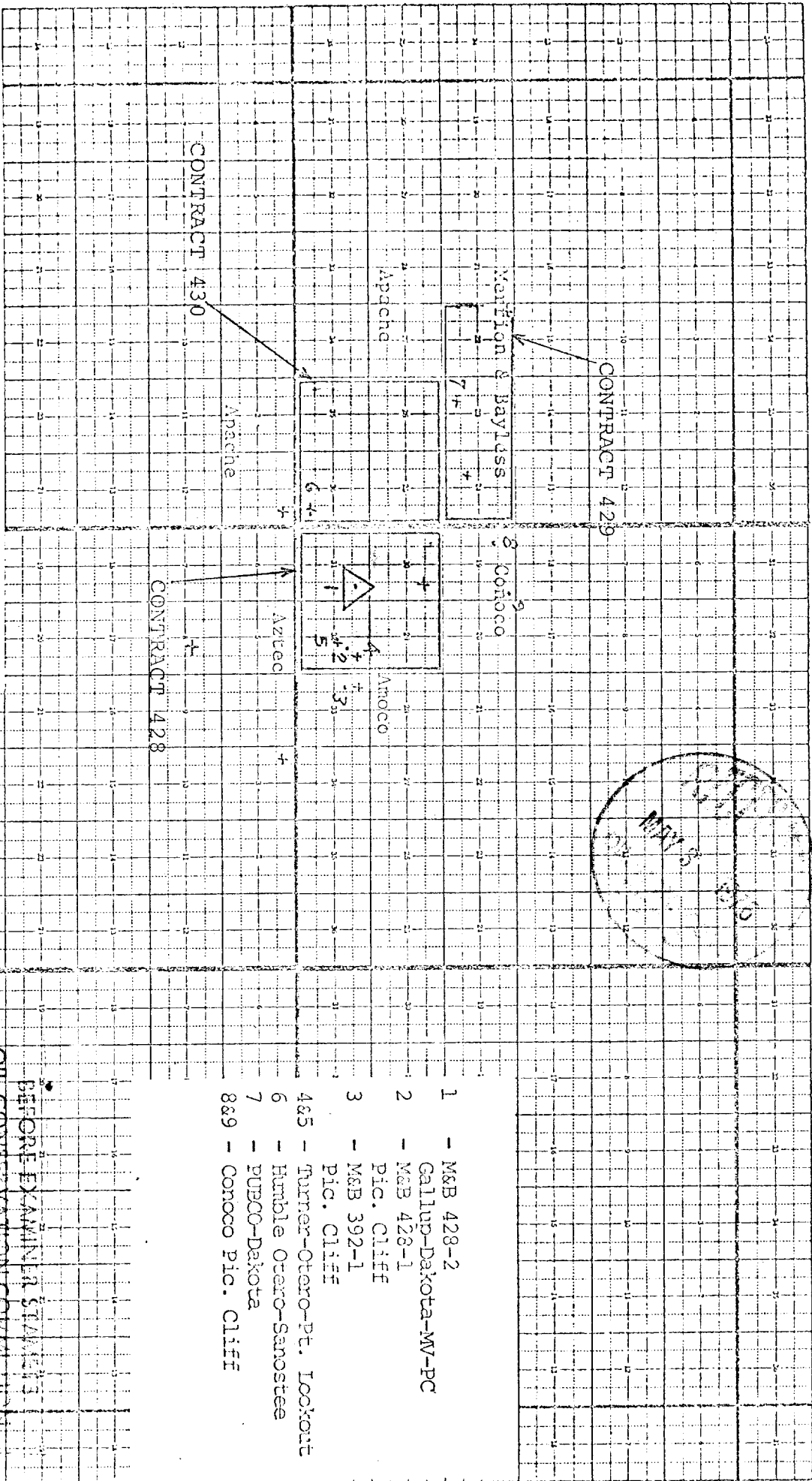
Range 5 West

Range 4 West

Range

Town
23N

Town
22N



- 1 - M&B 428-2
Gallup-Dakota-MW-PC
- 2 - M&B 428-1
Pic. Cliff
- 3 - M&B 392-1
Pic. Cliff
- 4&5 - Turner-Otero-Pt. Lookout
- 6 - Humble Otero-Sandozee
- 7 - PUECO-Dakota
- 8&9 - Conoco Pic. Cliff

Continental Oil Co., Denver, Colorado
Aztec Oil & Gas, Dallas, Texas
Amoco Production Co., Denver, Colorado
Apache Exploration, P.O. Box 2299
Tulsa, Oklahoma

BEFORE EXAMINER & STAFF
OIL CONSERVATION COMMISSION

Case No. 5475

4-28-76

Well felt

Merion & Bayless
Jicarilla #28 #2
A-31-23N-4W

Jicarilla 428-2
790' FNL and 790' FEL
Section 31, T23N, R4W
Sandoval County, New Mexico
Present Status of Well

10 3/4" casing
@ 230' with
125 sax

Bond Log top of
cement = 2096

Pictured Cliffs
2120-2160

Chavez
Macon
2594-2614

2 7/8" casing
@ 2746' with
490 cu. ft.

Bond Log top of
cement = 3330

Stage collar @ 4560'
with 315 cu. ft.

Bond Log top of
cement = 4800

1 1/4" EUE tubing set on Arrow Tension Packer @ 2500'

2 3/8" EUE tubing set at 6350'
1 1/4" pump on 7/8 x 3/4 x 5/8 rods

BEFORE EXAMINER STAMPS
OIL CONSERVATION COMMISSION

Applicants EXHIBIT NO. **2**

CASE NO. **5275**

Submitted by *Mexican*

Hearing Date **4-28-76**

Mancos Perfs.
5162, 5172, 5196-5221

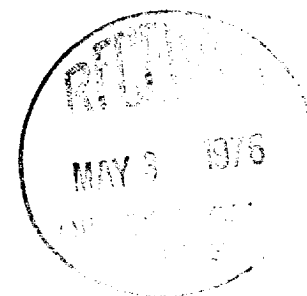
Gallup Perfs.
5313-49, 5394-5458, 5544-46, 5564

Carlisle Perfs.
6044-48, 6252-57

Graneros Perfs.
6339, 6358, 6372-75

PBD - 6631

4 1/2" casing @
6631' with 499 cu. ft.



Jicarilla 428-2
790' FNL and 790' FEL
Section 31, T23N, R4W
Sandoval County, New Mexico
Proposed Status of Well

10 3/4" casing
230' with
125 sax

Cement channel
to be squeezed

Pictured Cliffs
2120-2160

Chacra
2594-2614

2 7/8" casing
2746' with
490 cu. ft.

Bond Log top
of cement 3330

Stage collar @ 4560'
with 315 cu. ft.

Bond Log top
of cement 4800

1" tubing set @ 2500'

2 3/8" EUE tubing set at 6350'
1 1/4" pump on 7/8 x 3/4 x 5/8 rods

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

Applicants EXHIBIT NO. 3

CASE NO. 5675

Submitted by *Merrion*

Hearing Date 4-28-76

Mesaverde Perfs.
4256-60, 4408-16, 4424-28

Mancos Perfs.
5162, 5172, 5196-5221

Gallup Perfs.
5313-49, 5394-5458, 5544-46, 5564

Carlisle Perfs.
6044-48, 6252-57

Graneros Perfs.
6339, 6358, 6372-75

PBD - 6631

1/2" casing @
631' with 499 cu. ft.



EXHIBIT NO.
Merrion & Bayless
Case 5675
Jicarilla 428-2

Facts Pertaining to Dual Completion.

1. Commission has previously authorized similar type dual completion utilizing 4-1/2" casing for deep oil production and cemented in same well bore with 4-1/2" casing, 2-7/8" casing for shallow gas production.

Example:

J. Gregory Merrion Edna #2
4-1/2" casing - Devils Fork Gallup
2-7/8" casing - Ballard Pictured Cliffs

2. Sufficient cement was used to cover far in excess of all pays. Subsequent Bond Log indicated cement 362 feet above Gallup - Mancos-Dakota pay, 926 feet above Mesaverde pay, 384 feet above ~~Chaco~~ Chaco pay, and in spite of the fact that enough cement had been used to cover to a level of 470 feet above the Pictured Cliffs, the Bond Log indicated the Pictured Cliffs uncovered. The 2-7/8" was perforated (directionally) and squeezed with 50 sax cement. A second Bond Log was run indicating good bond from 36 feet below Pictured Cliffs to 24 feet above Pictured Cliffs.

During frac treatment had slight pressure break halfway through and minor communication out braden head. Well was flow tested and made heavy spray of water during test. Well drowned out after shut in.

Propose to repair cement channel.

3. Three turbolizers were run on the 2-7/8" casing opposite the ~~Chaco~~ Chaco Zone and three more turbolizers were run on the 2-7/8" opposite the Pictured Cliffs.

4. Directional perforating equipment was used for all perforating inside the 2-7/8" casing.

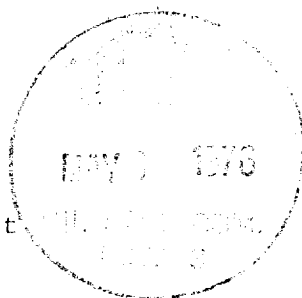
BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
Applicants EXHIBIT NO. 4
CASE NO. 5675
Submitted by Merrion
Hearing Date 4-28-76

EXHIBIT NO.
Merrion & Bayless
Case 5675
Jicarilla 428-2

Facts Pertaining to Co-mingling of Oil Production Inside 4-1/2" Casing:

1. Production from all zones presently open is oil. Anticipated production from Mesaverde interval to be opened is oil (based upon production history from nearby Fred Turner wells completed from Otero Pt. Lookout zone).
2. Current production is 22 BOPD with bottom perforation at 6375 feet. Anticipated additional production from the Mesaverde is anticipated to be on the order of 10-20 BOPD - for a total stream of about 40 BOPD.
3. Zones currently completed require artificial lift. (Sucker rod pumping equipment.) It is anticipated that the Mesaverde will also require artificial lift.
4. Current water production is only 3 bbls. water per day. Mesaverde could make water but any excessive amount will be squeezed.
5. Current water is slightly salty and has given no evidence of scaling problems. Mesaverde water, if any, could cause scale problems in the well bore, but it is anticipated that no permanent damage will result and for the most part any temporary damage can either be prevented with scale inhibitor or repaired with an occasional acid wash.
6. It is anticipated that all crude will command to market price for the area.
7. Ownership of all zones is the same.

Jicarilla Tribe ----- 16.666% R.I.
J. Gregory Merrion---- 41.667% W.I.
Robert L. Bayless---- 41.667% W.I.
8. All zones are essentially marginal and it is doubtful that secondary recovery could be applied to any of them.
9. Bottom hole pressures have not been measured but are thought to be virgin pressures ranging from 1800 psi in the Pt. Lookout to 2700 psi in the Graneros.



BEFORE EXAMINER STAMETS OIL CONSERVATION COMMISSION	
Applicants	EXHIBIT NO. <u>5</u>
CASE NO.	<u>5675</u>
Submitted by	<u>Merrion</u>
Hearing Date	<u>4-28-76</u>

EXHIBIT NO.
Case 5675
Merrion & Bayless
Jicarilla 428-2

Proposed Method of Allocating Co-mingled Production from Deep Side of Dual.

1. Take final GOR test of co-mingled production measuring oil (O_1), gas (G_1), and water (W_1).
2. Pull rods and swab test well through treater 4 hours or until stabilized. Use last hour rate for oil (O_2), water (W_2), and gas (G_2) measurement.
3. Trip tubing and run packer to 6300. Swab test Graneros perforations 6339-6375 through treater for 4 hours or until stabilized. Use last hour rate for oil (O_3), water (W_3), and gas (G_3) measurement.
4. Set bridge plug and perforate, test and stimulate as necessary the Mesaverde zone 4256.60, 4408.16, 4424.28.
5. Run tubing and rods and pump test all zones co-mingled until recovery of all load oil plus 30 days.
6. Take 24 hour GOR test measuring oil (O_4), water (W_4), and gas (G_4).
7. Allocate production as follows:

Dakota

$$\text{Oil Fraction} = \frac{O_3}{O_2} \times O_1/O_4$$

$$\text{Gas Fraction} = \frac{G_3}{G_2} \times G_1/G_4$$

$$\text{Water Fraction} = \frac{W_3}{W_2} \times W_1/W_4$$

Gallup

$$\text{Oil Fraction} = \left(\frac{O_2 - O_3}{O_2} \right) \times O_1/O_4$$

$$\text{Gas Fraction} = \left(\frac{G_2 - G_3}{G_2} \right) \times G_1/G_4$$

$$\text{Water Fraction} = \left(\frac{W_2 - W_3}{W_2} \right) \times W_1/W_4$$



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
Applicants EXHIBIT NO. 6
CASE NO. 5675
Submitted by Merrion
Hearing Date 4-28-76

Mesaverde

$$\text{Oil Fraction} = \frac{O_4 - O_1}{O_4}$$

$$\text{Gas Fraction} = \frac{G_4 - G_1}{G_4}$$

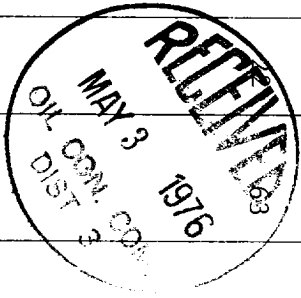
$$\text{Water Fraction} = \frac{W_4 - W_1}{W_4}$$

**NEW MEXICO OIL CONSERVATION COMMISSION
GAS - OIL RATIO TESTS**

C-116
Revised 1-1-65

Operator J. Gregory Merrion & Robert L. Bayless		Pool Undesignated		County Sandoval											
Address P.O. Box 507, Farmington, New Mexico		TYPE OF TEST - (X)		Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>											
LEASE NAME Jicarilla Contract 428 (Graneros, Gallup, Mancos)	WELL NO. 2	LOCATION			DATE OF TEST 4-20-76	STATUS P	CHOKE SIZE -	TBG. PRESS. 20	DAILY ALLOW-ABLE Test	LENGTH OF TEST 24	PROD. DURING TEST				GAS - OIL RATIO 2864
		U	S	T							R	WATER BBLs.	GRAV. OIL BBLs.	GAS M.C.F.	

BEFORE EXAMINER STATEMENTS
OIL CONSERVATION COMMISSION
Opportunity EXHIBIT NO. **1**
CASE NO. **5475**
Submitted by *Merrion*
Hearing Date **4-28-76**



No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

J. Gregory Merrion
Owner (Signature)

(Title)
4-25-76
(Date)

EXHIBIT NO.
Merrion & Bayless
Case 5675
Jicarilla 428-2

Facts pertaining to co-mingling of production of ~~Chacon~~ ^{Chacra} gas with Pictured Cliffs gas inside 2-7/8" casing:

1. The ~~Chacon~~ ^{Chacra} Zone is extremely marginal and will not flow steady, making an estimated 15 MCF/da plus some water (less than 5 B/D).
2. It is estimated that after repair of a cement channel the Pictured Cliffs will I.P. for 1500 MCF/da with very little water.
3. Neither water exhibits scaling tendencies.
4. Shut in pressure for the Chacon Zone is 835 psig and for the Pictured Cliffs is 667 psig (based upon an adjacent well).
5. The ~~Chacon~~ ^{Chacra} Zone will not produce into the line but may contribute a little production if the co-mingled Pictured Cliffs gas is allowed to keep it unloaded.
6. Ownership of both zones is common except for a 3-1/3% ORR owned by Elliott A. Riggs to the base of the Pictured Cliffs. As per attached letter, Merrion & Bayless have agreed to pay Riggs the same ORR on the Chacon gas from this well. The result will be that all interests are common.

BEFORE EXAMINER STAMETS	
OIL CONSERVATION COMMISSION	
Applicants	EXHIBIT NO. 8
CASE NO. 5675	
Submitted by Merrion	
Hearing Date 4-28-76	

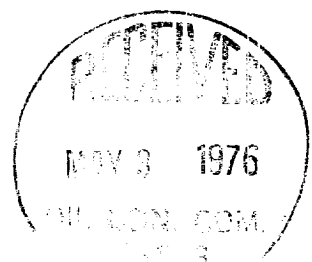


EXHIBIT NO.
Case 5675
Merrion & Bayless
Jicarilla 428-2

Proposed Method of Allocating Co-mingled Production from Shallow Side of Dual.

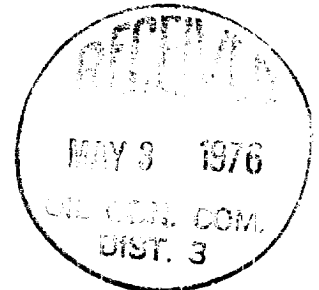
1. Take 24 hour test of ~~Chacon~~ ^{chacre} Zone flowing through 1-1/4" tubing. Measure gas rate (or as an alternative if well will not flow, swab test 4 hours and measure instantaneous gas rate). Gas Rate = G_1
2. Pull 1-1/4" tubing. Squeeze cement to repair channeled cement above Pictured Cliffs. Re-stimulate if necessary. Flow test well to clean up. When well is on line, use flow period data during initial deliverability test to calculate G_2 at zero deliverability pressure.

3. Allocate.

~~Chacon~~ ^{chacre} fraction = $\frac{G_1}{G_2}$

Pictured Cliffs fraction = $\frac{G_2 - G_1}{G_2}$

4. As an alternative, in the event G_1 is less than 5% of stream, allocate all gas to Pictured Cliffs.



BEFORE EXAMINER STAMPS	
OIL CONSERVATION COMMISSION	
Applicants	EXHIBIT NO. 9
CASE NO.	5675
Submitted by	Merrion
Hearing Date	4-28-76