



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

August 13, 1997

Enron Oil & Gas Company
P.O. Box 2267
Midland, Texas 79702

Attention: Mr. Randall S. Cate

Re: Production Allocation
Sand Tank "7" Federal Com Well No. 1
Division Order No. R-10814

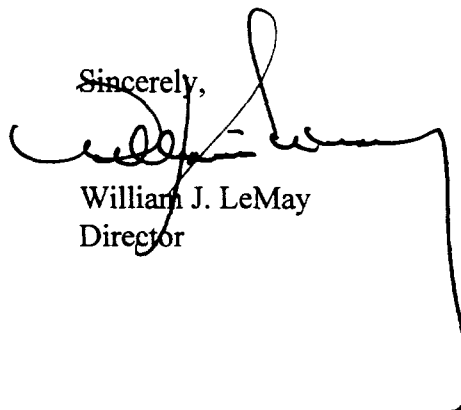
Dear Mr. Cate:

Pursuant to the production data submitted July 11, 1997 on the Sand Tank "7" Federal Com Well No. 1, the allocation of production from the well is hereby established as follows:

Pool	Oil %	Gas %
Sand Tank-Morrow Gas Pool	26%	74%
Sand Tank-Chester Gas Pool	50%	50%

If you should have any questions, please contact Mr. David Catanach at (505) 827-8184.

Sincerely,



William J. LeMay
Director

WJL/DRC

xc: OCD-Artesia
Case File-11782 ✓

ENRON

Oil & Gas Company

P. O. Box 2267 Midland, Texas 79702 (915) 686-3600

July 11, 1997

NMOCD
2040 S. Pacheco
Santa Fe, NM 87505-6429

Attn.: Mr. David Catanach

Re.: Enron Oil & Gas Company
Sand Tank "7" Fed. Com. No. 1
Allocation Formula for
Downhole Commingled Production

Gentlemen:

Pursuant to Order No. R-10814, EOG submits the following data and recommended allocation on the subject well:

1. Morrow and Chester production was downhole commingled on May 13, 1997 and has stabilized July 8, 1997 at a rate of 1,230 MCF, 20 BC, 8 BW.
2. July forecasted rate from individual production plots was 300 MCFD from the Morrow and 620 MCFD from the Chester.
3. The Morrow was expected to increase 300 to 500 MCFD after commingling due to improved liquid lifting velocities up the tubing.
4. It is recommended that the increase in production from commingling be attributed to the Morrow resulting in a July breakout of 610 MCFD to the Morrow and 620 MCFD to the Chester for a fixed gas allocation of 50% to each zone.
5. The condensate is recommended to be allocated based on the pre-commingled BBL/MCF yield resulting in a fixed 26% (Morrow) and 74% (Chester).⁷

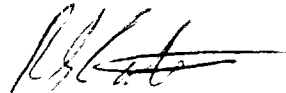
The attached production plots, Form C-107-A, and copy of Order R-10814 are included for your use.

Mr. David Catanach
July 11, 1997
Page 4

If you have questions or need additional information please call me at (915) 686-3698.

Sincerely,

ENRON OIL & GAS COMPANY

A handwritten signature in black ink, appearing to read "R. S. Cate", with a long horizontal flourish extending to the right.

Randall S. Cate
Project Reservoir Engineer

RSC/krp

Attachments

cc: Tim Gum (NMOCD - Artesia)

m:\cate\kp133rsc.doc

DISTRICT I
P. O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107-A
New 3-12-96

DISTRICT II
811 South First St., Artesia, NM 88210-2835

OIL CONSERVATION DIVISION
2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

APPROVAL PROCESS:
Administrative Hearing

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410-1693

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE
 YES NO

Enron Oil & Gas Company P. O. Box 2267, Midland, TX 79702
Operator Address

Sand Tank "7" Federal No. 1 D-6-18-30 Eddy
Lease Well No. Unit Ltr. - Sec - Twp - Rge County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 7377 Property Code 18729 API NO. 30-015-28870 Federal State (and/or) Fee

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Sand Tank (Morrow) 84872		Sand Tank (Chester) 96573
2. Top and Bottom of Pay Section (Perforations)	11,189'-210'		11,673'-693'
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	(Current) a. 2,300	a.	a. 2,729 (1/5/97)
	(Original) b. 4,687	b.	b. 5,092
6. Oil Gravity (°API) or Gas BTU Content	1,187		1,246
7. Producing or Shut-In?	Producing		Producing
Production Marginal? (yes or no)	Expected to be		Yes
* If Shut-In, give data and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: Rates:
	Date: 5/6/97 Rates: 457 MCF, 3 BC, 3 BW	Date: Rates:	Date: 5/1/97 Rates: 750 MCF, 14 BC, 4 BW
8. Fixed Percentage Allocation Formula - % for each zone	Oil: 26% Gas: 50%	Oil: % Gas: %	Oil: 74% Gas: 50%

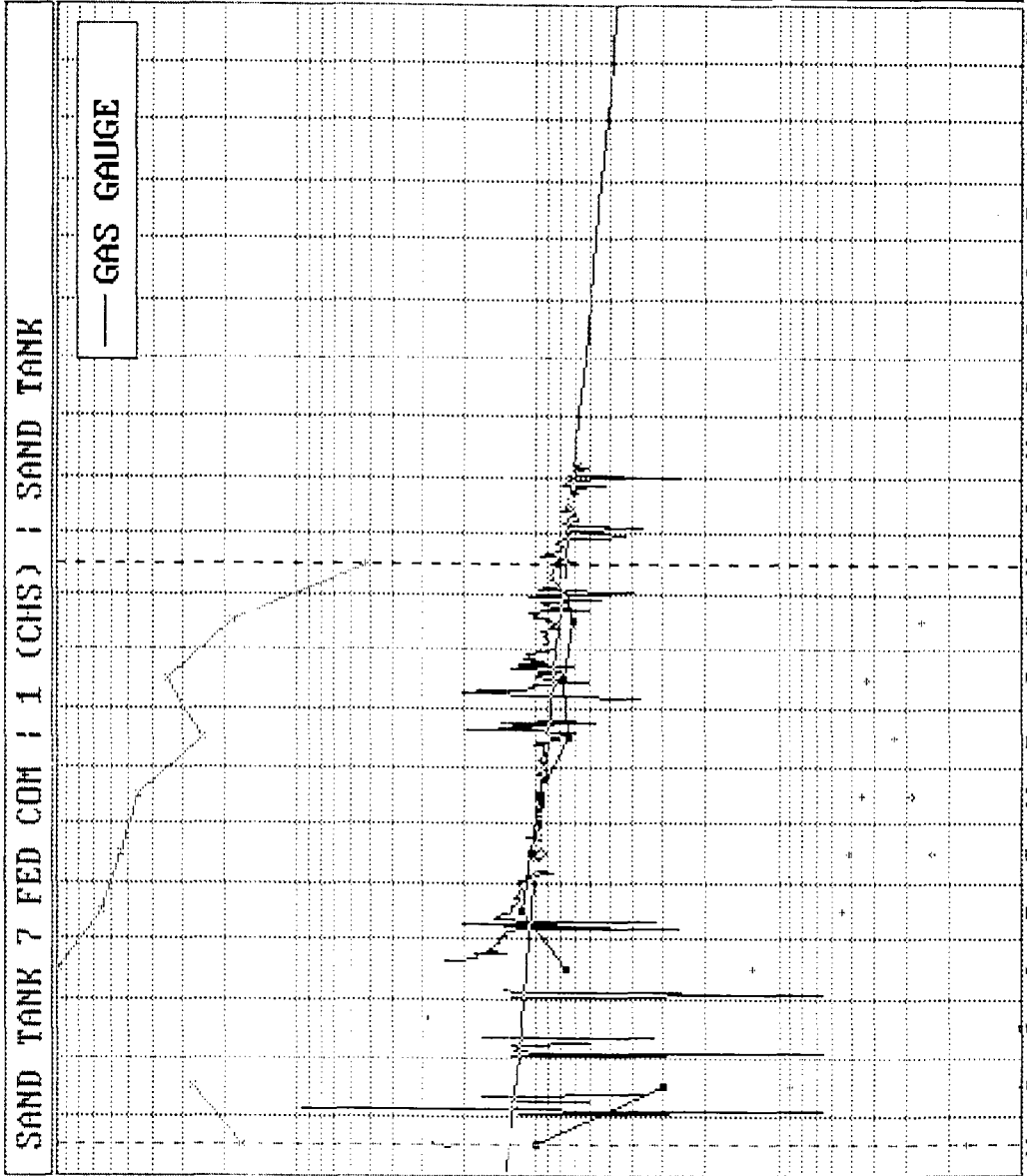
9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? Yes No
If not, have all working, overriding, and royalty interests been notified by certified mail? Yes No
Have all offset operators been given written notice of the proposed downhole commingling? Yes No
11. Will cross-flow occur? Yes No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with each other? Yes No
13. Will the value of production be decreased by commingling? Yes No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. Yes No Verbal
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). _____
16. ATTACHMENTS:
 - * C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
 - * Production curve for each zone for at least one year. (If not available, attach explanation.)
 - * For zones with no production history, estimated production rates and supporting data.
 - * Data to support allocation method or formula.
 - * Notification list of all offset operators.
 - * Notification list of working, overriding, and royalty interests for uncommon interest cases.
 - * Any additional statements, data, or documents required to support commingling.

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

SIGNATURE  TITLE Project Reservoir Engineer DATE 7/11/97

TYPE OR PRINT NAME Randall S. Cate TELEPHONE NO. (915) 686-3698

SAND TANK 7 FED COM I 1 (CHS) I SAND TANK		Prop 297	
○ OIL /d	○ GAS /d	○ OIL/GAS	○ WATER /d
RateTime	Semi	Log	
EUR	671,725	Cum	276,302
Rem	395,424	Rem%	58.9%
Yrs	5.92	Date	5/1/1997
Act	0	Qmo	21,393
Q	709	n	0
De	47,233	Qab	16



Major = GAS

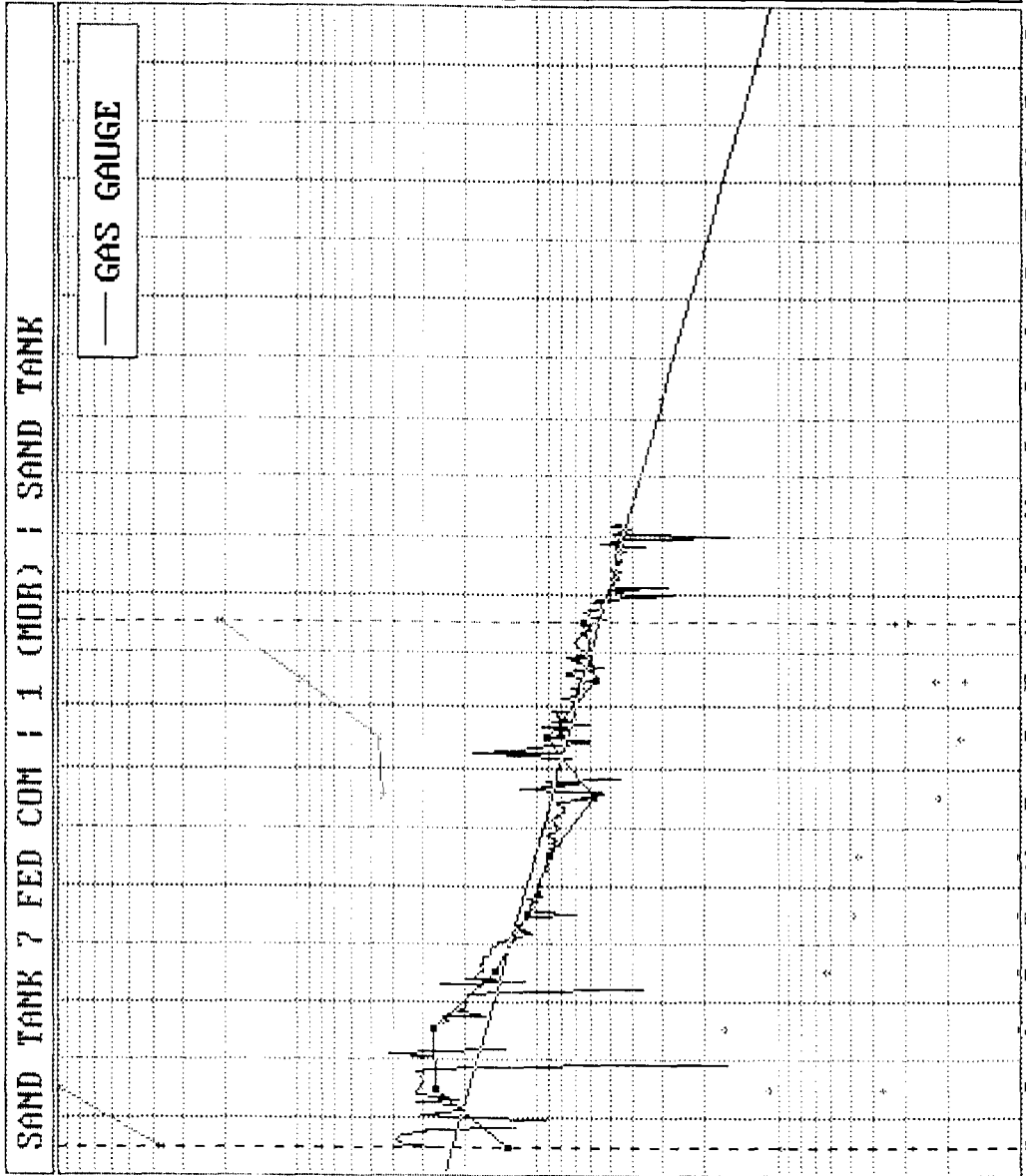
10000
 1000
 100
 0.1
 0

OIL
 GAS
 OIL/GAS
 WATER

1996
 1997

M J J A S O N D J J A M A M J J F M A M J J A S O N D

Prop 296	
<input type="radio"/> OIL /d	<input type="checkbox"/> RateTime
<input checked="" type="radio"/> GAS /d	<input checked="" type="checkbox"/> Semi Log
<input type="radio"/> OIL/GAS	EUR 485,533
<input type="radio"/> WATER /d	Cum 376,451
	Rem 109,082
	Rem% 22.5%
	Yrs 1.33
	Date 3/1/1997
Act	19,471
Qmo	17,178
Q	599.5
n	0
De	84.688
Qab	50



OIL
 GAS
 OIL/GAS
 WATER
 10000
 1000
 100
 10
 1

Major = GAS

JUN 06 1997 10:31

PAGE 002

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

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

**CASE NO. 11782
Order No. R-10814**

**APPLICATION OF ENRON OIL & GAS
COMPANY FOR DOWNHOLE COMMINGLING,
EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 15, 1997, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 4th day of June, 1997, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Enron Oil & Gas Company, seeks authority to downhole commingle the Morrow and Chester formations, Sand Tank-Morrow Gas Pool and Sand Tank-Chester Gas Pool, within its Sand Tank "7" Federal Com Well No. 1 located 990 feet from the North and West lines (Unit D) of Section 7, Township 18 South, Range 30 East, NMPM, Eddy County, New Mexico.
- (3) According to applicant's evidence and testimony, the subject well was drilled in April, 1996, to a total depth of approximately 11,835 feet. The well was dually completed in the Sand Tank-Morrow and Sand Tank-Chester Gas Pools during May-June, 1996. Initial potential in the Sand Tank-Chester Gas Pool was approximately 2.8 MMCFGD and 98 BOPD. Initial potential in the Sand Tank-Morrow Gas Pool was approximately 3.6 MMCFGD and 100 BOPD.

(4) Production rates as of May, 1997, are summarized as follows:

<u>Pool</u>	<u>Producing Rates</u>		
	<u>Oil</u>	<u>Gas</u>	<u>Water</u>
Sand Tank-Morrow Gas Pool	3 B/D	457 MCF/D	3 B/D
Sand Tank-Chester Gas Pool	14 B/D	750 MCF/D	4 B/D

(5) The applicant seeks authority to downhole commingle the subject well primarily due to liquid loading problems associated with the Morrow completion.

(6) The current wellbore configuration of the Sand Tank "7" Federal Com Well No. 1 is such that the Chester formation is producing through 2 7/8 inch tubing, and the Morrow formation is producing through the tubing/casing annulus.

(7) Applicant's engineering evidence and testimony indicates that:

- a) the Morrow formation has exhibited a steep decline in production which applicant attributes to liquid loading problems within the casing/tubing annulus;
- b) the Chester zone is marginal in this area both in terms of current producing rate and estimated ultimate gas recovery; and,
- c) producing the well in a downhole commingled configuration will improve the producing efficiency of the Morrow formation and should result in a production increase of 300-500 MCF gas per day from the Morrow formation.

(8) Applicant's engineering evidence further indicates that:

- a) the bottomhole pressure of the highest pressured commingled zone does not exceed the original reservoir pressure of any other commingled zone in the wellbore, adjusted to a common datum;
- b) commingling will not result in the permanent loss of reserves due to crossflow in the wellbore;
- c) neither zone appears to be fluid sensitive;

- d) the fluids from each zone are compatible with the fluids from the other, and combining the fluids will not result in the formation of precipitates which might damage any of the reservoirs;
 - e) the interest ownership between the zones is common.
- (9) No offset operator appeared at the hearing in opposition to the application.

(10) Approval of the proposed downhole commingling will allow the applicant the opportunity to recover additional oil and gas reserves from the Morrow and Chester zones which may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(11) The applicant proposed that the allocation formula be determined after a stabilized commingled production rate is obtained and after consultation with the supervisor of the Division's Artesia District Office.

(12) After consultation with the supervisor of the Division's Artesia District Office, the applicant should be required to submit the approved allocation formula to the Santa Fe Office of the Division.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Enron Oil & Gas Company, is hereby authorized to downhole commingle the Morrow and Chester formations, Sand Tank-Morrow Gas Pool and Sand Tank-Chester Gas Pool, within its Sand Tank "7" Federal Com Well No. 1 located 990 feet from the North and West lines (Unit D) of Section 7, Township 18 South, Range 30 East, NMPM, Eddy County, New Mexico.

(2) The applicant shall consult with the supervisor of the Divisions's Artesia District Office in order to determine a formula for the allocation of production from the subject well.

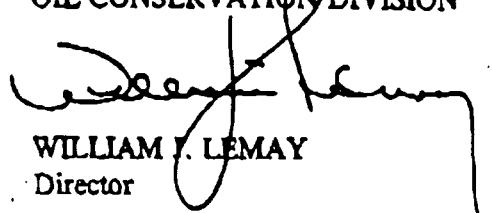
(3) After consultation with the supervisor of the Division's Artesia District Office, the applicant shall submit the approved allocation formula to the Santa Fe Office of the Division.

(4) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

CASE NO. 11782
Order No. R-10814
Page 4

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L