

DATE IN 12/17/99	SUSPENSE 1/6/00	ENGINEER DC	LOGGED KW	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION  
- Engineering Bureau -

2584

**ADMINISTRATIVE APPLICATION COVERSHEET**

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

**Application Acronyms:**

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
[DD-Directional Drilling] [SD-Simultaneous Dedication]  
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling  
NSL NSP DD SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

X DHC CTB PLC PC OLS OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
WFX PMX SWD IPI EOR PPR

SEP 17 1999  
OIL CONSERVATION DIVISION

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

[A] Working, Royalty or Overriding Royalty Interest Owners

[B] Offset Operators, Leaseholders or Surface Owner

[C] Application is One Which Requires Published Legal Notice

[D] X Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Peggy Cole

*Peggy Cole*

Regulatory/Compliance Administrator

Print or Type Name

Signature

Title

Date

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
DISTRICT II  
811 South First St., Artesia, NM 88210  
DISTRICT III  
1000 Rio Brazos Rd, Aztec, NM 87410  
DISTRICT IV  
2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-107-A  
Revised August 1999

APPROVAL PROCESS:

\_\_\_ Administrative \_\_\_ Hearing

EXISTING WELLBORE

\_\_\_ YES \_\_\_X\_ NO

APPLICATION FOR DOWNHOLE COMMINGLING

BURLINGTON RESOURCES OIL & GAS COMPANY

PO BOX 4289, FARMINGTON, NM 87499

Operator

Address

SAN JUAN 27-5 UNIT

83M

09-27N-05W

RIO ARRIBA

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7454 API NO. 30-039-XXXX Federal X, 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	BLANCO MESAVERDE - 72319		BASIN DAKOTA - 71599
2. Top and Bottom of Pay Section (Perforations)	WILL BE SUPPLIED UPON COMPLETION		WILL BE SUPPLIED UPON COMPLETION
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	a. (Current) 781 psi (see attachment) b. (Original) 1294 psi (see attachment)		a. (Current) 967 psi (see attachment) b. (Original) 3101 psi (see attachment)
6. Oil Gravity (EAPI) or Gas BTU Content	BTU 1176		BTU 1127
7. Producing or Shut-In?	SHUT-IN		SHUT-IN
Production Marginal? (yes or no)	NO		YES
* If Shut-In, give date and oil/gas/water rates of last production	Date: N/A Rates:	Date: N/A Rates:	Date: N/A Rates:
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: N/A Rates:	Date: N/A Rates:	Date: N/A Rates:
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: % Gas: % WILL BE SUPPLIED UPON COMPLETION	Oil: % Gas: % WILL BE SUPPLIED UPON COMPLETION	Oil: % Gas: % WILL BE SUPPLIED UPON COMPLETION

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 \_\_\_X\_ No  
If not, have all working, overriding, and royalty interests been notified by certified mail? \_\_\_ Yes \_\_\_X\_ No

11. Will cross-flow occur? \_\_\_X\_ 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. \_\_\_X\_ Yes \_\_\_ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? \_\_\_X\_ Yes \_\_\_ No

13. Will the value of production be decreased by commingling? \_\_\_ Yes \_\_\_X\_ 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. \_\_\_X\_ Yes \_\_\_ No

15. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10694

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 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

Sean E. Corrigan

TITLE PRODUCTION ENGINEER

DATE: 12/10/99

TYPE OR PRINT NAME SEAN E. CORRIGAN

TELEPHONE NO. 505-326-9700

DISTRICT I  
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II  
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, NM 87504-2088

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
<sup>4</sup> Property Code	<sup>5</sup> Property Name SAN JUAN 27-5 UNIT	<sup>6</sup> Well Number 83M
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	<sup>9</sup> Elevation 7297'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	9	27-N	5-W		2550	NORTH	2075	WEST	RIO ARriba

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16 S 88-55-55 E FD. 1957 BLM BRASS CAP	2671.03' (MEAS.)	FD. 1957 BLM BRASS CAP
2550'		NMSF-079391
2075'	LAT. 36° 35.3' N LONG. 107° 22.0' W	9
FD. 1957 BLM BRASS CAP	NMSF-079391	

17 OPERATOR CERTIFICATION

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

Signature

Printed Name

Title

Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief

Date of Survey

Signature and Seal of Professional Surveyor

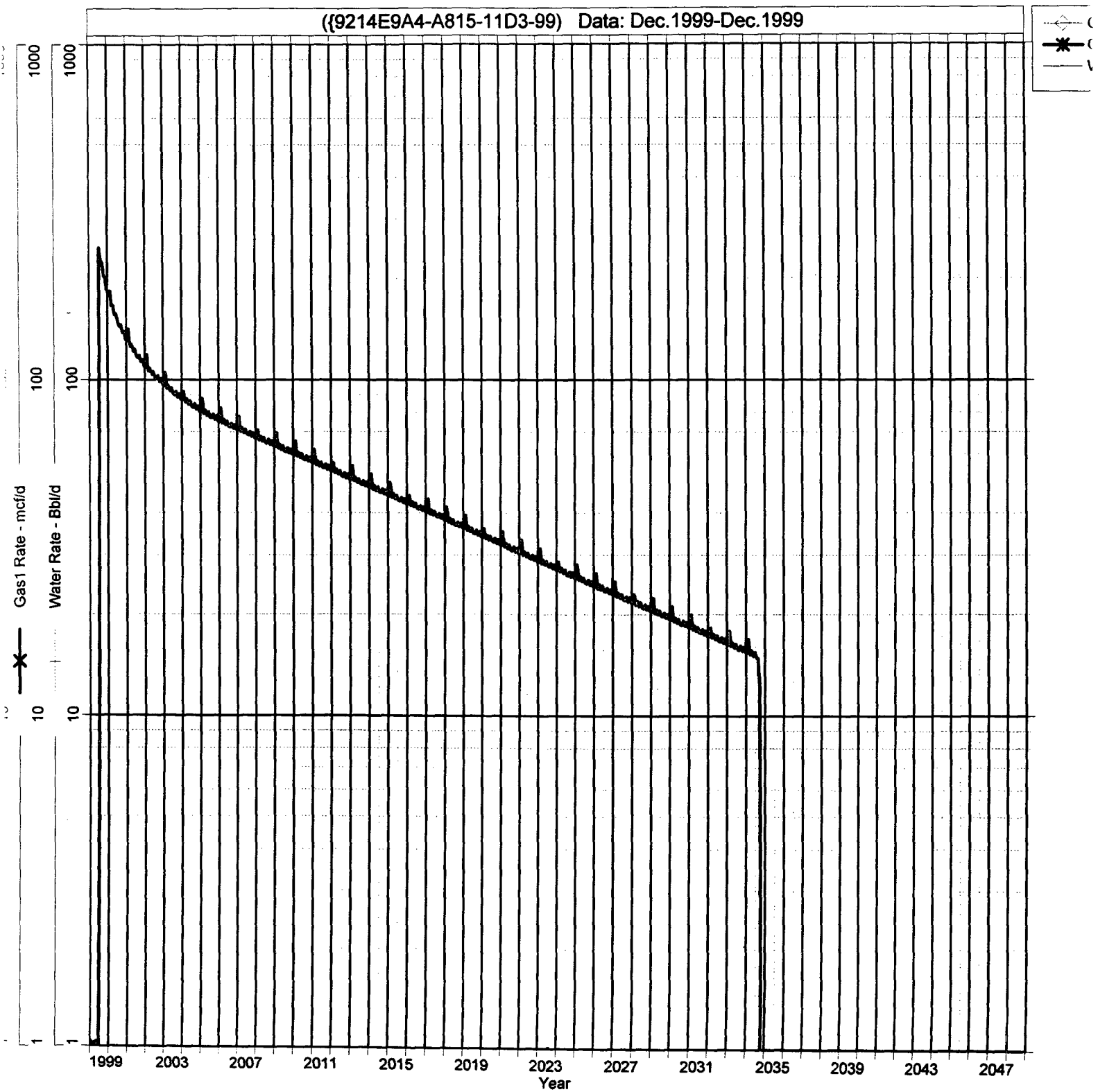
8894

Certificate Number

San Juan 27-5 Unit #83M

Expected Production

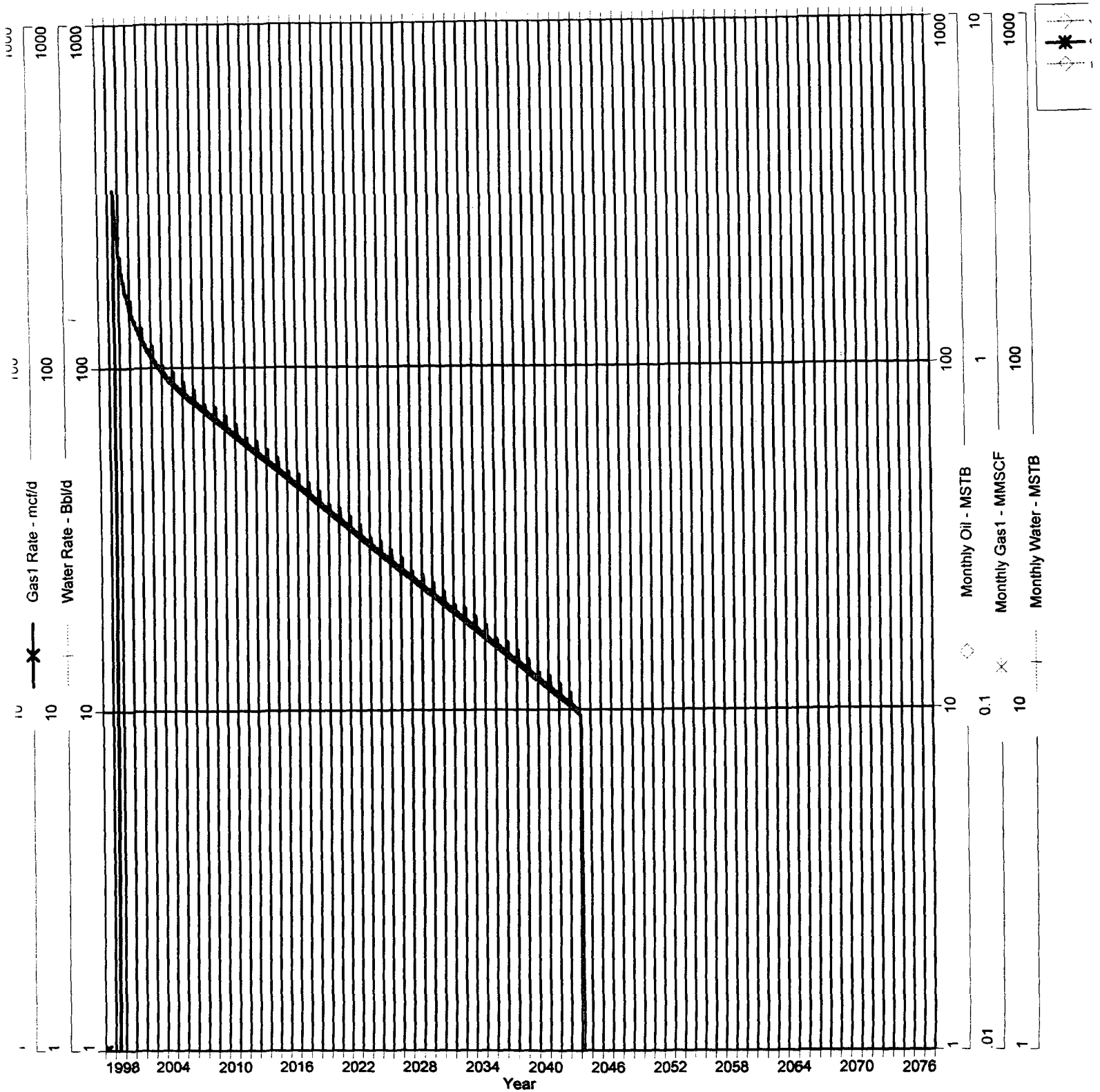
Mesaverde Formation



# San Juan 27-5 Unit #83M

Expected Production

Dakota Formation



# San Juan 27-5 Unit #83M

Bottom Hole Pressures

Flowing and Static BHP

Cullender and Smith Method

Version 1.0 3/13/94

Mesaverde		Dakota	
<u>MV-Current</u>		<u>DK-Current</u>	
GAS GRAVITY	0.669	GAS GRAVITY	0.65
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.44	%N2	0.15
%CO2	0.38	%CO2	1.33
%H2S	0	%H2S	0
DIAMETER (IN)	2.375	DIAMETER (IN)	2.375
DEPTH (FT)	5838	DEPTH (FT)	7915
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	137	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	674	SURFACE PRESSURE (PSIA)	806
BOTTOMHOLE PRESSURE (PSIA)	781.0	BOTTOMHOLE PRESSURE (PSIA)	967.1
<u>MV-Original</u>		<u>DK-Original</u>	
GAS GRAVITY	0.669	GAS GRAVITY	0.65
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.44	%N2	0.15
%CO2	0.38	%CO2	1.33
%H2S	0	%H2S	0
DIAMETER (IN)	2.375	DIAMETER (IN)	2.375
DEPTH (FT)	5838	DEPTH (FT)	7915
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	137	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1105	SURFACE PRESSURE (PSIA)	2540
BOTTOMHOLE PRESSURE (PSIA)	1294.2	BOTTOMHOLE PRESSURE (PSIA)	3101.3

Page No.: 1  
 Print Time: Wed Dec 01 14:12:40 1999  
 Property ID: 1488  
 Property Name: SAN JUAN 27-5 UNIT | 64 | 53397A  
 Table Name: R:\RESERVES\GDPNOS\TEST.DBF

--DATE--	---CUM GAS--	M SIWHP
	Mcft	Psi

10/21/61	0	1105.0
10/27/61	0	1104.0
06/11/62	19000	879.0
12/23/63	91000	787.0
10/14/64	128000	741.0
05/10/65	149000	710.0
04/19/66	184000	728.0
09/13/67	229000	691.0
05/02/68	250000	652.0
10/07/70	336076	614.0
07/22/71	361521	583.0
06/06/72	390702	577.0
07/15/74	454426	600.0
12/17/80	614382	539.0
04/21/86	692621	502.0
05/10/89	728750	582.0
07/15/91	746937	686.0
07/30/91	746938	674.0

San Juan 27-5 Unit #83M

Mesaverde Offset

Page No.: 1

Print Time: Wed Dec 01 14:12:29 1999

Property ID: 1519

Property Name: SAN JUAN 27-5 UNIT | 86 | 50641A

Table Name: R:\RESERVES\GDPNOS\TEST.DBF

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Mcf Psi

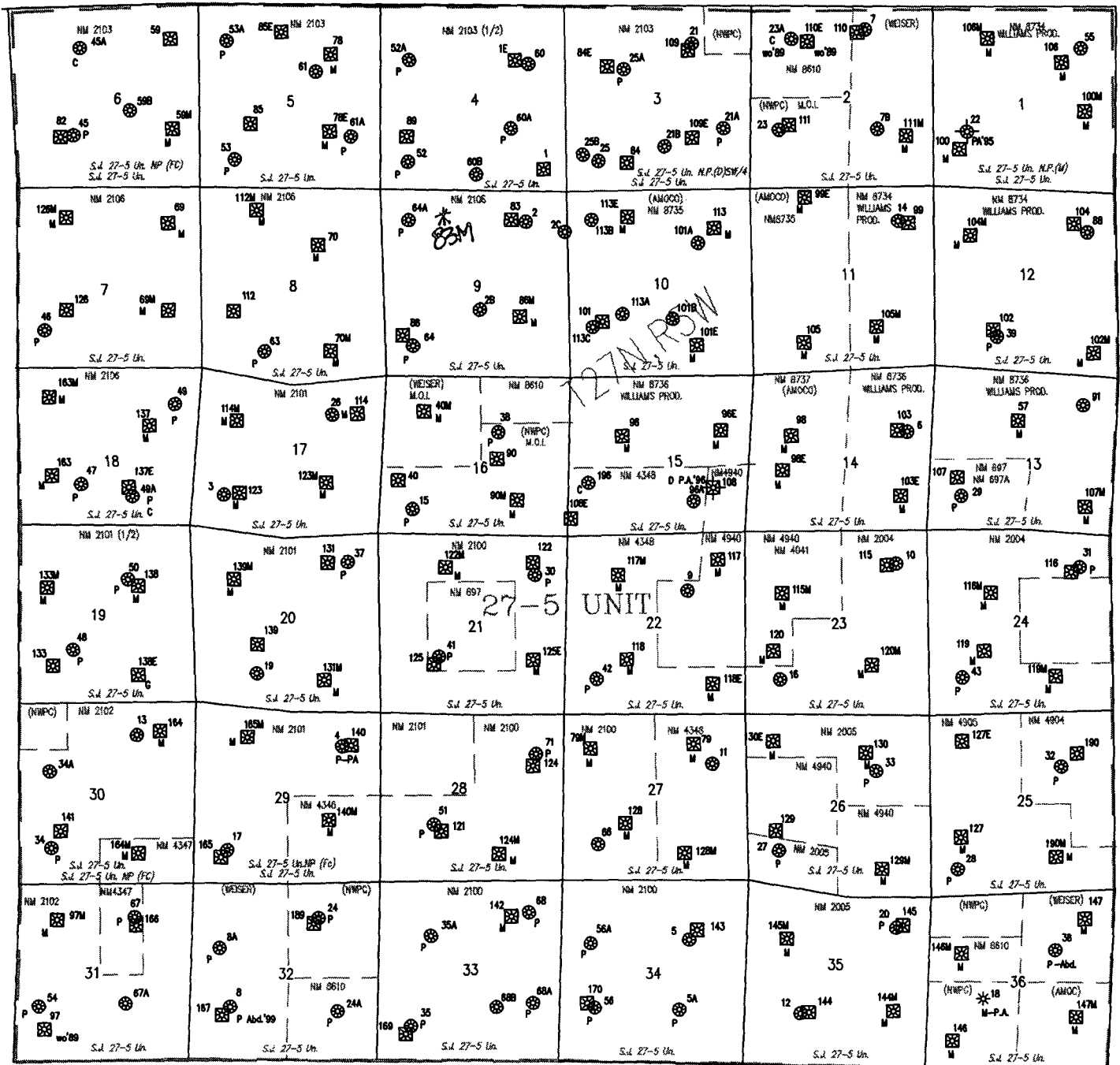
10/01/62	0	2540.0
10/23/62	0	2581.0
03/18/63	43000	1569.0
09/28/64	179000	1107.0
05/10/65	243000	925.0
04/19/66	320000	842.0
05/16/67	390000	773.0
05/02/68	440000	817.0
08/25/69	515419	747.0
10/07/70	578354	703.0
07/22/71	617515	559.0
06/06/72	662561	593.0
09/04/75	792511	699.0
08/01/77	878327	663.0
06/06/79	942853	881.0
06/03/81	1000001	696.0
09/19/83	1063403	950.0
11/19/85	1120953	971.0
06/28/88	1199651	990.0
04/22/90	1282990	643.0
04/29/92	1326675	805.0

San Juan 27-5 Unit #83M

Dakota Offset



27N - 5W - 09



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. 11626  
ORDER NO. R-10694

APPLICATION OF BURLINGTON RESOURCES  
OIL & GAS COMPANY FOR THE ESTABLISHMENT  
OF A DOWNHOLE COMMINGLING "REFERENCE  
CASE" FOR ITS SAN JUAN 27-5 UNIT PURSUANT  
TO DIVISION RULE 303.E AND THE ADOPTION  
OF SPECIAL ADMINISTRATIVE RULES THEREFOR.  
SAN JUAN COUNTY, NEW MEXICO.

RIO ARRIBA

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on October 17 and November 7, 1996, at Santa Fe, New Mexico, before Examiners David R. Catamach and Michael E. Stogner, respectively.

NOW, on this 12th day of November, 1996, 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, Burlington Resources Oil & Gas Company (Burlington), pursuant to the provisions of Division Rule 303.E., seeks to establish a downhole commingling "reference case" to provide exceptions for (a) marginal economic criteria, (b) pressure criteria, (c) allocation formulas and (d) modification of notification rules on a unit-wide basis for downhole commingling of Dakota, Mesaverde, Fruitland Coal and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 27-5 Unit, San Juan County, New Mexico.
- (3) Division Rule No. 303.E., amended by Order No. R-10470-A, currently states:

"If sufficient data exists on a lease, pool, formation, geographic area, etc., so as to render it unnecessary to repeatedly provide such data on Form C-107-A, an operator may except any of the various criteria required under Paragraph 303.D. of this rule by establishing a "reference case". The Division, upon its own motion, or by application from an operator, may establish "reference cases" either administratively or by hearing. Upon Division approval of such "reference cases" for specific criteria, subsequent applications to downhole commingle (Form C-107-A) will be required only to cite the Division order number which established such exceptions and shall not be required to submit data for those criteria."

(4) The applicant is the current operator of the San Juan 27-5 Unit which encompasses some 23,043 acres in Township 27 North, Range 5 West, NMPM, San Juan County, New Mexico.

(5) Within the San Juan 27-5 Unit, the applicant currently operates one hundred and one (101) Basin-Dakota Gas Pool wells, one hundred and five (105) Blanco-Mesaverde Gas Pool wells, eighty-seven (87) South Blanco-Pictured Cliffs and Tapacito-Pictured Cliffs Gas Pool wells, and four (4) Basin-Fruitland Coal Gas Pool wells.

(6) According to its evidence and testimony, Burlington seeks to:

- a) establish a "reference case" for marginal economic criteria in the Dakota and Pictured Cliffs formations whereby these formations and/or pools may be identified as "marginal" on Form C-107-A's subsequently filed for wells within the San Juan 27-5 Unit. The applicant further proposes that the data provided in the immediate case serve as supplemental data or confirmation that these formations and/or pools should be classified as "marginal";
- b) establish a "reference case" for pressure criteria in the Dakota and Pictured Cliffs formations whereby the Division may utilize data provided in the immediate case to verify the pressure data provided on Form C-107-A's subsequently filed for wells within the San Juan 27-5 Unit;

- c) establish a "reference case" whereby the Division utilizes the data presented in the immediate case to endorse or approve certain methods of allocating production whereby the applicant need not submit additional data or justification when proposing a certain method of allocating production on Form C-107-A's subsequently filed for wells within the San Juan 27-5 Unit; and.
- d) establish a "reference case" or an administrative procedure for authorizing the downhole commingling of existing or future drilled wells within the San Juan 27-5 Unit without additional notice to each affected interest owner as required by Division Rule No. 303.D.

(7) In support of its request to except marginal economic criteria, the applicant presented geologic and engineering evidence and testimony which indicates that within the San Juan 27-5 Unit:

- a) the structure and thickness of the Dakota and Picured Cliffs formations are very consistent;
- b) the average recoverable Dakota and Picured Cliffs gas reserves underlying an undeveloped drill block are approximately 583 MMCFG and 426 MMCFG, respectively;
- c) the average initial producing rate for a newly drilled or recompleted Dakota and Picured Cliffs gas well is approximately 393 MCFGD and 63 MCFGD, respectively; and.
- d) the estimated ultimate gas recoveries and initial producing rates from the Dakota and Picured Cliffs formations are insufficient to justify drilling stand alone wells and/or dually completed wells to recover such gas reserves.

(8) The evidence and testimony presented by the applicant indicates that the Dakota and Picured Cliffs formations within the San Juan 27-5 Unit should be properly classified as "marginal".

(9) In support of its request to except pressure criteria within the Dakota and Picured Cliffs formations within the San Juan 27-5 Unit, the applicant presented engineering evidence and testimony which indicates that:

- a) the average shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations at the time of initial development were approximately 3.141 psi and 1.118 psi, respectively; and.
  - b) the average current shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations are approximately 1.032 psi and 441 psi, respectively.
- (10) There is sufficient pressure data available within the San Juan 27-5 Unit so as to except pressure criteria as proposed by the applicant.
- (11) The applicant testified that various allocation methods will be utilized for downhole commingled wells within the San Juan 27-5 Unit depending on the circumstances. Some of the methods and circumstances are described as follows:
- a) the subtraction method will likely be utilized in those instances involving the Basin-Fruitland Coal Gas Pool and in those instances where a zone with a well established decline rate is commingled with a newly completed zone;
  - b) a fixed allocation formula will be utilized in those instances where production history for both zones is available, or in those instances where newly completed zones are tested and stabilized flow rates obtained.
- (12) The allocation methods proposed by the applicant are routinely utilized by industry and approved by the Division and therefore the proposal to except allocation formulas should be approved.
- (13) In support of its request to establish a "reference case" or administrative procedure for providing notice within the San Juan 27-5 Unit the applicant presented evidence and testimony which indicates that:
- a) the interest ownership between two zones within a given wellbore in the San Juan 27-5 Unit is generally not common;
  - b) pursuant to Division Rule No. 303.D., applicant is currently required to notify all interest owners within the San Juan 27-5 Unit every time a Form C-107-A is submitted to the Division. There is a considerable number of such interest owners within the unit;

- c) providing notice to each interest owner within the San Juan 27-5 Unit of subsequent downhole comminglings is unnecessary and is an excessive burden on the applicant;
- d) the downhole commingling of wells within the San Juan 27-5 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 27-5 Unit should not violate the correlative rights of any interest owner;
- e) no interest owner appeared at the hearing in opposition to the establishment of a "reference case" or administrative procedure for notice.

(14) An administrative procedure should be established within the San Juan 27-5 Unit for obtaining approval for subsequent downhole commingled wells without notice to Unit interest owners, provided however that, all other provisions contained within Division Rule No. 303.C. are complied with.

(15) Approval of the proposed "reference cases" for marginal economic criteria, pressure criteria, allocation formulas and notice will lessen the burden on the applicant insofar as providing the data required pursuant to Division Rule No. 303.D. and Form C-107-A. will provide the applicant a streamlined method for obtaining downhole commingling approvals within the San Juan 27-5 Unit, and will not violate correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Burlington Resources Oil & Gas Company to establish a "reference case" for (a) marginal economic criteria, (b) pressure criteria, (c) allocation formulas and (d) modification of notification rules on a unit-wide basis for downhole commingling of Dakota, Mesaverde, Fruitland Coal and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 27-5 Unit, San Juan County New Mexico, is hereby approved.

CASE NO. 11626  
Order No. R-10694  
Page -6-

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(2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 27-5 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictured Cliffs and Dakota formations as "marginal", supporting data to verify the Pictured Cliffs and Dakota pressure information provided, and support or justification for utilizing a given method or formula for allocation of production, provided however, in the event any of the data described above appearing on Form C-107-A appears to be beyond the data range provided in this case, the Division may require the submittal of additional supporting data.

(3) In order to obtain Division authorization to downhole commingle wells within the San Juan 27-5 Unit, the applicant shall file a Form C-107-A with the Santa Fe and Aztec Offices of the Division. Such application shall contain all the information required under Rule No. 303.C. of the Division Rules and Regulations, provided however that the applicant shall not be required to provide notice to all interest owners within the San Juan 27-5 Unit of such proposed commingling.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM H. LEMAY  
Director