

# BURLINGTON RESOURCES

SAN JUAN DIVISION

February 13, 1997

SENT FEDERAL EXPRESS

Mr. William LeMay  
New Mexico Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

RECEIVED  
FEB 19 1997

OIL CON. DIV.  
DIST. 3

Re: San Juan 28-6 Unit #165M *I*  
1645'FSL, 990'FEL Section 30, T-28-N, R-6-W, Rio Arriba County, NM  
API #30-039-25612

Dear Mr. LeMay:

This is a request for administrative approval for downhole commingling the Blanco Mesa Verde and Basin Dakota pools in the subject well. This well is a new Mesa Verde/Dakota well that is being drilled and completed in 1997.

To comply with the New Mexico Oil Conservation Division rules, Burlington Resources Oil & Gas Company is submitting the following for your approval of this commingling:

1. Form C107A - Application for Downhole Commingling;
2. C-102 plat for each zone showing its spacing unit and acreage dedication;
3. Expected production curves;
4. Notification list of offset operators - Burlington is the offset operator;
5. Shut in wellhead pressure and calculated down hole pressure;
6. Nine-section plats for the Mesa Verde and Dakota.

Notification of Mesa Verde and Dakota interest owners is covered under Reference Order #R-10696 issued November 7, 1996 attached.

We will consult with the Supervisor of the Aztec District Office of the New Mexico Oil Conservation Division to establish an allocation formula.

Please let me know if you require additional data.

Sincerely,



Peggy Bradfield  
Regulatory/Compliance Administrator

xc: Bureau of Land Management

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

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

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

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  
New 3-12-96

APPROVAL PROCESS :

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☐ YES ☒ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Burlington Resources Oil & Gas Company

PO Box 4289, Farmington, NM 87499

Operator	Address
San Juan 28-6 Unit	165M I 30-28-6 Rio Arriba
Lease	Well No. Unit Ltr. - Sec - Twp - Rge County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7462 API NO. 30-039-25624 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	Blanco Mesaverde - 72319	RECEIVED FEB 19 1997 OIL CON. DIV. DIST. 3	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	(Current) a. 759 psi (see attachment)  (Original) b. 1280 psi (see attachment)	a.  b.	a. 880 psi (see attachment)  b. 3236 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1214		BTU 1078
7. Producing or Shut-In?	shut in		shut in
Production Marginal? (yes or no)	no		yes
* If Shut-In 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 data and oil/gas/water of recent test (within 60 days)	Date: n/a Rates:	Date: Rates:	Date: n/a Rates:
	Date: Rates:	Date: Rates:	Date: Rates:
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: % Gas: % will be supplied upon completion	Oil: % Gas: %	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 ☒ 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

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). Reference Order #R-10696 attached

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 James A. Smith TITLE Production Engineer DATE 02-13-97

TYPE OR PRINT NAME James A. Smith TELEPHONE NO. ( 505 ) 326-9700

1980, Hubbs, NM 88241-1980

At 11

Drawer OD, Artesia, NM 88211-0719

District III

1000 N.W. Hume Rd., Aztec, NM 87410

District IV

PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

RECEIVED  
BLM

Form C-11

Revised February 21, 1991

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-039-	Pool Code 72319/71599	Pool Name Blanco Mesaverde/Basin Dakota
Property Code 7462	Property Name San Juan 28-6 Unit	Well Number 165M
OGRID No. 14538	Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	Elevation 6650'

10 Surface Location

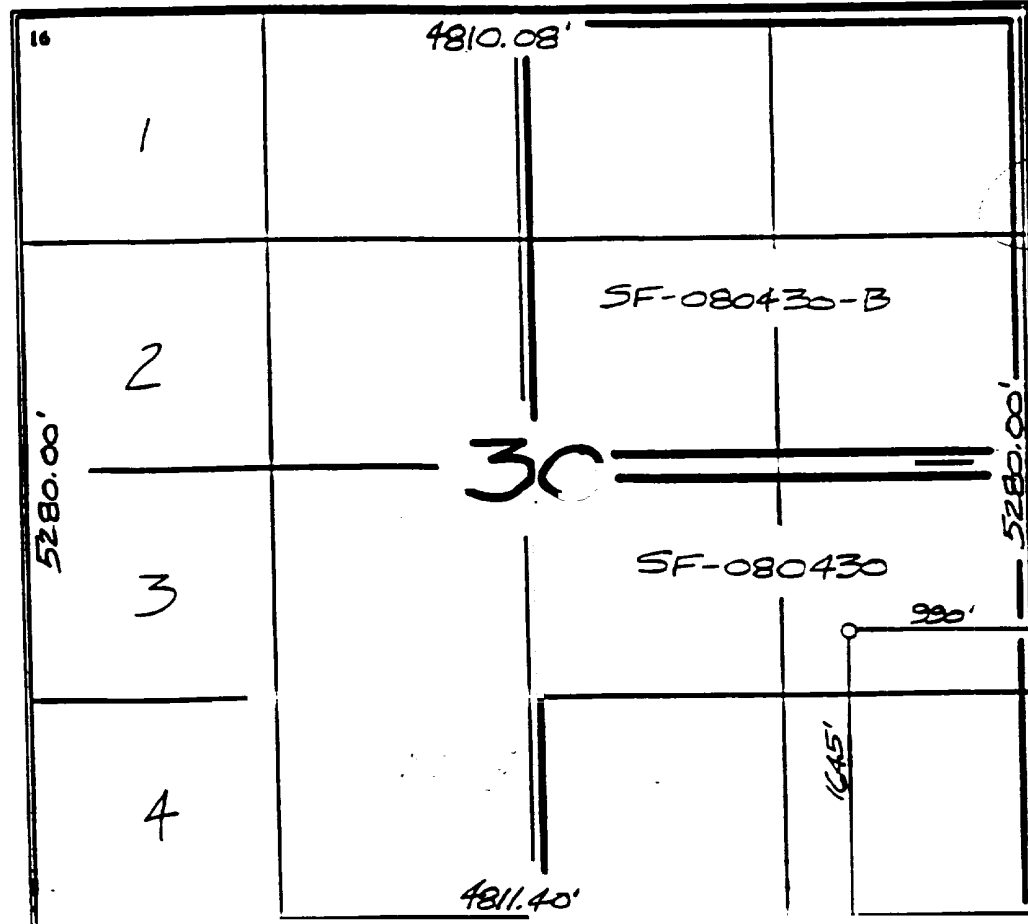
UL or lot no.	Section	Township	Range	Lot Ids	Feet from line	North/South line	Feet from line	East/West line	County
I	30	28-N	6-W		1645	South	990	East	R.A.

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ids	Feet from line	North/South line	Feet from line	East/West line	County

12 Dedicated Acres E/320 F/320	13 Joint or Infill	14 Consolidation Code	15 Order No.
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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



17 OPERATOR CERTIFICATION

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

*Peggy Bradford*  
Signature  
Peggy Bradford  
Printed Name  
Regulatory Administrator  
Title  
11-19-96  
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 or under my supervision, and that the same is true and correct to the best of my belief.

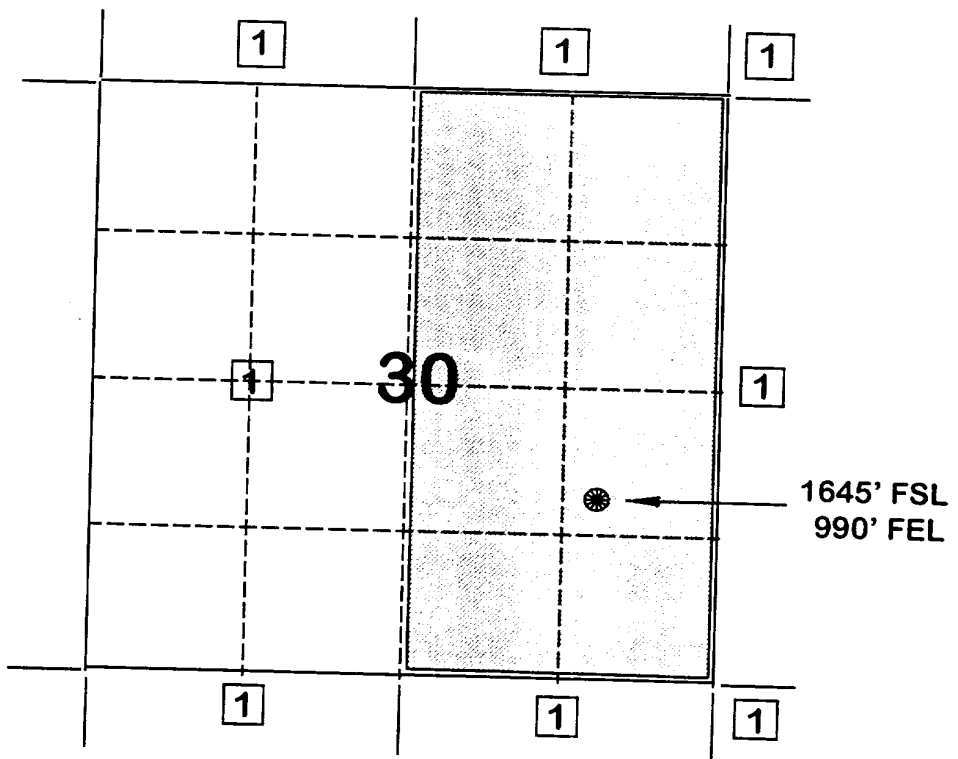
10/22/96  
Date of Survey  
Signature  
NEALE C. EDWARDS  
6857  
6857  
Certificate Number

**BURLINGTON RESOURCES OIL AND GAS COMPANY**

**San Juan 28-6 Unit #165M  
OFFSET OPERATOR \ OWNER PLAT**

**Mesaverde/Dakota Formations Commingle Well**

**Township 28 North, Range 6 West**



**1) Burlington Resources Oil and Gas Company**

Page No.: 1

Print Time: Mon Jan 27 15:42:01 1997

Property ID: 1874

Property Name: SAN JUAN 28-6 UNIT | 165 | 44094A-1

Table Name: K:\ARIES\RR97PDP\TEST.DBF

SJ 28-6 #165m  
Dakota offset

--DATE-- ---CUM GAS-- M SIWHP  
■■■■■■■■■■ ■■■■Mcf■■■■ ■■■■Psi■■■■

08/02/72	0	2688.0	← original
10/19/72	30809	1828.0	
09/04/73	156985	972.0	
04/16/74	207691	933.0	
05/05/75	291900	855.0	
00/17/77	387671	877.0	
00/17/77	387671	877.0	
00/17/77	387671	877.0	
10/17/77	428480	877.0	
06/28/79	512595	807.0	
07/13/81	611251	719.0	
10/12/83	686234	839.0	
06/27/85	791549	822.0	
10/04/88	912004	712.0	
05/29/90	954354	812.0	
05/28/92	1009329	742.0	← current

**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

GAS GRAVITY	<u>0.627</u>
COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.11</u>
%CO2	<u>1.13</u>
%H2S	<u>0</u>
DIAMETER (IN)	<u>1.5</u>
DEPTH (FT)	<u>7756</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>200</u>
FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>2688</u>
BOTTOMHOLE PRESSURE (PSIA)	<div>3235.6</div>

**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

GAS GRAVITY	0.627
COND. OR MISC. (C/M)	C
%N2	0.11
%CO2	1.13
%H2S	0
DIAMETER (IN)	1.5
DEPTH (FT)	7756
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	200
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	742
BOTTOMHOLE PRESSURE (PSIA)	880.0

SAN JUAN 27-5 UNIT #165 DAKOTA - CURRENT

Page No.: 1

Print Time: Mon Jan 27 15:42:47 1997

Property ID: 4010

Property Name: SAN JUAN 28-6 UNIT | 35 | 49445A-1

Table Name: K:\ARIES\RR97PDP\TEST.DBF

SJ 28-6 #145m  
mesa verde offset

--DATE-- ---CUM GAS-- M SIWHP  
Mcf Psi

01/23/56	0	1086.0	← original
08/24/56	84000	739.0	
04/24/57	137000	718.0	
10/29/58	251000	590.0	
08/22/59	298000	587.0	
03/29/60	327000	621.0	
10/13/61	405000	555.0	
04/23/62	416000	621.0	
02/22/63	450000	641.0	
02/24/64	494000	603.0	
02/25/65	539000	603.0	
01/04/66	577000	599.0	
01/23/67	619000	566.0	
01/02/68	661000	556.0	
08/19/70	766484	544.0	
03/23/71	793824	505.0	
08/08/72	858204	469.0	
04/16/74	912433	509.0	
06/08/76	983932	514.0	
12/04/86	1213539	652.0	← current



**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1 0 3/13/94

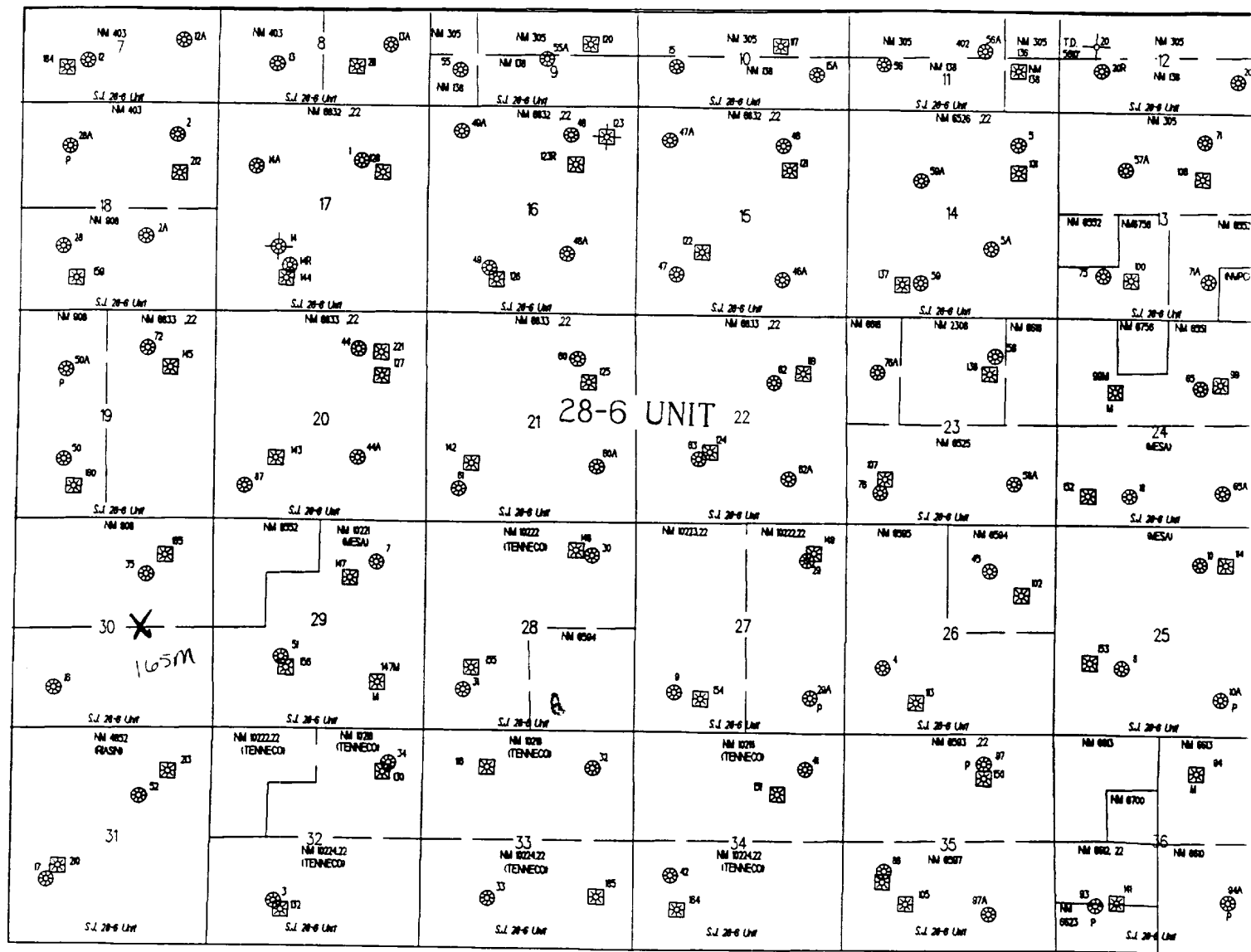
GAS GRAVITY	0.713
COND. OR MISC. (C/M)	C
%N2	0.36
%CO2	0.79
%H2S	0
DIAMETER (IN)	2
DEPTH (FT)	5692
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	652
BOTTOMHOLE PRESSURE (PSIA)	759.0

SAN JUAN 27-5 UNIT #35 MESAVERDE - CURRENT

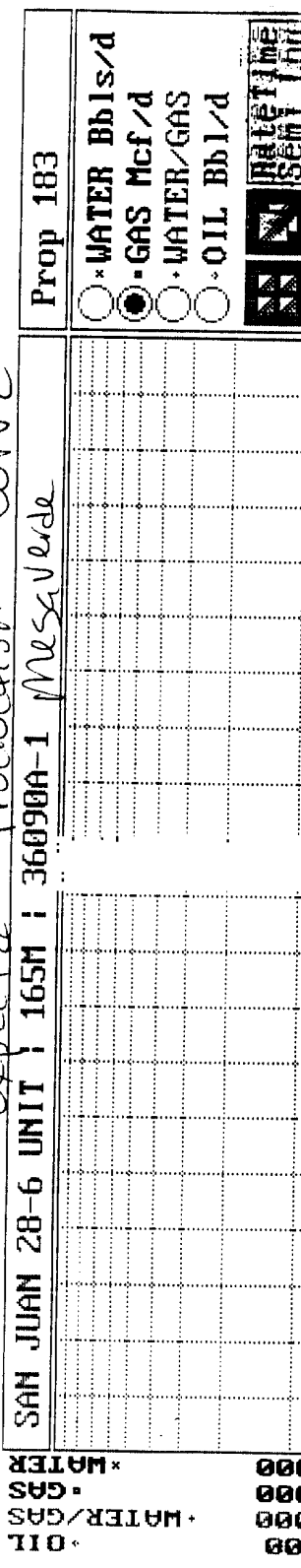
**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

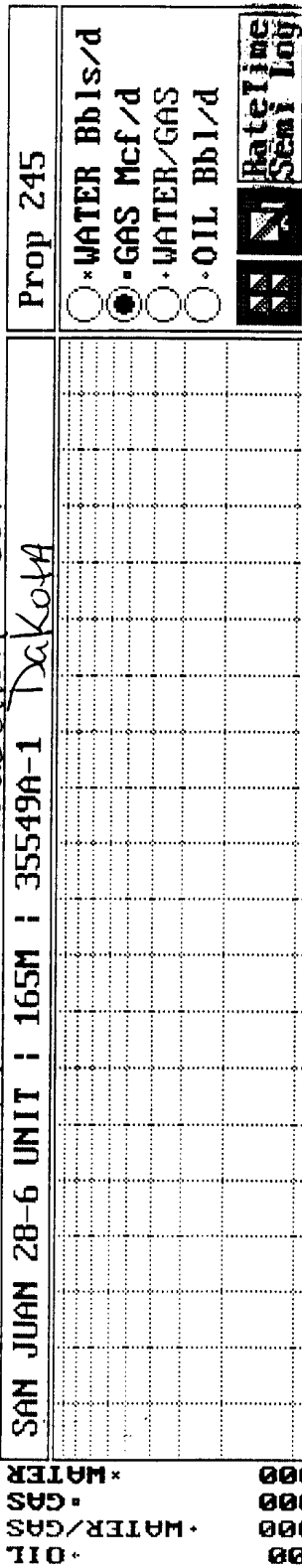
GAS GRAVITY	0.713
COND. OR MISC. (C/M)	C
%N2	0.36
%CO2	0.79
%H2S	0
DIAMETER (IN)	2
DEPTH (FT)	5692
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1086
BOTTOMHOLE PRESSURE (PSIA)	1280.2



# Expected Production Curve



# Expected Production Curve



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. 11628  
ORDER NO. R-10696

APPLICATION OF BURLINGTON RESOURCES  
OIL & GAS COMPANY FOR THE ESTABLISHMENT  
OF A DOWNHOLE COMMINGLING "REFERENCE  
CASE" FOR ITS SAN JUAN 28-6 UNIT PURSUANT  
TO DIVISION RULE 303.E. AND THE ADOPTION  
OF SPECIAL ADMINISTRATIVE RULES THEREFOR,  
SAN JUAN COUNTY, NEW MEXICO..

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. Catanach 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 28-6 Unit, San Juan County, New Mexico.
- (3) Division Rule No. 303.E., amended by Order No. R-10470-A, currently states:

- 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 28-6 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 28-6 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 28-6 Unit:

- a) the structure and thickness of the Dakota and Pictured Cliffs formations are very consistent;
- b) the average recoverable Dakota and Pictured Cliffs gas reserves underlying an undeveloped drill block are approximately 449 MMCFG and 186 MMCFG, respectively;
- c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 254 MCFGD and 216 MCFGD, respectively; and,
- d) the estimated ultimate gas recoveries and initial producing rates from the Dakota and Pictured 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 Pictured Cliffs formations within the San Juan 28-6 Unit should be properly classified as "marginal".

(9) In support of its request to except pressure criteria within the Dakota and Pictured Cliffs formations within the San Juan 28-6 Unit, the applicant presented engineering evidence and testimony which indicates that:

- c) providing notice to each interest owner within the San Juan 28-6 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 28-6 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 28-6 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 28-6 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 28-6 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 28-6 Unit, San Juan County, New Mexico, is hereby approved.