

DATE IN 10/7/97	SUSPENSE 10/27/97	ENGINEER DC	LOGGED KV	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

## NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

### 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]

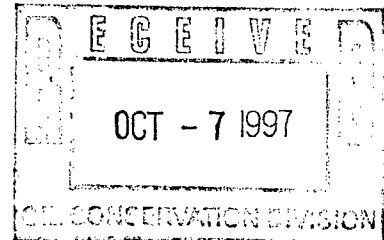
#### [1] TYPE OF APPLICATION - Check Those Which Apply for [A]

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

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement  
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

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



#### [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] ☒ 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 Bradfield

Regulatory/Compliance Administrator

Print or Type Name

Signature

Title

Date

10/3/97

# **BURLINGTON RESOURCES**

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SAN JUAN DIVISION

October 3, 1997

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

Re: San Juan 28-6 Unit #155M  
1010'FNL, 1780'FWL Section 28, T-28-N, R-06-W, Rio Arriba County, NM  
API #30-039-25729

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 is a new drill Mesa Verde/Dakota well for the 1998 Program.

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. Anticipated production curve for the Mesa Verde and Dakota for at least year;
4. Notification list of offset operators - Burlington is the operator of the unit;
5. Shut in wellhead pressure and calculated down hole pressure of surrounding wells;
6. Nine-section plats for the Mesa Verde and Dakota.

Notification of Mesa Verde and Dakota interest owners is covered under Order R-10696 dated November 12, 1996.

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 - Farmington  
NMOCD - Aztec

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

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE

☐ YES ☒ NO

Burlington Resources Oil & Gas Company

PO Box 4289, Farmington, NM 87499

Operator

Address

SAN JUAN 28-6 UNIT

155M

C 28-28N-6W

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. 30-039-25729 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		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	(Current) a. 555 psi (see attachment)	a.	a. 818 psi (see attachment)
Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Original) b. 1288 psi (see attachment)	b.	b. 3109 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1212		BTU 1101
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	Date: n/a Rates:	Date: 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 data and oil/gas/water of recent test (within 60 days)	Date: n/a Rates:	Date: 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: %	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). R-10696
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 Sean Woolverton TITLE Production Engineer DATE 10/02/97

TYPE OR PRINT NAME Sean C. Woolverton TELEPHONE NO. ( 505 ) 326-9700

DD. Artesa, NM 88211-0719  
1000 Mio Brazos Rd., Aztec, NM 87410  
District IV  
PO Box 2088, Santa Fe, NM 87504-2088

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

☐ AMENDED REPC

**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 155M
OGRID No. 14538	Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	Elevation 6361'

**10 Surface Location**

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
C	28	28-N	6-W		1010	North	1780	West	R.A.

**11 Bottom Hole Location If Different From Surface**

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

12 Dedication Acres MV-W/320 OK-W/320	13 Joint or Infill	14 Consideration Code	15 Order No.
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**NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATE  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION**

<p>16</p>	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Peggy Bradfield</i> Signature Peggy Bradfield Printed Name Regulatory Administrator Title 7-3-97 Date</p>
	<p>18 SURVEYOR CERTIFICATION</p> <p>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.</p> <p>6/04/97 Date of Survey Signature and Seal of Professional Surveyor NEALE C. EDWARDS NEW MEXICO 6857 Certification Number</p>

# EXPECTED PRODUCTION CURVE

SAN JUAN 28-6 UNIT : 155M : 36749A-3 Mesaverde

• OIL  
• WATER/GAS  
• GAS  
• WATER

— DAILY RATE  
— TBG PRESSURE

100  
1000  
1000

10  
100  
100

1  
10  
10

1  
1  
1

Major = GAS

97 98 99 00 01 02 03 04 05 06 07

# Expected Production Curve

SAN JUAN 28-6 UNIT - 155M - 36749A-3

Dakota

• OIL  
• WATER/GAS  
• GAS  
• WATER

— DAILY RATE  
— TBG PRESSURE

100  
100  
100  
100

10  
100  
100  
100

1  
10  
10  
10

1  
1  
1  
1

Major = GAS

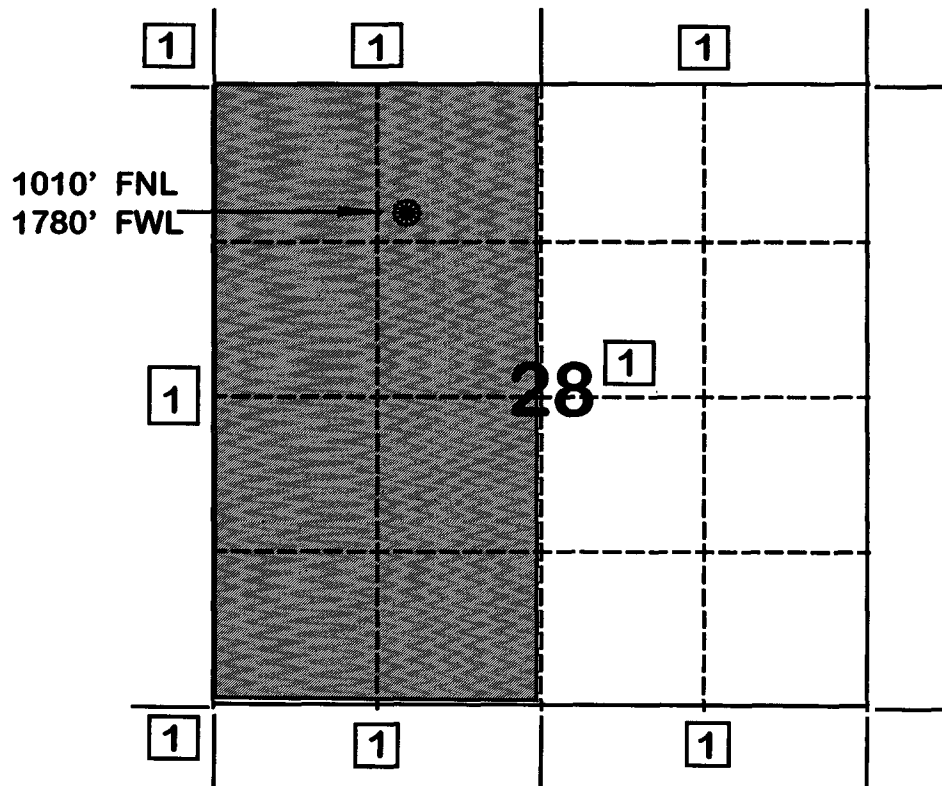
97 98 99 00 01 02 03 04 05 06 07

***BURLINGTON RESOURCES OIL AND GAS COMPANY***

**San Juan 28-6 Unit #155M  
OFFSET OPERATOR \ OWNER PLAT**

**Mesaverde/Dakota Formations Commingle Well**

**Township 28 North, Range 6 West**



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

**SJ 28-6 Unit #155M**

Bottom Hole Pressures  
Flowing and Static BHP  
Cullender and Smith Method  
Version 1.0 3/13/94

<b>Mesaverde</b>		<b>Dakota</b>	
<u><b>MV-Current</b></u>		<u><b>DK-Current</b></u>	
GAS GRAVITY	0.712	GAS GRAVITY	0.645
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.33	%N2	0.18
%CO2	0.84	%CO2	1.29
%H2S	0	%H2S	0
DIAMETER (IN)	2	DIAMETER (IN)	1.5
DEPTH (FT)	5555	DEPTH (FT)	7696
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)	480	SURFACE PRESSURE (PSIA)	687
BOTTOMHOLE PRESSURE (PSIA)	555.1	BOTTOMHOLE PRESSURE (PSIA)	817.6
<u><b>MV-Original</b></u>		<u><b>DK-Original</b></u>	
GAS GRAVITY	0.712	GAS GRAVITY	0.645
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.33	%N2	0.18
%CO2	0.84	%CO2	1.29
%H2S	0	%H2S	0
DIAMETER (IN)	2	DIAMETER (IN)	1.5
DEPTH (FT)	5555	DEPTH (FT)	7696
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)	1094	SURFACE PRESSURE (PSIA)	2566
BOTTOMHOLE PRESSURE (PSIA)	1287.9	BOTTOMHOLE PRESSURE (PSIA)	3108.9



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 Property ID: 4005  
 Property Name: SAN JUAN 28-6 UNIT | 30 | 49404A-1  
 Table Name: K:\ARIES\RR98PDP\TEST.DBF

San Juan 28-6 Unit

#155M

Mesaverde Offset

--DATE-- ---CUM GAS-- M SIWHP  
 MCF Psi

11/21/55	0	1094.0	-original
08/24/56	123000	734.0	
05/24/57	197000	773.0	
05/22/60	238000	741.0	
12/22/61	349000	713.0	
05/29/62	370000	719.0	
05/16/63	428000	700.0	
05/26/64	478000	692.0	
03/25/65	0	0.0	
09/08/65	556000	611.0	
04/12/66	593000	608.0	
03/22/67	651000	599.0	
04/01/68	706000	588.0	
05/25/70	820307	514.0	
05/04/71	873728	493.0	
05/22/72	927416	445.0	
07/31/74	1040334	428.0	
07/12/76	1126294	456.0	
05/15/78	1187870	490.0	
04/18/80	1250745	472.0	
05/18/82	1299729	491.0	
04/07/86	1352052	461.0	
09/19/91	1405360	492.0	
10/21/91	1408579	480.0	-current

Page No.: 6  
Print Time: Tue Aug 19 10:10:38 1997  
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Property Name: SAN JUAN 28-6 UNIT | 148 | 52356A-1  
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San Juan 28-6 Unit

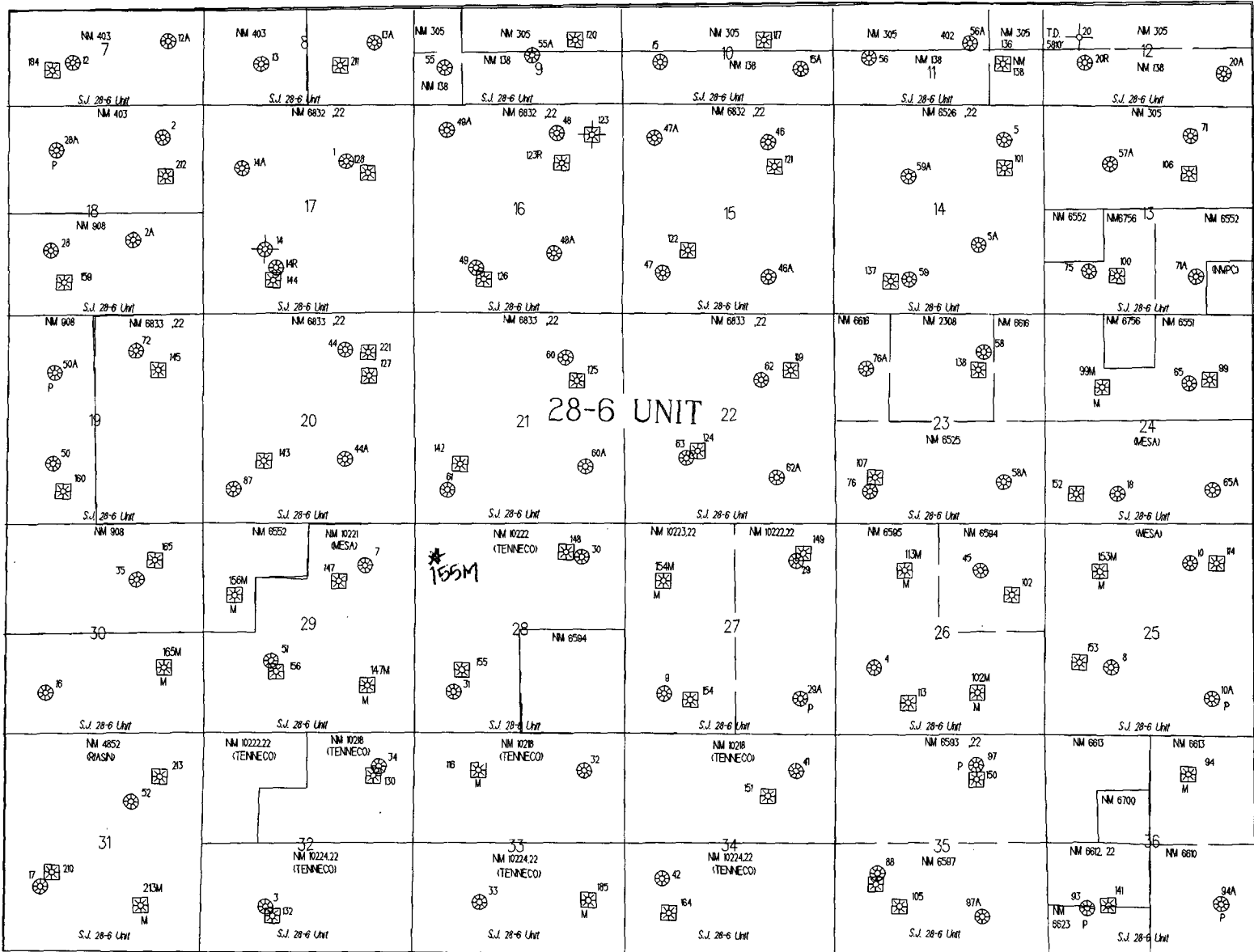
#155 M

Dakota Offset

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

04/29/70	0	2566.0	-original
12/28/70	62751	1485.0	
05/04/71	130161	1088.0	
05/22/72	242200	862.0	
08/21/73	344518	967.0	
06/24/75	480204	695.0	
07/12/76	555153	636.0	
08/08/77	616530	677.0	
10/01/79	737785	654.0	
10/14/81	831202	689.0	
09/22/83	908829	748.0	
11/07/85	989375	768.0	
06/03/90	1147438	822.0	
04/29/92	1231231	687.0	-current

San Juan 28-6 Unit #155M  
Mesaverde / Dakota  
28N-06W-28C



**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.