DATE IN / 2/98	SUSPENSE 6/1/98	ENGINEER DC	LOGGED	TYPE DHC
1 1				

BOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

Date

ADMINISTRATIVE APPLICATION COVERSHEET THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS **Application Acronyms:** [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [DD-Directional Drilling] [SD-Simultaneous Dedication] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] [DHC-Downhole Commingling] [OLM-Off-Lease Measurement] [PC-Pool Commingling] [OLS - Off-Lease Storage] [PMX-Pressure Maintenance Expansion] [WFX-Waterflood Expansion] [IPI-Injection Pressure Increase] [SWD-Salt Water Disposal] [PPR-Positive Production Response] [EOR-Qualified Enhanced Oil Recovery Certification] [1] TYPE OF APPLICATION - Check Those Which Apply for [A Location - Spacing Unit - Directional Drilling [A] □ NSL ☐ NSP \square SD OL CONSERVATION DIVISION Check One Only for [B] and [C] Commingling - Storage - Measurement OLS O □ OLM **M**DHC ☐ PLC ☐ PC ☐ CTB Injection - Disposal - Pressure Increase - Enhanced Oil Recovery \square PMX ☐ PPR ☐ IPI □ EOR □ SWD **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or \Box Does Not Apply [2] [A] ☐ Working, Royalty or Overriding Royalty Interest Owners ſΒΊ ☐ Offset Operators, Leaseholders or Surface Owner Application is One Which Requires Published Legal Notice Notification and/or Concurrent Approval by BLM or SLO D 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 comp	leted by an individual with supervisory capacity.	
Pergy Bradfield	afril &	Regulatory/Compliance Administrator	
Print or Type Name	Signature	Title	

DISTRICT I

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

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION

Form C-107-A

APPROVAL PROCESS:

DISTRICT II

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

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

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

Burlington Resources Oil & Gas Company

APPLICATION FOR DOWNHOLE COMMINGLING

PO Box 4289, Farmington, NM 87499

EXISTING WELLBORE
_x_YES __NO

San Juan 28-5 Unit	9/1E E 1	14-28N-05W	Rio Arriba
ease	Well No. Unit	Ltr Sec - Twp - Rge	County
GRID NO14538 Propert	v Code 7460 API NO.	·	ng Unit Lease Types: (check 1 or more) , 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	Bianco Mesaverde - 72319		Basin Dakota - 71599
Top and Bottom of Pay Section (Perforations)	will be supplied upon completion		8230 - 8338
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	(Current) a. 607 psi (see attachment)	a.	a. 1324 psi (see attachment)
Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Original) b. 1341 psi (see attachment)	b.	b. 2274 psi (see attachment)
6. Oil Gravity (API) or Gas BTU Content	BTU 1173		BTU 1080
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:	Date: 4/97 Rates: 16 MCFD, 0 BOPD, 0 BWPD
Note: For new zones with no production history, applicant shall be required to attach production istimates and supporting data		Nation.	Naces. 10 mor 5, 0 Bor 5, 0 Birry
* If Producing, give data and oil/gas/water 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: %	Oil: Gas: %	Oil: Gas: %
. If allocation formula is based up attachments with supporting data attachments. Are all working, overriding, and roll finot, have all working, overriding Have all offset operators been give			
. Will cross-flow occur? _x \neg production be recovered, and will	Yes No _ If yes, are fluids c Il the allocation formula be reliabl	ompatible, will the formations not exYesNo (If No, atta	be damaged, will any cross-flo
. Are all produced fluids from all co	mmingled zones compatible with	each other?x_YesNo)
3. Will the value of production be de			
. If this well is on, or communitize Land Management has been notifi	d with, state or federal lands, eit ed in writing of this application.	her the Commissioner of Public La _XYes No	ands or the United States Burea
. NMOCD Reference Cases for Rule	303(D) Exceptions: ORDER NO	S)Reference Order _R-10695	attached
i. ATTACHMENTS: * C-102 for each zone to * Production curve for e * For zones with no pro * Data to support allocal * Notification list of worl * Any additional stateme	be commingled showing its space ach zone for at least one year. (If duction history, estimated production method or formula. If set operators. If set operators, and royalty interents, data, or documents required	cing unit and acreage dedication. f not available, attach explanation.) tion rates and supporting data. ests for uncommon interest cases. I to support commingling.	
hereby certify that the informat	tion above is true and compl	ete to the best of my knowled	ge and belief.
IGNATURE Sean Water	TITLE: Pro	duction Engineer I	DATE: <u>04-28-98</u>
YPE OR PRINT NAME Sean V	Moolverton:	TELEPHONE NO (SOE)	126 0700

District I PO Box 1980, Hobbs, NM 88241-1980

District II PO Drawer DD. Artesia, NM 88211-0719

1000 Rio Brazos Rd., Aztec, NM 87410

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

Form C-1 Revised February 21. 19 Instructions on ba

Submit to Appropriate District Off:

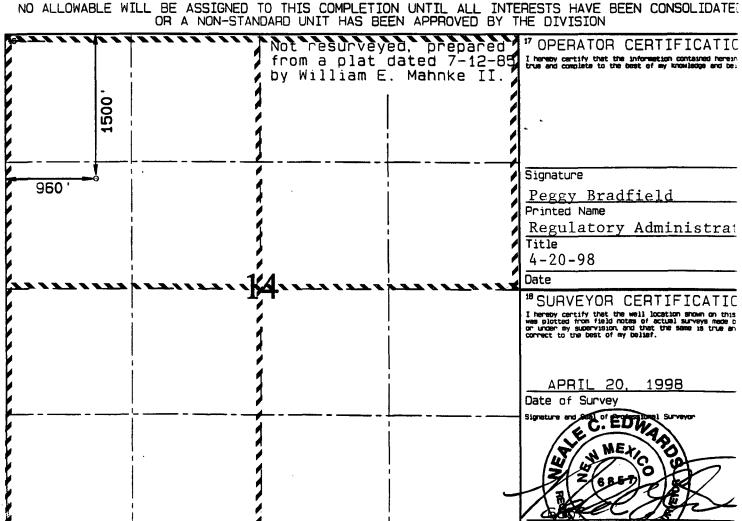
State Lease - 4 Cop: Fee Lease - 3 Cop:

AMENDED REPOF

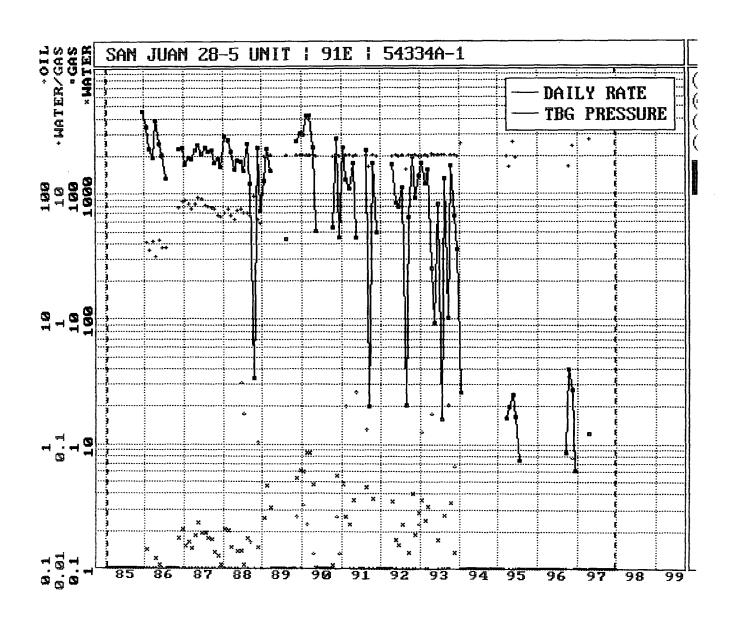
WELL LOCATION AND ACREAGE DEDICATION PLAT 'Pool Name 'API Number Pool Code 30-039-23846 72319/71599 Blanco Mesaverde/Basin Dakota Well Number 'Property Code Property Name SAN JUAN 28-5 UNIT 91E 7460 OGRID No. Elevation *Operator Name 6969 ' BURLINGTON RESOURCES OIL & GAS COMPANY 14538 ¹⁰ Surface Location

UL or lot no. Section TOWNShip Lot Idn Feet from the North/South line Feet from the East/West line RIO Ε 14 28N 5W 1500 NORTH 960 WEST **ARRIB** ¹¹Bottom Hole Location If Different From Surface UL or lot no. Section North/South line Feet from the East/West line County Feet from the MV-N/320 ¹³ Joint or Infill ¹⁴ Consolidation Code 15 Order No. DK-W/320

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



San Juan 28-5 Unit #91E Actual Production Basin Dakota



FARMINGTON 1996 MONTHLY PRODUCTION FOR 54334A PHS030M1

SAN JUAN 28-5 UNIT 91E

12 2 S 10 02

BASIN DAKOTA (PRORATED GAS) FIELD DAKOTA ZONE

DAYS ===== OIL ====== ==== GAS ========== MO T S ON PC PROD ON BTU PRESS WATER PROD C PROD GRV PC 1 2 S 02 01 15.025 2 2 S 02 01 15.025 3 2 S 02 01 15.025 4 2 S 02 01 15.025 5 2 S 02 01 15.025 6 2 S 02 01 15.025 7 2 S 02 01 15.025 8 2 S 02 01 15.025 9 2 S 1 02 01 26 1 1079 15.025 1 10 2 F 17 02 01 121 17 1079 15.025 105 2 11 2 F 24 02 24 01 2 83 24 1079 15.025

PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTION

19 10

15.025

00/00/00 00:00:00:0 PRS 02/05/97

01

FARMINGTON 1997 MONTHLY PRODUCTION FOR 54334A PHS030M1 SAN JUAN 28-5 UNIT 91E

BASIN DAKOTA (PRORATED GAS) FIELD DAKOTA ZONE

1

			DAYS	======	OIL ===	====	=======	=====	GAS	======	======			
MO	Т	s	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C
1	2	S		02			01				15.025			
2	2	s		02			01				15.025			
3	2	S		02			01				15.025			
4	2	s	2	02			01	37	2	1079	15.025		1	
5	2	S		02			01				15.025			
6	2	S		02			01				15.025			
7	2	S		02			01				15.025			
8	2	s		02			01				15.025			
9	2	S		02			01				15.025			
10	2	S		02			01				15.025			
11	2	S		02			01				15.025			
12	2	S		02			01				15.025			

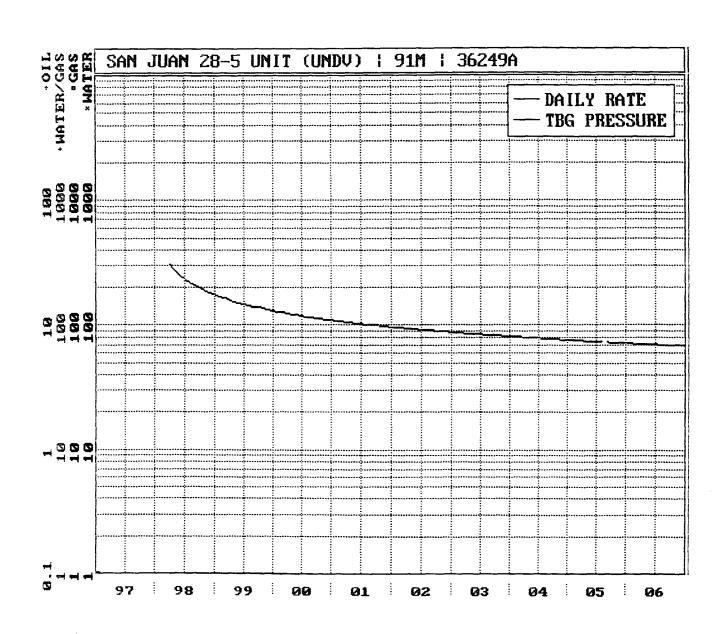
PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0 PRS 02/04/98

San Juan 28-5 Unit #91E Expected Production Curve

Blanco Mesaverde



Page No.: 1

Print Time: Tue Apr 28 09:34:27 1998 Property ID: 3293

Property Name: SAN JUAN 28-5 UNIT | 91E | 54334A-1 Table Name: Q:\PUBLIC\GENTITY\GDPNOS\TEST.DBF

--DATE-- M SIWHP 10/25/85 1862.0 - OVIGANOU 02/03/86 1347.0 02/03/86 1347.0 06/26/86 1275.0 07/01/87 1194.0 08/02/88 1132.0 05/08/90 1221.0

11/02/92 1095.0 - Current

Page No.: 1

Print Time: Tue Apr 28 10:30:14 1998
Property ID: 1593
Property Name: SAN JUAN 28-5 UNIT | 27 | 50029A-1
Table Name: Q:\PUBLIC\GENTITY\GDPNOS\TEST.DBF

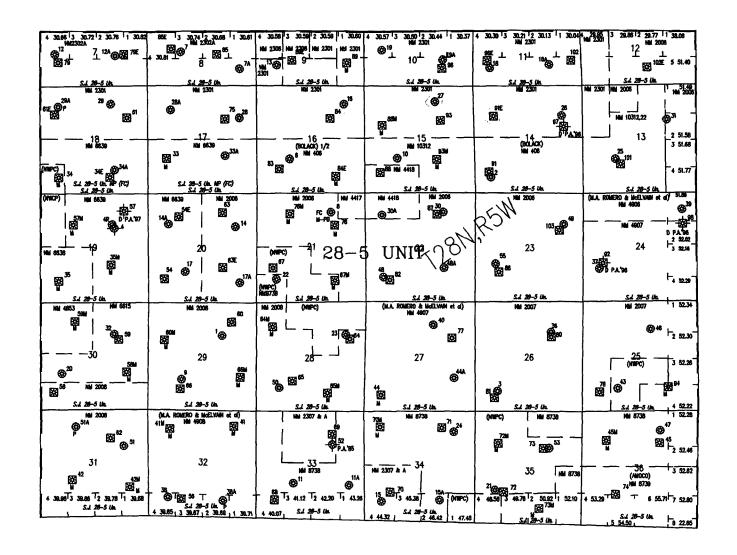
	M SIWHP Psi		552-8-5 Uni #91E
02/13/58 05/21/58 11/06/58 08/06/59 08/14/60 08/13/61 05/08/62 03/27/63 01/24/64 03/01/65 08/19/66 03/07/67 03/01/68 06/19/70 04/27/71 05/15/72 05/09/74 09/02/86 07/30/91 10/23/91 03/29/93	1133.0 740.0 745.0 635.0 621.0 632.0 625.0 619.0 592.0 599.0 682.0 599.0 474.0 467.0 452.0 498.0 590.0	original	Mesaverde
•		0000 = 111	

SJ 28-5 Unit #91E

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

Mesaverde	Dakota
MV-Current	<u>DK-Current</u>
GAS GRAVITY 0.692 COND. OR MISC. (C/M) C %N2 0.13 %CO2 1.27 %H2S 0 DIAMETER (IN) 2 DEPTH (FT) 5926 SURFACE TEMPERATURE (DEG F) 60 BOTTOMHOLE TEMPERATURE (DEG F) 137 FLOWRATE (MCFPD) 0 SURFACE PRESSURE (PSIA) 522 BOTTOMHOLE PRESSURE (PSIA) 607.3	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA) 1095
MV-Original	DK-Original
GAS GRAVITY COND. OR MISC. (C/M) %N2 0.13 %CO2 1.27 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) SURFACE (MCFPD) SURFACE PRESSURE (PSIA) 1340.5	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA) 0.624 0.624 0.83 0.83 0.83 0.83 0.83 0.83 0.83 0.83

San Juan 28-5 Unit #91E Recompletion to add Mesaverde 28N-05W-14D



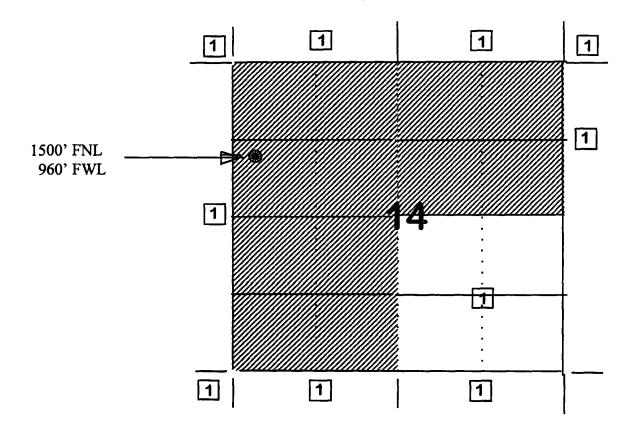
BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 28-5 Unit #91E

OFFSET OPERATOR \ OWNER PLAT

Mesaverde (N/2) / Dakota (W/2) Formations Commingle Well

Township 28 North, Range 5 West



1) Burlington Resources

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. 11627 ORDER NO. R-10695

APPLICATION OF BURLINGTON RESOURCES
OIL & GAS COMPANY FOR THE ESTABLISHMENT
OF A DOWNHOLE COMMINGLING "REFERENCE
CASE" FOR ITS SAN JUAN 28-5 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 28-5 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 28-5 Unit which encompasses some 17,399 acres in Township 28 North, Range 5 West, NMPM, San Juan County, New Mexico.
- (5) Within the San Juan 28-5 Unit, the applicant currently operates sixty-seven (67) Basin-Dakota Gas Pool wells, seventy-one (71) Blanco-Mesaverde Gas Pool wells, sixteen (16) Gobernador-Pictured Cliffs, Oso-Pictured Cliffs and Tapacito-Pictured Cliffs Gas Pool wells, and nineteen (19) 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 28-5 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 28-5 Unit:

- 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 28-5 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 28-5 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 28-5 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 1,258 MMCFG and 77 MMCFG, respectively;
 - c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 276 MCFGD and 136 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 28-5 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 28-5 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 3,149 psi and 1,143 psi, respectively; and,
- b) the average current shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations are approximately 1.059 psi and 714 psi, respectively.
- (10) There is sufficient pressure data available within the San Juan 28-5 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 28-5 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 28-5 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 28-5 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 28-5 Unit every time a Form C-107-A is submitted to the Division. There are a considerable number of such interest owners within the unit;

- c) providing notice to each interest owner within the San Juan 28-5
 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 28-5 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 28-5 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 28-5 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 28-5 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 28-5 Unit, San Juan County, New Mexico. is hereby approved.

- (2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 28-5 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 28-5 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 28-5 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 🖟 LeMAY

Director

S E A L