DATE IN 2/9/	99 SUSPENSE	3/2/99	ENGINEER DC	LOGGED BY	TYPE DHC
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AROVE THIS LINE FOR DIVISION USE ONLY

#### NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -2040 South Pacheco, Santa Fe, NM 87505



222)

### **ADMINISTRATIVE APPLICATION COVERSHEET**

WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE	-
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  ONSL ONSP OD OSD  FEB - 9 1999	
Check One Only for [B] or [C]	
[B] Commingling - Storage - Measurement [St. COMSERVATION DEVISION]	
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	
[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 - Certification	
I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rule	s an
Regulations of the Oil Conservation Division. Further, I assert that the attached application for administration approval is accurate and complete to the best of my knowledge and other applicable and complete to the best of my knowledge and other applicable and complete to the best of my knowledge and other applicable and complete to the best of my knowledge and other applicable and complete to the best of my knowledge and other applicable and complete to the best of my knowledge.	ativ
approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (W ORRI) is common. <i>I understand that any omission of data</i> (including API numbers, pool codes, etc.), period	I, KI inen
information and any required notification is cause to have the application package returned with no action t	<u>ıken</u>
Note: Statement must be completed by an individual with managerial and/or supervisory capacity.	
Degin Shad hull	
Print or Type Name Signature Title Date	

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 New 3-12-96

DISTRICT II

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

2040 S. Pacheco Santa Fe, New Mexico 87505-6429 APPROVAL PROCESS:
\_X\_Administrative \_\_\_Hearing

#### DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

**Burlington Resources Oil & Gas Company** 

APPLICATION FOR DOWNHOLE COMMINGLING

Address

PO Box 4289, Farmington, NM 87499

EXISTING WELLBORE
\_\_YES \_\_x\_NO

San Juan 27-5 Unit		8-27N-05W Init Ltr Sec - Twp - Rge	Rio Arriba		
		Spacin	ng Unit Lease Types: (check 1 or more)		
OGRID NO14538 Property Cod			III.		
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	AARELAANIMA MAKAMEEN 1964 ARELEKE EREKKINNIA IN INIMAMININ MINIMAMININ PORTETER YY (OLONO TYS) 1767 AN YMDIANIN	Basin Dakota - 71599		
Top and Bottom of Pay Section (Perforations)	will be supplied upon complet	ion	will be supplied upon completion		
3. Type of production (Oil or Gas)	gas		gas		
Method of Production     (Flowing or Artificial Lift)	flowing		flowing		
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing:	(Current) a. 788 psi (see attachment) (Original)	a.	a. 1011 psi (see attachment)		
Measured Current All Gas Zones: Estimated or Measured Original	b. 1297 psi (see attachment)	b.	b. 3141 psi (see attachment)		
6. Oil Gravity (API) or Gas BTU Content	BTU 1193		BTU 1089		
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	Date: n/a	Bata	Potential Control		
* If Producing, give data and oil/gas/water water of recent test (within 60 days)	Rates:	Date: Rates:	Date: n/a Rates:		
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		
If allocation formula is based up attachments with supporting data.	pon something other than cu a and/or explaining method an	urrent or past production, or is base and providing rate projections or other r	d upon some other method, submit		
10. Are all working, overriding, and ro If not, have all working, overriding Have all offset operators been give	oyalty interests identical in all og, and royalty interests been need to be a constant of the propose of the pr	commingled zones?  notified by certified mail?  sed downhole commingling?  x_Ye	s _x_No s _x_No sNo		
11. Will cross-flow occur? _x_ Yes No lf yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliablex_ YesNo (If No, attach explanation)					
12. Are all produced fluids from all commingled zones compatible with each other?x_YesNo					
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					
<ol> <li>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 applicationX_Yes No</li> <li>NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S)Reference OrderR-10694 attached</li> </ol>					
16 ATTACUMENTS.		NO(S)Reference OrderR-1069 spacing unit and acreage dedication (If not available, attach explanation.) duction rates and supporting data. nterests for uncommon interest cases. ired to support commingling.			
I hereby certify that the informat	tion above is true and con	nplete to the best of my knowled	ge and belief.		
SIGNATURE:	TITLE: P	Production Engineer DATE: 2	-2-99		
TYPE OR PRINT NAME: Dan	Voecks TELEPHO	ONE NO.: (505) 326-9700			

District I PO'5cx 1980, Hobbs, NM 88241-1980

District II PO Drawer OD, Artesia, NM 88211-0719

District III 1000 Rio Brazos Rd., Aztec, NM 87410

District IV PO 5:x 2088. Santa Fe. NM 87504-2088

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State of New Mexico Energy, Minerals & Natural Resources Department

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

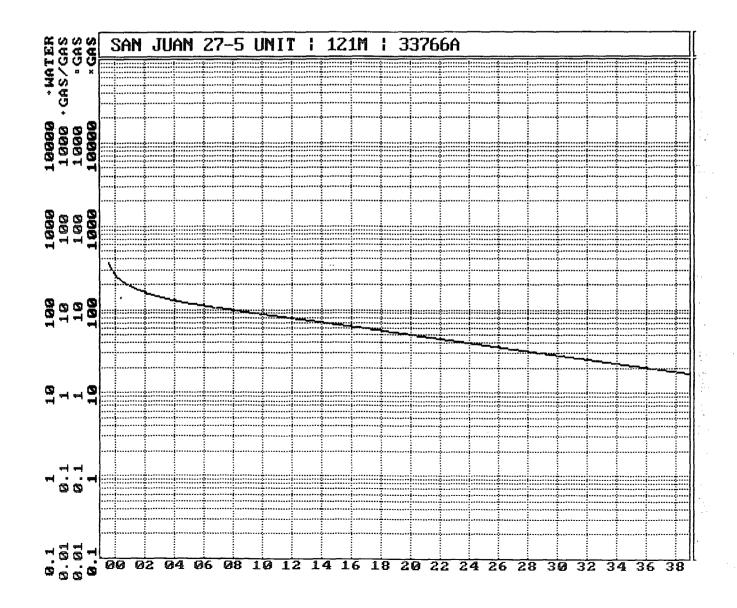
Form C-102 Revised February 21, 1994 Instructions on back Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

AMENDED REPORT

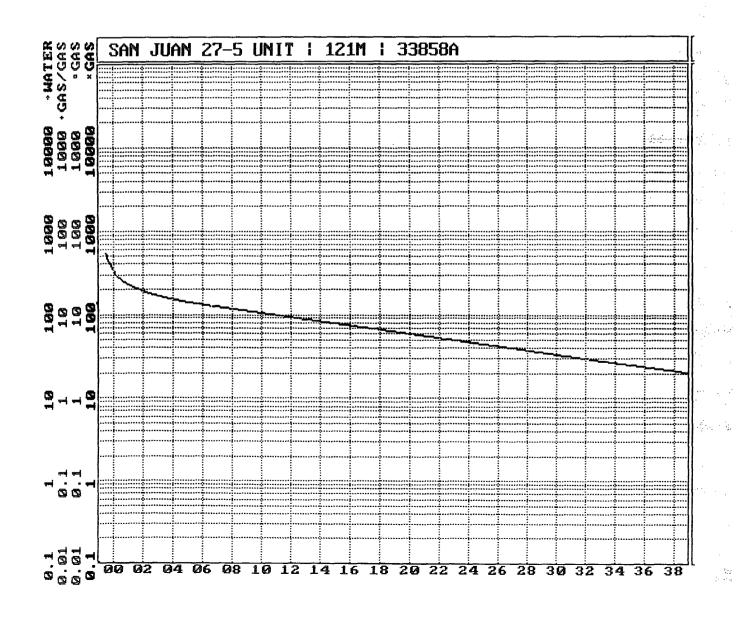
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7454		SAN JUAN 27-5 UNIT				121M .						
14538	No.		BURLI	NGTON	*Opera RESOURC		Name OIL & GAS	СО	MPANY			levation 6461'
					<sup>10</sup> Surfac	e L	ocation					
UL 37 lot no.	Section 28	Township 27N	Range 5W	Lat Ion	Feet from the 805	18	NORTH	1	t from the 840		ST	COUNTY RIO ARRIBA
	1 - 2 7		Bottom	Hole L	ocation	Ιf	0 21 101 01 0		m Surf			
. UL or lot no.	Section	Township	Range	Lot Idn	Feet from ti	he	North/South line	ree	t from the	East/M	est line	County
MV-W/29 DK-W/29	5.73 5.73	<sup>13</sup> Joint or In	fill <sup>14</sup> Cons	olidation Code	<sup>25</sup> Order No.	l		<u> </u>				
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2667								2573	/,	SIN	MET	8

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# San Juan 27-5 Unit #121M Expected Production Curve Mesaverde Formation



# San Juan 27-5 Unit #121M Expected Production Curve Dakota Formation



#### San Juan 27-5 Unit #121M

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

Mesaverde	Dakota				
MV-Current	DK-Current				
GAS GRAVITY COND. OR MISC. (C/M)  %N2  %CO2  %CO2  %H2S  DIAMETER (IN)  DEPTH (FT)  SURFACE TEMPERATURE (DEG F)  BOTTOMHOLE TEMPERATURE (DEG F)  FLOWRATE (MCFPD)  SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  COMMOND  0.699  0.699  0.899  0	GAS GRAVITY COND. OR MISC. (C/M)  %N2  0.16  %CO2  1.31  %H2S  DIAMETER (IN)  DEPTH (FT)  SURFACE TEMPERATURE (DEG F)  BOTTOMHOLE TEMPERATURE (DEG F)  FLOWRATE (MCFPD)  SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  1011.3				
MV-Original	DK-Original				
GAS GRAVITY  COND. OR MISC. (C/M)  %N2  %CO2  %CO2  %H2S  DIAMETER (IN)  DEPTH (FT)  SURFACE TEMPERATURE (DEG F)  BOTTOMHOLE TEMPERATURE (DEG F)  SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  10.699  0.899  0.89  0.	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 1.31 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  0.637 C C C C C C C C C C C C C C C C C C C				

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## San Juan 27-5 Unit #121M

Mesaverde Offset

Page No.: 1

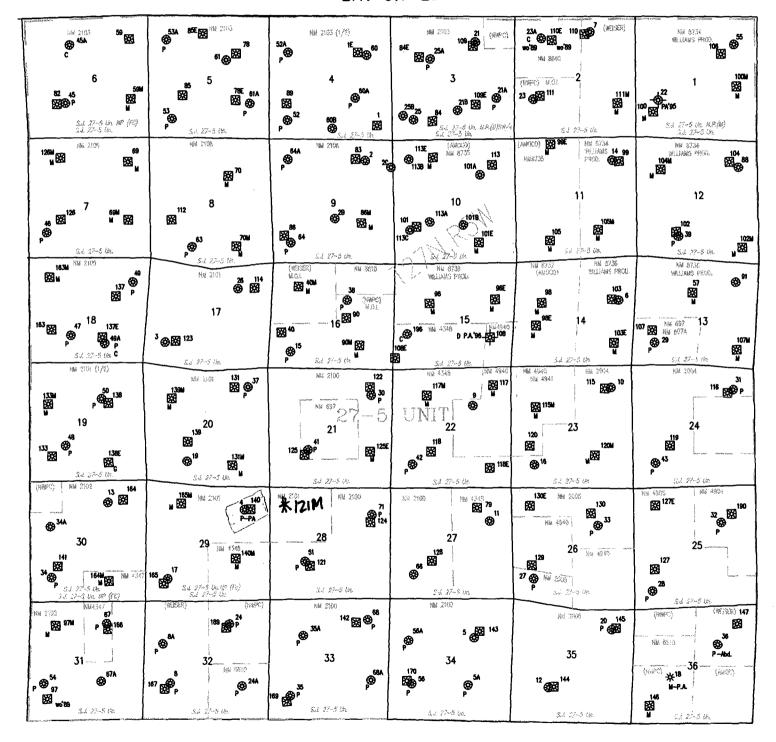
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Property ID: 1366
Property Name: SAN JUAN 27-5 UNIT | 140 | 44048A-1 Table Name: Q:\PUBLIC\GENTITY\GDPNOS\TEST.DBF

DATECUM_	GAS M SIV	
07/19/73 1 06/04/74 2 05/22/75 3 07/06/77 4 09/20/79 6 05/04/81 7 09/13/83 8 06/04/85 9 06/28/88 10 05/29/90 11	0 2605 34416 1785 27619 1339 221455 1072 802983 762 815838 882 722859 873 839759 1053 827461 853 971674 975 274204 975	San Juan 27-5 Unit #121M  Dakota Offset  Dakota Offset

## San Juan 27-5 Unit #121M

### Blanco Mesaverde / Basin Dakota

27N - 5W - 28



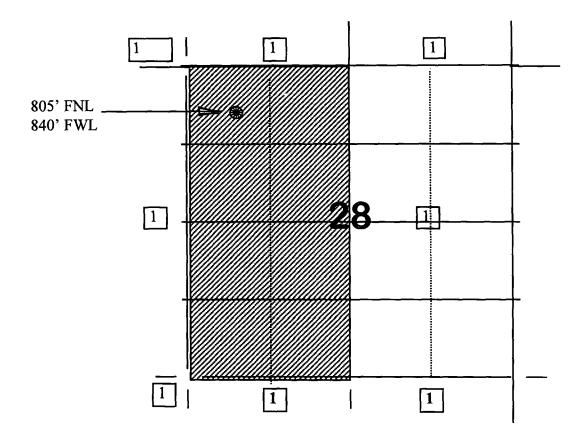
#### **BURLINGTON RESOURCES OIL AND GAS COMPANY**

#### San Juan 27-5 Unit #121M

#### **OFFSET OPERATOR/OWNER PLAT**

# Mesaverde & Dakota Formations Commingle well

Township 27 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. 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.

PIO 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. 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 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 commingie (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:

- 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 commungling of existing or future drilled wells within the San Juan 27-5 Unit without additional nonce 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 Pictured Cliffs formations are very consistent:
  - b) the average recoverable Dakota and Pictured 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 Pictured 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 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 27-5 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 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 unitzed 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 weilbore 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 commingtings 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 compiled 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 downnote comminging approvals within the San Juan 27-5 Unit, and will not violate correlative rights.

#### IT IS THEREFORE ORDERED THAT:

(1) The application of Burington 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 downhold 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.

- (2) Upon filing of Division Form No. C-107-A's for weils subsequently downhole communised within the San Juan 27-5 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictures Cliffs and Dakota formations as "marginai", supporting data to verify the Pictures 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 downince commingie weils 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 comminging.
- (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 I/ LEMAY

Director