DISTRICT I

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

DISTRICT II

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

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

SIGNATURE

TYPE OR PRINT NAME

L. Tom Loveland

State of New Mexico Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

APPLICATION FOR DOWNHOLE COMMINGLING

2040 S. Pacheco Santa Fe, New Mexico 87505-6429 Form C-107-A New 3-12-96

APPROVAL PROCESS :

X Administrative Hearing

EXISTING WELLBORE

X_YES __NO

PO Box 4289, Farmington, NM 87499 **Burlington Resources Oil and Gas** Operator C-30-28N-05W Rio Arriba #59M San Juan 28-5 Unit County Well No. Unit Ltr. - Sec - Twp - Rge 1 Spacing Unit Lease Types: (check 1 or more) API NO. _30-039- 22616_ Federal __x_ X__ , State OGRID NO. 14538 Property Code 7460 The following facts are submitted in support of downhole commingling: Intermediate Zone Upper ALC: Basin Dakota - 71599 Blanco Mesaverde - 72399 1. Pool Name and Pool Code 7604'-7804' 5090'-5958' 2. Top and Bottom of Pay Section (Perforations) 3. Type of production (Oil or Gas) Gas Flowing 4. Method of Production (Flowing or Artificial Lift) Flowing (Current) a. 495 psi (see attachment) a. 334 psi (see attachment) 5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current (Original) b. 721 psi (see attachment) b. 2387 psi (see attachment) All Gas Zones: Estimated or Measured Original BTU 1057 6. Oil Gravity (°API) or Gas BTU Content **BTU 1214** Producina 7. Producing or Shut-In? **Producing** Yes Production Marginal? (yes or no) No Date: N/A If Shut-In and oil/gas/water rates of last production Date: N/A Rates Rates. Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data Date: 6/18/98 * If Producing, give data and oil/gas/water water of recent test (within 60 days) Date: 6/18/98 Rates: 167 mcfd 0.0 bopd Rates: 227 mcfd 1.2 bopd 8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%) Will be supplied upon completion. Will be supplied upon completion 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. __Yes <u>X_</u>No __Yes _X_No _X_Yes __No 10. Are all working, overriding, and royalty interests identical in all commingled zones? If not, have all working, overriding, and royalty interests been notified by certified mail? Have all offset operators been given written notice of the proposed downhole commingling? 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) 11. Will cross-flow occur? 12. Are all produced fluids from all commingled zones compatible with each other? _X_ Yes _ (If Yes, attach explanation) 13. Will the value of production be decreased by commingling? $\underline{\hspace{1cm}}$ Yes $\underline{\hspace{1cm}}$ No 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. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10695 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.

TITLE Production Engineer DATE 6/23/98

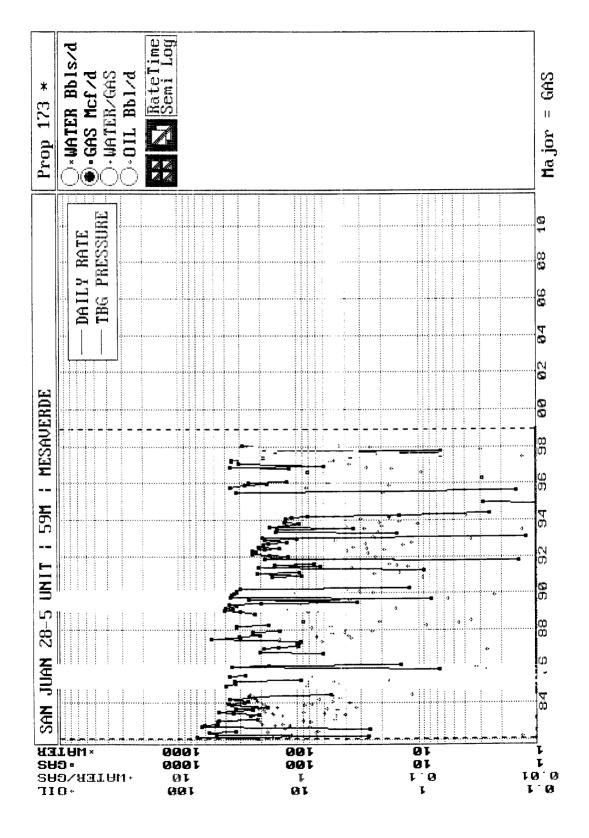
_TELEPHONE NO. (<u>505</u>) <u>326-9700</u>

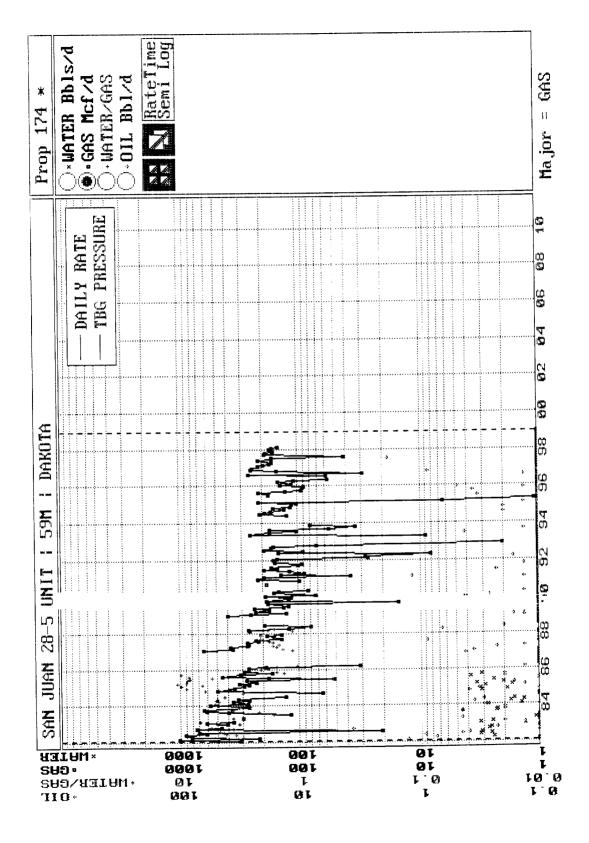
P. O. UOX 2088 HERGY NO MINERALS DEPARTMENT ANTA FE, NEW MEXICO 87501

Form C-107 kerlsed 10-

All distances must be from the cuter houndaries of the Section.

Operator			Legae			Well No.		
EL PASO NAT	TURAL GAS COM!	PANY	SAN JUAN 28	-5 UNIT (SF-	080505)	59H		
Unit Letter	Section	Township	Range	County				
С	30	23N	5W	Rio Ar	Arriba			
Actual Footage Loc	ction of well:							
1000	feet from the NO	rth line and	1690	feet from the W	est	line		
Ground Level Elev:	Producing For	motion	P∞1 BLANCO	MESA VERDE	Dedic	aled Acreage:		
6582	Mesa Ve	rde-Dakota		F DAKOTA	320.	00 & 320.00 Acres		
2. If more th	an one lease is	ited to the subject w	•		_	it below. I (both as to working		
3. If more the dated by c	ommunitization, t	lifferent ownership is unitization, force-pool nswer is "yes," type	ing. etc?	Unit	ization	· · · · · · · · · · · · · · · · · · ·		
this form i No allowai	f necessary.) ole will be assign	ed to the well until a or until a non-standa	ll interests have be	en consolidated	(by communi has been appi	tization, unitization,		
,		k!		***************************************	CE	RTIFICATION		
1690'	1000	<u>-</u>	SF-079472	TOL	best of my know	that the information construction construction complete to the wledge and belief. Buscu Clerk		
5.	1 F-080505	π	32 Oo		El Paso	Natural Gas Cc		
	1	ec.	#59 	- IXL	November	12, 1980		
1	 	<u> </u>	, , , , , , , , , , , , , , , , , , , 	The second				
<u> </u>	RECEIV!			MEP	shown on this p notes of actua under my super	fy that the well location olds was plotted from field is surveys made by me or wision, and that the same orrect to the best of my belief.		
	1 100)	September Septem	19, 1930		
-	Sca	le: l"=1000;			3950			





San Juan 28-5 Unit #59M Bottom Hole Pressures Flowing and Static BHP

Cullender and Smith Method

Version 1.0 1/14/98

Mesaverde	Dakota				
MV-Current	<u>DK-Current</u>				
GAS GRAVITY 0.706 COND. OR MISC. (C/M) C %N2 0.25 %CO2 0.84 %H2S 0 DIAMETER (IN) 7 DEPTH (FT) 5524 SURFACE TEMPERATURE (DEG F) 60 BOTTOMHOLE TEMPERATURE (DEG F) 143 FLOWRATE (MCFPD) 0 SURFACE PRESSURE (PSIA) 430 BOTTOMHOLE PRESSURE (PSIA) 495.1	GAS GRAVITY 0.616 COND. OR MISC. (C/M) C %N2 0.15 %CO2 1.21 %H2S 0 DIAMETER (IN) 2.375 DEPTH (FT) 7704 SURFACE TEMPERATURE (DEG F) 60 BOTTOMHOLE TEMPERATURE (DEG F) 175 FLOWRATE (MCFPD) 0 SURFACE PRESSURE (PSIA) 284 BOTTOMHOLE PRESSURE (PSIA) 333.5				
MV-Original	DK-Original				
GAS GRAVITY 0.706 COND. OR MISC. (C/M) C %N2 0.25 %CO2 0.84 %H2S 0 DIAMETER (IN) 7 DEPTH (FT) 5524 SURFACE TEMPERATURE (DEG F) 60 BOTTOMHOLE TEMPERATURE (DEG F) 143 FLOWRATE (MCFPD) 0 SURFACE PRESSURE (PSIA) 623 BOTTOMHOLE PRESSURE (PSIA) 720.9	GAS GRAVITY 0.616 COND. OR MISC. (C/M) C %N2 0.15 %CO2 1.21 %H2S 0 DIAMETER (IN) 2.375 DEPTH (FT) 7704 SURFACE TEMPERATURE (DEG F) 60 BOTTOMHOLE TEMPERATURE (DEG F) 175 FLOWRATE (MCFPD) 0 SURFACE PRESSURE (PSIA) 1978 BOTTOMHOLE PRESSURE (PSIA) 2387.4				

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   Print Time: Fri May 08 08:28:40 1998
  Property ID: 173
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   Table Name: S:\ARIES\78LTL\TEST.DBF
--DATE-- --CUM OIL- ---CUM GAS-- M SIWHP
                         Mcf
             Bbl
                                   Psi
                                   623.0 Original
11/11/81
11/18/81
                                   622.0
03/04/82
                            28555
                                   665.0
09/19/83
                          213764
                                  486.0
                          283884
                                  447.0
05/01/84
                                  581.0
10/20/86
                          375768
09/18/89
                          573056
                                  362.0
                          648551
                                  470.0
01/24/91
                                  482.0
08/26/91
                          671520
                          764119
                                   462.0
07/05/93
                                   430.0 Current Estimated from P/2 data
04/01/98
                          932963
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Page No.: 14
   Print Time: Fri May 08 08:28:40 1998
  Property ID: 174
Property Name: SAN JUAN 28-5 UNIT | 59M
                                           DAKOTA
   Table Name: S:\ARIES\78LTL\TEST.DBF
--DATE-- --CUM OIL- ---CUM GAS-- M SIWHP
                         Mcf
             Bbl
                                    Psi
                                 1978.0 Original
11/11/81
03/04/82
                            47673
                                   1120.0
09/19/83
                           262274
                                    611.0
11/01/84
                           385862
                                    612.0
11/18/85
                           483650
                                    593.0
11/09/88
                           634868
                                    584.0
04/22/90
                           722677
                                    612.0
05/28/92
                           800657
                                    718.0
05/24/93
                           834299
                                    638.0
                          1044898
                                    284.0
                                           Current Estimated Com P/z data
```

Package Preparation Volume Data

DPNO: 53424A SAN JUAN 28-5 UNIT. 59M 59M

Supt: 60

KEN RAYBON

FF: 335 LARY BYARS

MS: 319 STEVE BAIRD

Pipeline: WFS

Plunger: No

Dual: Yes

Compressor:

No

Ownership (No Trust)				Pr	ior Year		Curr		
<u>Ga</u> G WI: 73.16	_	<u>Oil</u> .1659%		MCF/M	ворм	<u>Days</u> <u>On</u>	MCF/M	ворм	<u>Days</u> <u>On</u>
GNI: 62.35		.3562%	Jan	9,399	114.0	18.2	8,771	157.0	31
			Feb	0	0.0	0	6,736	83.0	28
Volumes			Mar	10,810	162.0	11.5	7,128	17.0	31
(Days On)	MCFD	BOPD	Apr	10,919	153.0	30	6,816	94.0	30
7 Day Avg	239	13.2	May	5,792	0.0	24.5	0	0.0	28.9
30 Day Avg	244	1.3	Jun	1.007	4.0	21	0	0.0	0
60 Day Avg	235	2.2	Jul	0	67.0	31	0	0.0	0
3 Mo Avg	232	2.2	Aug	0	0.0	31	0	0.0	0
6 Mo Avg	231	2.4	Sept	4,523	36.0	26.2	0	0.0	0
12 MoAvg	154	1.6	Oct	0	0.0	31	0	0.0	0
			Nov	5,666	9.0	30	0	0.0	0
<u>Volumes</u>			Dec	6,712	76.0	31	0	0.0	0
(Days in Month)	MCFD	BOPD	Total	54,828	621.0		29,451	351.0	
30 Day Avg	227	1.2	1 Otal	34,020			20,40		
60 Day Avg	227	2.2						7-675	
3 Mo Avg	232	2.2					PIN	it Form	
6 Mo Avg	229	2.4						mines	
12 Mo Avg	146	1.5					SEXII VO	JUILIUS L	ala

Package Preparation Volume Data

DPNo: 53424B SAN JUAN 28-5 UNIT 59M

Form: DK

Supt: 60

KEN RAYBON

FF: 335 LARY BYARS

MS: 319 STEVE BAIRD

Pipeline: WFS

Plunger: No

Dual: Yes

Compressor:

No

<u>o</u>	wnership (No	<u>Prior Year</u>			Current Year				
	Gas	Oil				<u>Days</u> On	1405/14	BODM	<u>Days</u> <u>On</u>
GWI:	69.6124%	69.6124%		MCF/M	<u>BOPM</u>		MCF/M	<u>BOPM</u>	
GNI:	58. 896 0%	58. 8960 %	Jan	6,532	0.0	31	4,991	0.0	31
			Feb	5,929	1.0	28	4,399	0.0	28
V <u>olumes</u>			Mar	5,261	0.0	31	4,810	0.0	31
(Days On)	MCF	D BOPD	Apr	4,991	0.0	30	5,744	0.0	30
7 Day Avg	14	5 0.0	May	6,431	0.0	29.1	0	0.0	28.9
30 Day Av	g 18	0 0.0	Jun	4,913	0.0	30	0	0.0	0
60 Day Av	g 18	6 0.0	Jul	4,905	56.0	31	0	0.0	0
3 Mo Avg	16	8 0.0	Aug	1,120	0.0	31	0	0.0	0
6 Mo Avg	16	6 0.0	Sept	5,817	0.0	24.2	0	0.0	0
12 MoAvg	16	5 0.2	Oct	5,621	0.0	31	0	0.0	0
			Nov	4,881	0.0	30	0	0.0	0
Volumes			Dec	5,187	0.0	31	0	0.0	0
(Days in N	lonth) MCF	D BOPD	Total	61,588	57.0		19,944	0.0	
30 Day Av	g 16	7 0.0	Total	01,500	J		10,011	0.0	
60 Day Av	g 17	9 0.0							1
3 Mo Avg	16	8 0.0					<u> </u>	nt Form	1
6 Mo Avg	16	0.0						- exposure of a	
12 Mo Avg	16	1 0.2					Exit Vo	lumes C	Jata -

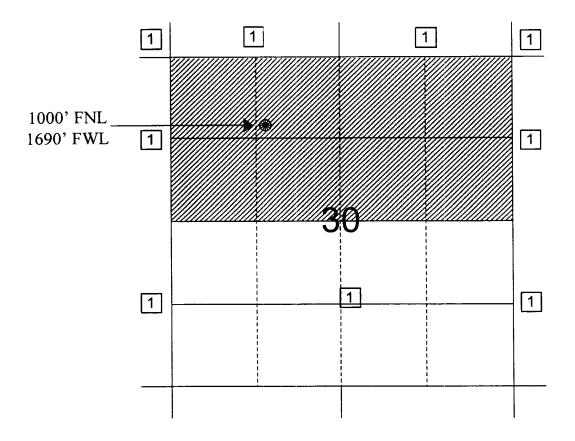
6/19/98

BURLINGTON RESOURCES OIL AND GAS COMPANY San Juan 28-5 Unit #59M

Offset Operator/Owner Plat

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

Township 28 North, Range 5 West



1) Burlington Resources

	57 100 ❤ ⊠	71A ❤	34 図	34A 34E ⊜ ⊠			
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58A �	24 152 18 × 🐯	65A ₩	35 23	19	54 ×	20 ® 17	63E ⊠
45 \$\pi 102		10 30 ♥ ⊠ 114	28−5 8 8	Unit 59M 32 8 59			1
	153 25 ⊠ _® 8	10A	20 \$ 58 図	30	9	29 866	
97 8 8		94	51I				
	36	94A 	4 <u>4</u> 2	31		32	

PLH 5/7/98

SJ 28-5 Unit 59M Sec. 30, T28N, R5W Mesaverde/Dakota

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 23-5 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 J. LeMAY

Director

S E A L