DISTRICT I

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

DISTRICT II

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

DISTRICT III

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:

X Administrative ___Hearing

EXISTING WELLBORE

APPLICATION FOR DOWNHOLE COMMINGLING 1000 Rio Brazos Rd, Aztec, NM 87410-1693 __YES _xNO **Burlington Resources Oil & Gas Company** PO Box 4289, Farmington, NM 87499 Address **SAN JUAN 29-7 UNIT** J 27--29N-7W Rio Arriba Lease Well No. Unit Ltr. - Sec - Twp - Rge County Spacing Unit Lease Types: (check 1 or more) OGRID NO. _14538_____ Property Code __7465_____ API NO_N / A__Federal _X___ , State _ _(and/or)Fee _ The following facts are submitted in support of downhole commingling: Intermediate Zone Upper Zone 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 - 3 1937 4. Method of Production (Flowing or Artificial Lift) flowing flowing COM. DIV 5. Bottomhole Pressure (Current) a. 637 psi (see attachment) a. 905psi (see attachment) a. Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current (Original) b. 1248 psi (see attachment) b. b. 3157 psi (see attachment) All Gas Zones: Estimated or Measured Original 6. Oil Gravity (°API) or Gas BTU Content **BTII 1046** RTII 1169 7. Producing or Shut-In? shut-in shut-in Production Marginal? (yes or no) ves no * If Shut-In and oil/gas/water rates of last production Date: n/a Date: Date: n/a Datas Quine: Detec Note: For new zones with no production history, applicant shall be required to attach production setting testing description descriptions. Date: n/a Date: n/a If Producing, give data and il/gas/water water of recent test Date: oil/gas/water wa (within 60 days) Rates: Rates: Rates: Gas: Gas: 8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%) Oil: Oil: Oil: 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. 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? ___Yes __x__No __Yes __x__No _x_Yes ___No 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 _ 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 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-10697_ 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 ___05/27/97_

reston

TYPE OR PRINT NAME __Sean C. Woolverton____ TELEPHONE NO. (505) 326-9700

SIGNATURE /

District 4 PO Box 1980, Hobbs, NM 88241-1980 District II PO Drawer OD, Artena, NM 88211-0719 District III 1000 Rio Bruzos Rd., Aziec. NM 87410 District IV

State of New Mexico Energy, Minerals & Natural Resources Department

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

Form C. Revised February 21. : instructions on t

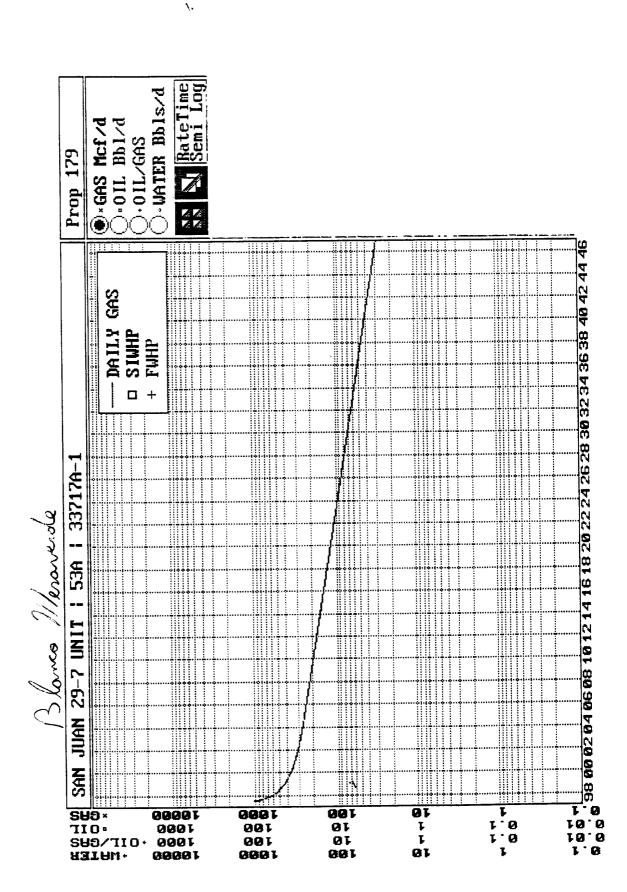
Submit to Appropriate District O: State Lease - - Co

Fee Lease - 3 Co

API Number Pool Code Pool Name) Box 2088. Sai	na Pe. AM		LL LO	CATIO	N AND	ACR	EAGE DEDI	CATION PL	_	ENDED REPO
Property Code 7465 San Juan 29-7 Unit 53A OGRID No. 14538 BURLINGTON RESOURCES OIL & GAS COMPANY 6822* 10 Surface Location UL or lot so. Section 7 27 29-N 7-W 1720 South 1770 East R.A. 11 Bottom Hole Location if Different From Surface UL or for an Section Township Range Lat Ida Fen from the North/Secta line Fen from the Endowent Line Centery 1 27 29-N 7-W 1720 South 1770 East R.A. 11 Bottom Hole Location if Different From Surface UL or for an Section Township Range Lat Ida Fen from the North/Secta line Fen from the Endowent Line 10 Centery 10 Centery 10 Centery 10 Centery 10 Centery 10 Centery 11 Centery 12 Centery 13 Centery 13 Centery 14 Centery 15 Centery 16 Centery 17 Centery 18 Centery 19 Centery 1		API Numbe		Ī			1				
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RateTime Semi Log J-WATER Bbls/d ●×GAS Mcf/d).OIL Bb1/d)-OIL/GAS **Prop 257** 46 98 00 02 04 06 08 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 GAS DAILY SIWHP FWHP **-** + ***** * 34536A-1 SAN JUAN 29-7 UNIT | 53A | Barin Jahota ****** * I * * * · i01.10.1.0 N 1 0 1 0 101 1000 10000 SHO × 100 OIT: 1000 400 91 1000 400 91 ·OIT/GUS 4000 00 I • MULEH

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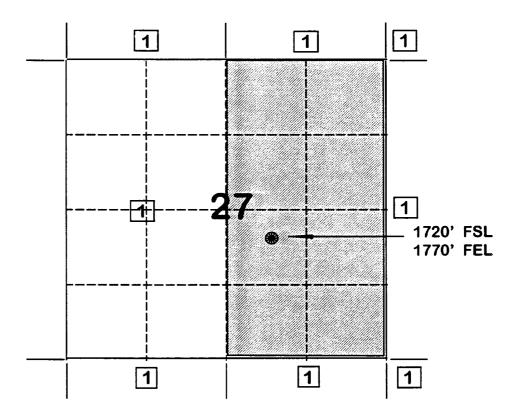


BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 29-7 Unit #53A OFFSET OPERATOR \ OWNER PLAT

Mesaverde/Dakota Formations Commingle Well

Township 29 North, Range 7 West



1) Burlington Resources Oil and Gas Company

FUNCTION (A,C,D,I) i ** DATA AT TEST PRESSURE UNLESS NOTED ** MP NUMBER 95441 SAN JUAN 29-7 UNIT EFFECTIVE DATE 19960701 REGION CD 42 SAN JUAN
MP TYPE CODE 10 GAS METER - WELLHEAD SALES -----SAMPLE TYPE CODE (GAS, LIQ, BTU) GAS ----- BTU/CF -----SAMPLE DATE --- (AT 14.73 PSIG) --19951102 SAMPLE LINE PRESSURE (PSIG) WET 1046.484 DRY 1065.000 SAMPLE LINE TEMPERATURE (DEG F) TEST PRESSURE (PSIG)
TEST TEMPERATURE (DEG F)
TEST LIFE (MONTHS)

TESTER CONTROL

----- BTU/CF ----BTU/CF ----BTU/CF ----WET _1046.484 DRY _1065.000
VAPOR FACTOR TEST LIFE (MONTHS)

TESTER SOURCE BA NUMBER

098795 EL PASO FIELD SERVICES TEST PURPOSE CODE -----03=DETAIL SCR 04=MP-NM BRWS 06=MP/DS LST 07=MP/WN LST 11=PREV SCR 12=MAIN MENU 20=NEXT REC 21=REFRESH SCR 22=PREV MENU 24=HELP MY JOB PA1=TERMINATE B MY JOB LU #3 OPR008M2 S001 0008 CHROMATOGRAPH GAS SAMPLE DETAIL 20:05:08.6 05/20/9 GPM ** DATA AT 14.730 PSIG UNLESS NOTED ** MOL % (AT 14.73) HYDROGEN MP NUMBER 95441 EFFECTIVE DATE 19960701 HELIUM 0.11 NITROGEN -- GASOLINE CONTENT (GPM) --26/70 GASOLINE $\frac{-92.75}{}$ PROPANE METHANE

 METHANE
 92.75

 ETHANE
 4.02
 1.0754

 PROPANE
 0.79
 0.2177

 ISO-BUTANE
 0.24
 0.0785

 N-BUTANE
 0.16
 0.0504

 ISO-PENTANE
 0.12
 0.0439

 N-PENTANE
 0.05
 0.0181

 HEXANE

 100% EXCESS BUTANES \mathtt{TOTAL} ---- SPECIFIC GRAVITY ----CALCULATED _0.6120 MEASURED HEXANE 0.25 0.1091 HEXANE PLUS HEPTANE PLUS SULPHER GRAINS / 100 CU FT 1.5931 TOTALS 03=MAIN SCREEN 24=HELP PA1=TERMINATE B MY JOB NUM LU #3

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В	03=MAIN SCRE	EN NUM	LU #3	24=HELP PA1=TERMINATE	

San Juan 29-7 Unit #53A 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 COND. OR MISC. (C/M) %N2 0.17 %CO2 1.06 %H2S 0.00 DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA) 636.9	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)	0.612 C 0.11 1.51 0.00 2.375 7997 60 196 0 762		
MV-Original	<u>DK-Original</u>	· · · · · · · · · · · · · · · · · · ·		
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Page No.: 1
Print Time: Tue May 20 10:17:46 1997
Property ID: 2096
Property Name: SAN JUAN 29-7 UNIT | 128 | 1474-1
Table Name: K:\ARIES\RR98PDP\TEST.DBF

DATE	CUM_GAS	M SIWHP	
09/20/85 12/09/85 10/04/86 11/23/87 10/10/88 07/31/90 05/28/92	0 45737 76784 156265 199995 265515 329433	2621.0 <	,
11/02/92	350683	762.0	- current

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MV Page No.: 1
Print Time: Tue May 20 10:15:41 1997
Property ID: 4444
Property Name: SAN JUAN 29-7 UNIT | 59 | 69656-1
Table Name: K:\ARIES\RR98PDP\TEST.DBF

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09/26/57	0	1073.0	
12/06/58	75000	832.0	
03/29/59	106000	757.0	
09/06/60	266000	657.0	
10/05/61	362000	616.0	
03/13/62	386000	668.0	
02/12/63	448000	690.0	
02/07/64	519000	630.0	
02/25/65	578000	646.0	
02/28/66	631000	652.0	
01/10/67	0	0.0	
03/03/67	690000	614.0	
03/05/68	755000	604.0	
05/27/69	826023	583.0	
08/18/70	911787	533.0	
03/30/71	941027	571.0	
06/12/72	989933	627.0	
08/21/74	1055421	652.0	
04/20/76	1100007	651.0	
05/16/78	1179653	596.0	
07/29/80	1324662	466.0	
05/13/82 07/05/84	1416864	492.0	
10/04/86	1495661	474.0	
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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. 11629 ORDER NO. R-10697

APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY FOR THE ESTABLISHMENT OF A DOWNHOLE COMMINGLING "REFERENCE CASE" FOR ITS SAN JUAN 29-7 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 8th 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 29-7 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 29-7 Unit which encompasses some 22,500 acres in Township 29 North, Range 7 West, NMPM, San Juan County, New Mexico.
- (5) Within the San Juan 29-7 Unit, the applicant currently operates fifty-five (55) Basin-Dakota Gas Pool wells, one hundred thirty-one (131) Blanco-Mesaverde Gas Pool wells, thirteen (13) Blanco-Pictured Cliffs and South Blanco-Pictured Cliffs Gas Pool wells, and forty-nine (49) 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 29-7 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 29-7 Unit:
 - 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 29-7 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 29-7 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 29-7 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 245 MMCFG and 76 MMCFG, respectively;
 - c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 218 MCFGD and 238 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 29-7 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 29-7 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 was approximately 3,209 psi and 1,148 psi, respectively; and.
 - b) the average current shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations is approximately 952 psi and 655 psi, respectively.

- (10) There is sufficient pressure data available within the San Juan 29-7 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 29-7 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 29-7 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 29-7 Unit is generally not common;
 - pursuant to Division Rule No. 303.D., applicant is currently required to notify all interest owners within the San Juan 29-7 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 29-7
 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 29-7 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 29-7 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 29-7 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 29-7 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 29-7 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 29-7 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 29-7 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 29-7 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/

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