

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 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS :

☒ Administrative ☐ Hearing

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE

☒ YES ☐ NO

Burlington Resources Oil and Gas

Operator

San Juan 32-9 Unit

#23-A

Address

F-5-31N-09W

San Juan

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7473 API NO. 30-045-23382 Federal ☒ State ☐ Fee ☒

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Pictured Cliffs - 72359		Mesaverde - 72319
2. Top and Bottom of Pay Section (Perforations)	Will be supplied upon completion.		5232'-6266'
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 Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Current) a. 567 psi (est.) (offset SJ 32-9 #94) (see attachment) (Original) b. 817 psi (est.) (offset SJ 32-9 #94) (see attachment)		a. 338 psi (see attachment) b. 850 psi (see attachment)
6. Oil Gravity ($^{\circ}$ API) or Gas BTU Content	BTU 1131 (est.) (offset SJ 32-9 #94)		BTU 1115
7. Producing or Shut-In?	Not completed yet.		Producing
Production Marginal? (yes or no)	Yes		No
* If Shut-In and oil/gas/water rates of last production 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 water of recent test (within 60 days)	Date: N/A Rates:		Date: N/A Rates:
	Date: Rates:		Date: 3/1/97 Rates: 210 mcf/d 0.68 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.

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-flow 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. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10692
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 Mary Ellen Lutey TITLE Production Engineer DATE 4/24/97TYPE OR PRINT NAME Mary Ellen Lutey TELEPHONE NO. (505) 326-9700

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brason Rd., Aztec, NM 87410
District IV
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-
Revised February 21, 1991
Instructions on the back
Submit to Appropriate District Office
State Lease - 4 Co
Fee Lease - 3 Co

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-045-23382		Pool Code 72359/72319	Pool Name Blanco Pictured Cliffs/Blanco Mesaverde
Property Code 7473	Property Name San Juan 32-9 Unit		Well Number 23A
OGRID No. 14538	Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY		Elevation 6809'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Ids	Feet from the	North/South line	Feet from the	East/West line	County
F	5	31-N	9-W		1600	North	1490	West	S.J.

¹¹ Bottom Hole Location If Different From Surface

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

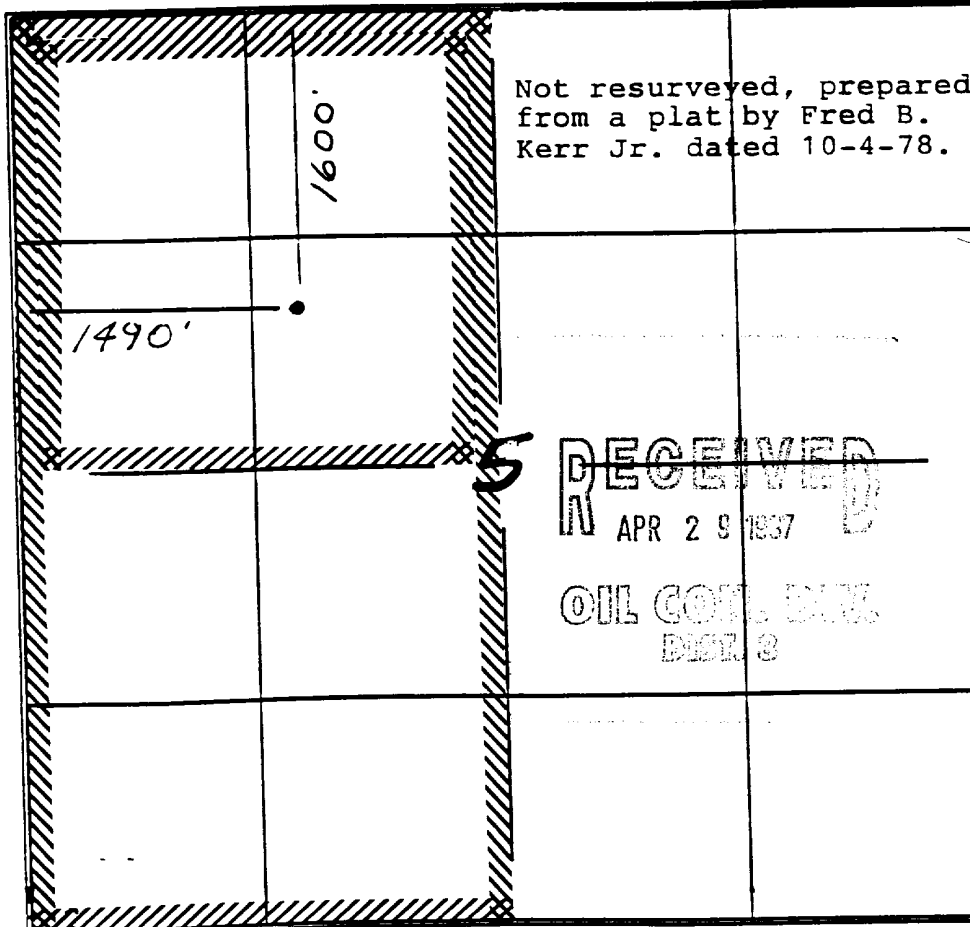
¹² Dedicated Acres
PC-155.45
MV-W/313 85

¹³ Joint or Infill

¹⁴ Consolidation Code

¹⁵ Order No.

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



RECEIVED
APR 29 1997
OIL CON. DIV.
DIST. 8

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Peggy Bradfield
Signature
Peggy Bradfield
Printed Name
Regulatory Administrator
Title
4-28-97
Date

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made or under my supervision, and that the same is true correct to the best of my belief.

4/24/97

Date of Survey
Signature and Seal of Professional Surveyor
Neale C. Edwards
NEALE C. EDWARDS
NEW MEXICO
6857
6857
Certificate Number

SAN JUAN 32-9 UNIT : 94 : 69986-1

Prop 7013 *

• OIL
• WATER/GAS
• GAS
• WATER

— DAILY RATE
— TBG PRESSURE

○ * WATER Bbls/d
● * GAS Mcf/d
○ * WATER/GAS
○ * OIL Bbl/d

RateTime
Semi Log

100
1000
1000

10
100
100

1
10
10

0.1
1
1

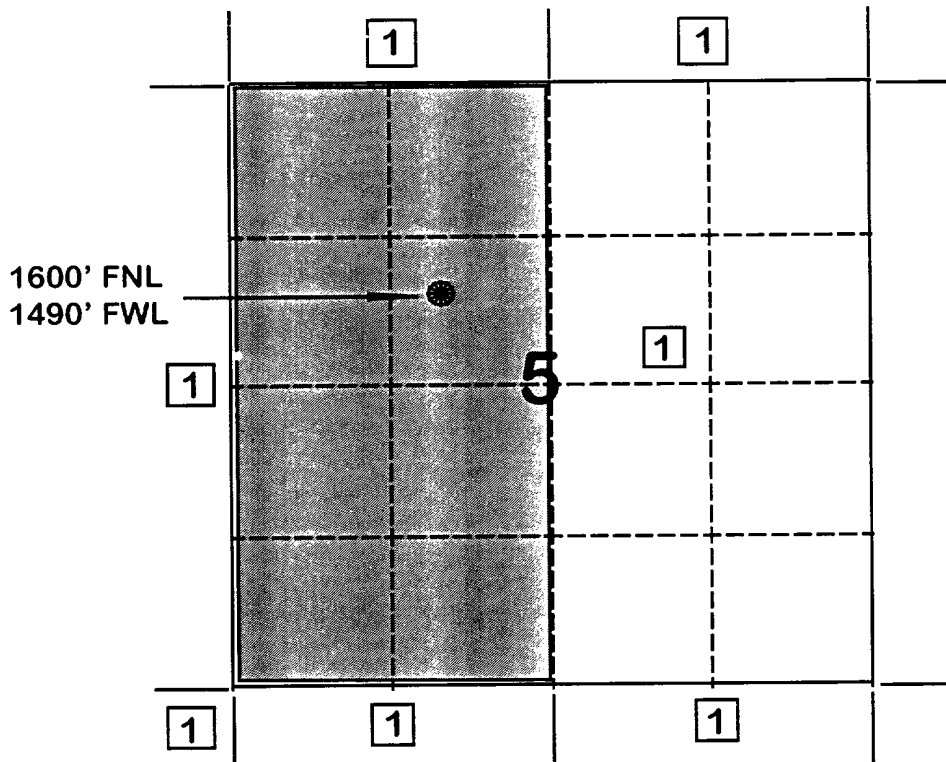
Major = GAS

BURLINGTON RESOURCES OIL AND GAS COMPANY

**San Juan 32-9 Unit #23A
OFFSET OPERATOR \ OWNER PLAT**

Mesaverde (W/2)/Pictured Cliffs (NW/4) Formations Commingle Well

Township 31 North, Range 9 West



1) Burlington Resources Oil and Gas Company Successor to Meridian Oil Inc.

**FLOWING AND STATIC BHP
CULLENDER AND SMITH METHOD**

• REVISION 3.0 84

GAS GRAVITY	<u>0.66</u>
COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.37</u>
%CO2	<u>1.71</u>
%H2S	<u>0</u>
DIAMETER (IN)	<u>2.4</u>
DEPTH (FT)	<u>6394</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>150</u>
FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>292</u>
BOTTOMHOLE PRESSURE (PSIA)	<div>338.2</div>

SAN JUAN 32-9 UNIT #23A MESAVERDE - (CURRENT)

**FLOWING AND STATIC BHP
CULLENDER AND SMITH METHOD**

DATE: 01/03/2014

GAS GRAVITY	0.66
COND. OR MISC. (C/M)	C
%N2	0.37
%CO2	1.71
%H2S	0
DIAMETER (IN)	2.4
DEPTH (FT)	6394
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	726
BOTTOMHOLE PRESSURE (PSIA)	849.6

SAN JUAN 32-9 UNIT #23A MESAVERDE - (ORIGINAL)

MV

Organize Data ScreenGraph Economics Report Plot Utility Quit
Browsing: SAN JUAN 32-9 UNIT | 23A | 69867-1 Property No.: 4798
Table(T): TEST/M,P,H,E,T,Z,C,A,O,D,N,1,2,3,B,U,S Rec: 1/11/103224
Item: 2/3/33 Name: DATE Type: Date Len: 8/27/203

--DATE--	---CUM GAS--	M SIWHP
	Mcf	Psi
01/03/80	0	726.0
05/05/80	87820	518.0
08/03/81	315917	457.0
06/03/82	408613	461.0
02/11/83	487162	467.0
07/19/84	588166	491.0
04/28/86	710984	582.0
03/19/90	822237	488.0
04/15/91	858181	513.0
09/10/91	882420	525.0
07/29/93	966867	292.0

F1=Help F3=PrvPro F5=PrvTbl F7=Calcu F9=Utils Alt+TableLtr=Change Table
F2=Jump F4=NxtPro F6=NxtTbl F8=Print F10=Exit Shift+<- ->=Fast Tbl R & L

**FLOWING AND STATIC BHP
CULLENDER AND SMITH METHOD**

INTERPOLATED BHP

GAS GRAVITY	0.66
COND. OR MISC. (C/M)	C
%N2	0.17
%CO2	1.85
%H2S	0
DIAMETER (IN)	2.4
DEPTH (FT)	3692
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	110
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	517
BOTTOMHOLE PRESSURE (PSIA)	566.6

SAN JUAN 32-9 UNIT #23A PICTURED CLIFFS - (ANTICIPATED)
SAN JUAN 32-9 UNIT #94 PICTURED CLIFFS - (CURRENT)

**FLOWING AND STATIC BHP
CULLENDER AND SMITH METHOD**

FORM 000003-01-01

GAS GRAVITY	<u>0.66</u>
COND. OR MISC. (C/M)	<u>C</u>
%N ₂	<u>0.17</u>
%CO ₂	<u>1.85</u>
%H ₂ S	<u>0</u>
DIAMETER (IN)	<u>2.4</u>
DEPTH (FT)	<u>3692</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>110</u>
FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>743</u>
BOTTOMHOLE PRESSURE (PSIA)	<u>817.4</u>

SAN JUAN 32-9 UNIT #23A PICTURED CLIFFS - (ANTICIPATED)
 SAN JUAN 32-9 UNIT #94 PICTURED CLIFFS - (ORIGINAL)

PC OFFICE

Organize Data ScreenGraph Economics Report Plot Utility Quit
Browsing: SAN JUAN 32-9 UNIT | 94 | 69986-1 Property No.: 7013
Table(T): TEST/M,P,H,E,T,Z,C,A,O,D,N,1,2,3,B,U,S Rec: 1/6/103224
Item: 2/3/33 Name: DATE Type: Date Len: 8/27/203

--DATE--	---CUM GAS--	M SIWHP
	Mcf	Psi
11/08/78	0	743.0
02/21/79	15857	716.0
07/17/80	313840	573.0
08/03/81	444685	517.0
06/28/82	506461	516.0
07/12/84	583525	517.0

F1=Help F3=PrvPro F5=PrvTbl F7=Calcu F9=Utils Alt+TableLtr=Change Table
F2=Jump F4=NxtPro F6=NxtTbl F8=Print F10=Exit Shift+<- ->=Fast Tbl R & L

FARMINGTON 1997 MONTHLY PRODUCTION FOR 69867
SAN JUAN 32-9 UNIT 23A
BLANCO MESAVERDE (PRORATED GAS FIELD MESAVERDE ZONE

PHS030M

DAYS =====			OIL =====			=====			GAS =====			
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER PROD
1	2	F	31	02	39		01	6423	31	1115	15.025	
2	2	F	28	02	19		01	5885	28	1115	15.025	
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE
PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTIC
00/00/00 00:00:00:0 PRS 04/03/97

B MY JOB NUM LU #29

FARMINGTON 1997 MONTHLY PRODUCTION FOR 48579A
ALLEN COM 1A
BLANCO MESAVERDE (PRORATED GAS FIELD MESAVERDE ZONE

PHS030M

DAYS =====			OIL =====			=====			GAS =====			
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER PROD
1	2	F	31	02	220	38.2	01	11559	31	1130	15.025	
2	2	F	28	02	29	40.6	01	11722	28	1130	15.025	
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE
PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTIC
00/00/00 00:00:00:0 PRS 04/03/97

B MY JOB NUM LU #29

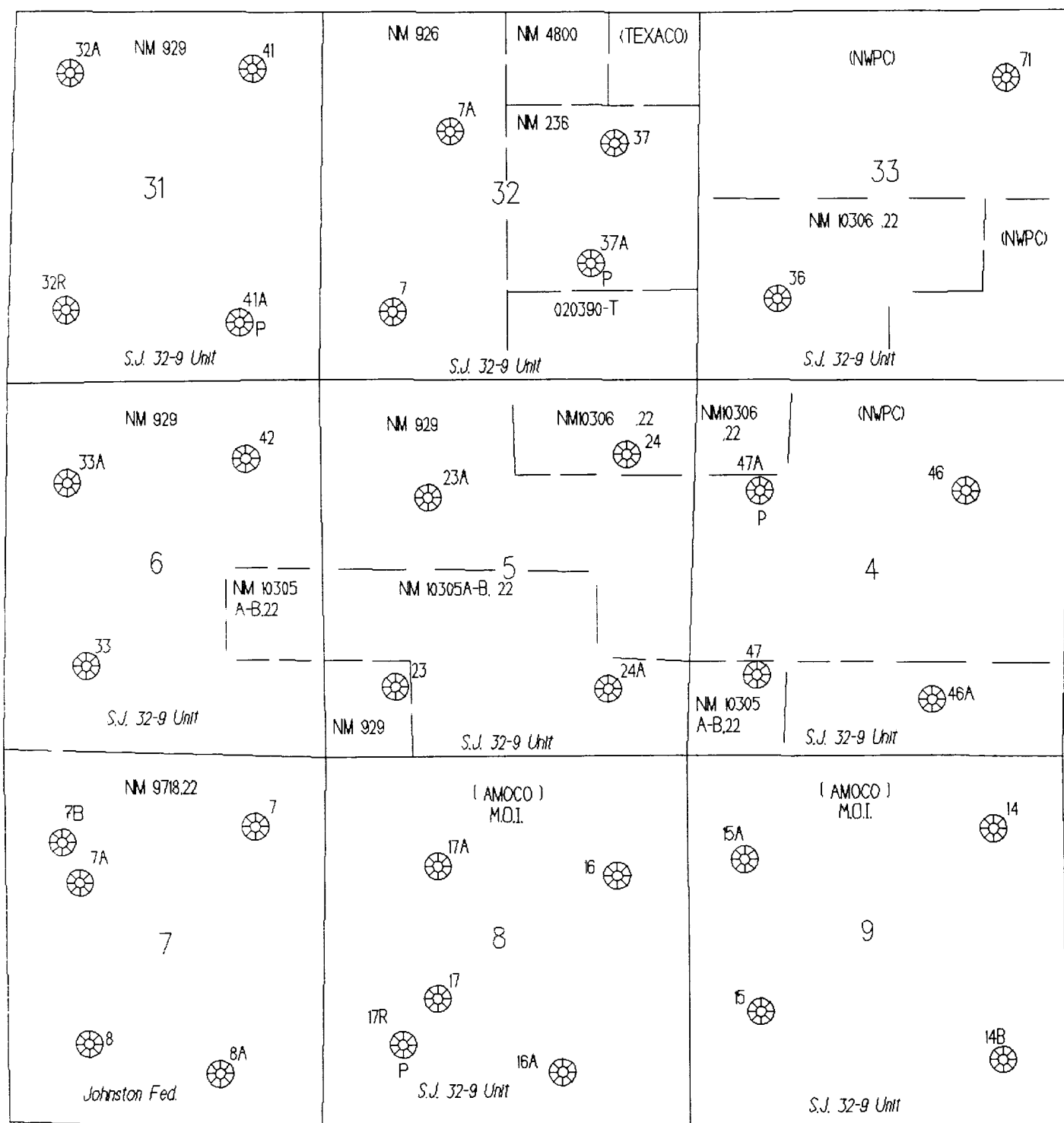
FARMINGTON 1997 MONTHLY PRODUCTION FOR 48934A
SUNRAY G 1A
BLANCO MESAVERDE (PRORATED GAS FIELD MESAVERDE ZONE

PHS030M

SAN JUAN 32-9 UNIT #23A

SECTION 5, T31N, R09W

SAN JUAN CO., NEW MEXICO



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. 11601
ORDER NO. R-10692

APPLICATION OF BURLINGTON RESOURCES
OIL & GAS COMPANY FOR THE ESTABLISHMENT
OF A DOWNHOLE COMMINGLING "REFERENCE
CASE" 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 August 22, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 1st 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 and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 32-9 Unit, San Juan County, New Mexico.

(3) Division Rule No. 303.E., amended by Order No. R-10470-A, currently states:

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Order No. R-10692
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"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 32-9 Unit which encompasses some 21,864 acres in Townships 31 and 32 North, Ranges 9 and 10 West, NMPM, San Juan County, New Mexico.

(5) Within the San Juan 32-9 Unit, the applicant currently operates two (2) Basin-Dakota Gas Pool wells, one hundred twenty-eight (128) Blanco-Mesaverde Gas Pool wells and thirty-two (32) Blanco-Pictured Cliffs 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 32-9 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 32-9 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 32-9 Unit; and,

CASE NO. 11601

Order No. R-10692

Page -3-

- d) establish a "reference case" or an administrative procedure for authorizing the downhole commingling of existing or future drilled wells within the San Juan 32-9 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 32-9 Unit:

- a) the structure and thickness of the Dakota and Pictured Cliffs formations are very consistent;
- b) the average recoverable Pictured Cliffs gas reserves underlying an undeveloped drill block are approximately 700 MMCFG.
- c) initial producing rates for newly drilled or recompleted Pictured Cliffs gas wells range from 150-600 MCFGD;
- d) the San Juan 32-9 Unit Well Nos. 113 and 114 were recently drilled to test the Dakota formation within the unit. Both wells proved non-productive in the Dakota formation; and,
- e) 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 32-9 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 32-9 Unit, the applicant presented engineering evidence and testimony which indicates that:

- a) the average shut-in pressure within the Pictured Cliffs formation at the time of initial development was approximately 562 psi; and,

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Order No. R-10692
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- b) the average current shut-in pressure within the Picured Cliffs formation is approximately 349 psi.

(10) The applicant did not present sufficient bottomhole pressure data within the Dakota and Picured Cliffs formations within the San Juan 32-9 Unit so as to justify the establishment of a "reference case" for pressure criteria.

(11) The applicant testified that various allocation methods will be utilized for downhole commingled wells within the San Juan 32-9 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 where a zone with a well established decline rate is commingled with a newly completed zone; and,
- 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 32-9 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 32-9 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 32-9 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 32-9 Unit of subsequent downhole comminglings is unnecessary and is an excessive burden on the applicant;

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Order No. R-10692
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- d) the downhole commingling of wells within the San Juan 32-9 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 32-9 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 32-9 Unit for obtaining approval for subsequently 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, 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 32-9 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) allocation formulas and (c) modification of notification rules on a unit-wide basis for downhole commingling of Dakota, Mesaverde and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 32-9 Unit, San Juan County, New Mexico, is hereby approved.

(2) The application of Burlington Resources Oil & Gas Company to establish a "reference case" for pressure criteria in the Dakota and Pictured Cliffs formation within the San Juan 32-9 Unit is hereby denied.

(3) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 32-9 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" 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.

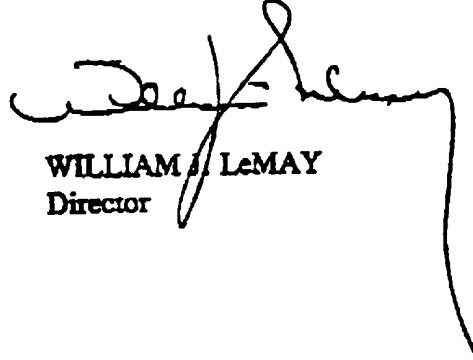
CASE NO. 11601
Order No. R-10692
Page -6-

(4) In order to obtain Division authorization to downhole commingle wells within the San Juan 32-9 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 32-9 Unit of such proposed commingling.

(5) 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