UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

2004 JUN 25 PM 1 43
RECEIVED
070 FARMINGTON NM

1a. **Type of Work**
DRILL

1b. **Type of Well**
GAS

5. **Lease Number**
NMSF-078134
Unit Reporting Number

6. **If Indian, All. or Tribe**

2. **Operator**
BURLINGTON RESOURCES Oil & Gas Company

7. **Unit Agreement Name**

3. **Address & Phone No. of Operator**
PO Box 4289, Farmington, NM 87499

(505) 326-9700

8. **Farm or Lease Name**
Crandell SRC

9. **Well Number**
#2C

4. **Location of Well**
2155' FNL, 1780' FWL

Latitude 36° 53.1183'N, Longitude 107° 55.5750' W

10. **Field, Pool, Wildcat**
Basin Dakota/ Blanco Mesaverde

11. **Sec., Twn, Rge, Mer. (NMPM)**
Sec. 19, T31N, R10W

API # 30-045- 32444

14. **Distance in Miles from Nearest Town**
31.9 miles to Blanco, NM

12. **County**
San Juan

13. **State**
NM

15. **Distance from Proposed Location to Nearest Property or Lease Line**
5.5'

16. **Acres in Lease**

17. **Acres Assigned to Well**
DK W/2 ~~315.60~~ MV W/2 ~~315.40~~ 316.69

18. **Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease**
1029'

19. **Proposed Depth**
7100'

20. **Rotary or Cable Tools**
Rotary

21. **Elevations (DF, FT, GR, Etc.)**
5904' GR

22. **Approx. Date Work will Start**

23. **Proposed Casing and Cementing Program**
See Operations Plan attached

24. **Authorized by:** Joni Clark
Regulatory/Compliance Specialist A.S

Date 6/2/04

PERMIT NO. _____ **APPROVAL DATE** _____

APPROVED BY _____ **TITLE** AFM **DATE** 8-30-04

Archaeological Report attached
Threatened and Endangered Species Report attached
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or presentations as to any matter within its jurisdiction.

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

NMOCD

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
811 South First, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 15, 2000

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-~~039~~-045-32444	71599/72319	Basin Dakota/Blanco Mesaverde

4 Property Code	5 Property Name	6 Well Number
18503	CRANDELL SRC	2C

7 OGRID No.	8 Operator Name	9 Elevation
14538	BURLINGTON RESOURCES OIL AND GAS COMPANY LP	5904'

10 Surface Location

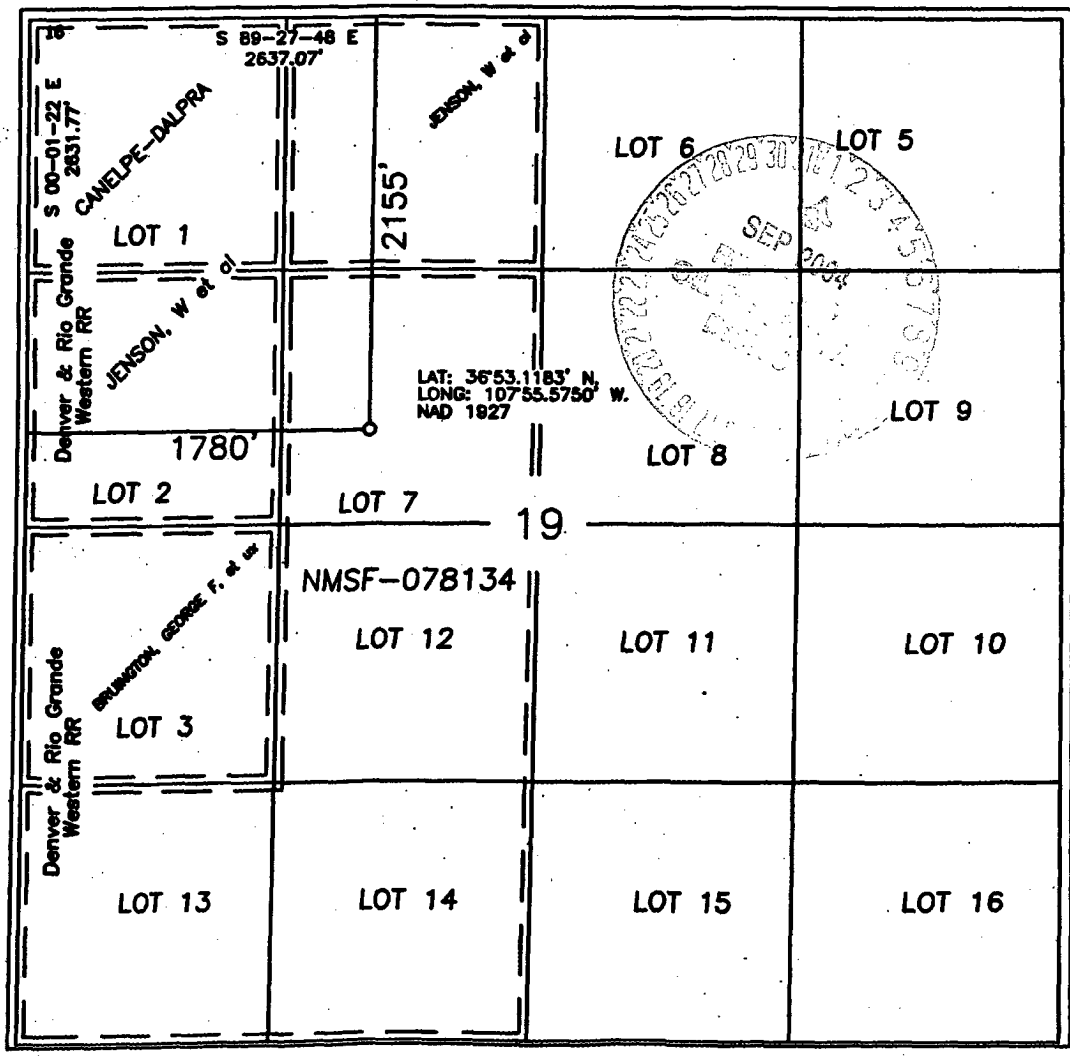
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	19	31-N	10-W		2155'	NORTH	1780'	WEST	SAN JUAN

11 Bottom Hole Location If Different From Surface

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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
MV W/2 ~~316.40~~ DK W/2 316.69			

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



17 OPERATOR CERTIFICATION

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

Signature: Joni Clark

Printed Name: Joni Clark

Title: Regulatory Specialist

Date:

18 SURVEYOR CERTIFICATION

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

Date of Survey:

Signature and Seal of Professional Surveyor:

LEWIS W. RUSSELL
NEW MEXICO
15703
LICENSED PROFESSIONAL SURVEYOR

Certificate Number 15703

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
March 4, 2004

WELL API NO.
30-045-

5. Indicate Type of Lease
STATE ☐ FEE ☐

6. State Oil & Gas Lease No.
SF-078134

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Crandell SRC

1. Type of Well:
Oil Well ☐ Gas Well ☒ Other

8. Well Number
2C

2. Name of Operator
Burlington Resources Oil & Gas Company LP

9. OGRID Number
14538

3. Address of Operator
3401 E. 30th Street, Farmington, NM 87402

10. Pool name or Wildcat
Blanco Mesaverde/Basin Dakota

4. Well Location

Unit Letter E : 2155 feet from the North line and 1780 feet from the West line

Section 19 Township 31N Range 10W NMPM San Juan County, NM

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*

Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-144 must be attached)

Pit Location: UL E Sect 19 Twp 31N Rng 10W Pit type New Depth to Groundwater <50' Distance from nearest fresh water well >1000' Distance from nearest surface water >1000' Below-grade Tank Location UL_____ Sect_____ Twp_____ Rng_____ ; _____ feet from the _____ line and _____ feet from the _____ line

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER: New Drill Pit			☒	OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Burlington Resources proposes to construct a new drill pit. The new drill pit will be a lined pit as detailed in Burlington's general pit construction plan dated April 26, 2004 on file at the NMOCD office.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☒ or an (attached) alternative OCD-approved plan ☐.**

SIGNATURE Cassady Harraden TITLE Regulatory Specialist DATE 5/27/04

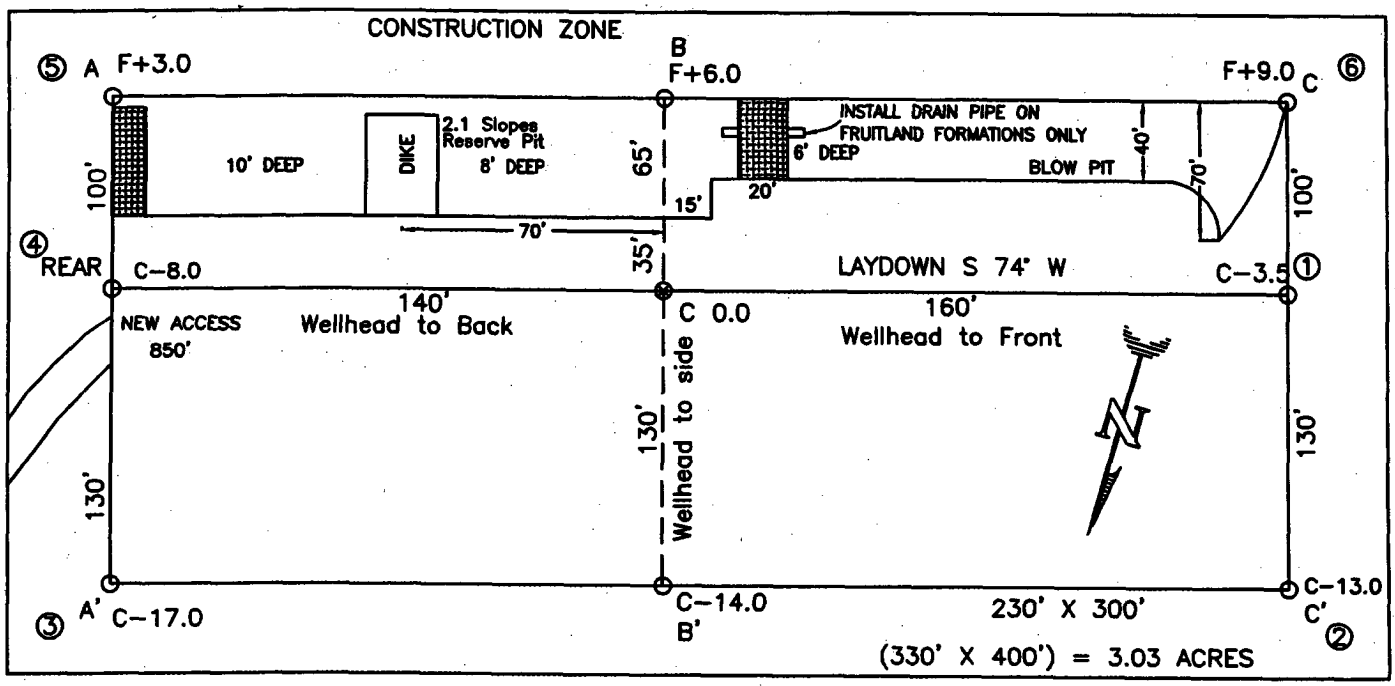
Type or print name Cassady Harraden E-mail address: charraden@br-inc.com Telephone No. 326-9700

(This space for State use)

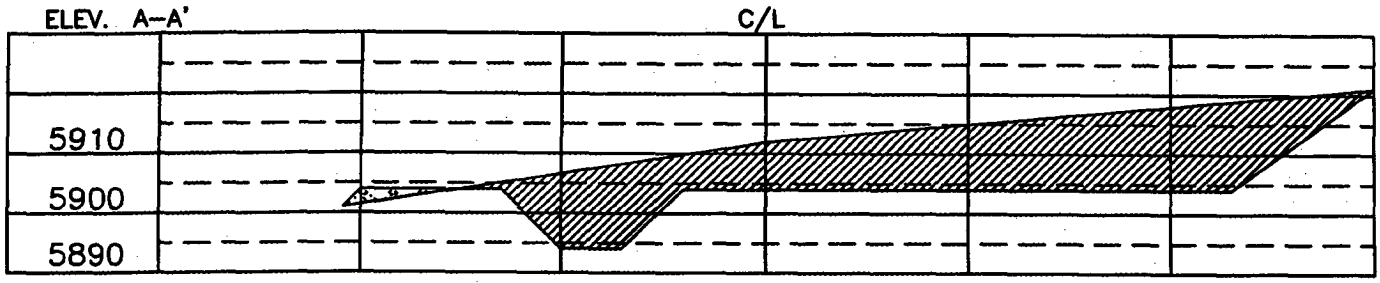
APPPROVED BY [signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE SEP - 1 2004

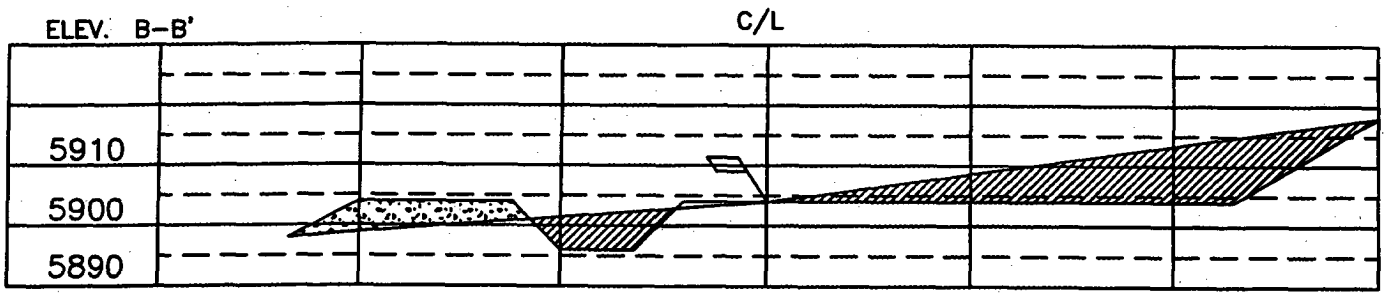
Conditions of approval, if any:

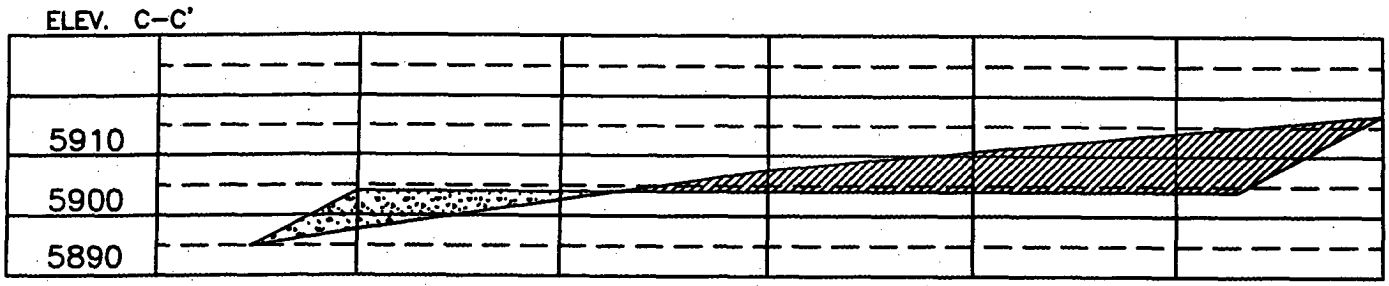
BURLINGTON RESOURCES OIL & GAS COMPANY LP
CRANDELL SRC #2C, 2155' FNL & 1780' FWL
SECTION 19, T-31-N, R-10-W, NMPM, SAN JUAN COUNTY, NM
GROUND ELEVATION: 5904', DATE: JANUARY 14, 2004



RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).
BLOW PIT: OVERFLOW PIPE HALFWAY BETWEEN TOP AND BOTTOM AND TO EXTEND OVER PLASTIC LINER AND INTO BLOW PIT.







NOTE: VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUNG UTILITIES OR PIPELINES.
CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

OPERATIONS PLAN

Well Name: Crandell SRC #2C
Location: 2155'FNL, 1780' FWL, Section 19, T-31-N, R-10-W
San Juan County, New Mexico
Latitude 36° 53.1183'N, Longitude 107° 55.5750'W
Formation: Basin Dakota/ Blanco Mesaverde
Elevation: 5904'GL

Formation Tops:	***Top***	***Bottom***	***Contents***
Surface	San Jose	1036'	
Ojo Alamo	1036'	1076'	aquifer
Kirtland	1076'	2001'	gas
Fruitland	2001'	2596'	
Pictured Cliffs	2596'	2741'	gas
Lewis	2741'	3321'	gas
Intermediate TD	**2841'**		
Huerfanito Bentonite	3321'	3676'	gas
Chacra	3676'	4201'	gas
UpperCliff House	4201'	4316'	
Massive Cliff House	4316'	4416'	
Menefee	4416'	4871'	gas
Point Lookout	4871'	5156'	gas
Mancos	5156'	6153'	gas
Gallup	6153'	6876'	gas
Greenhorn	6876'	6924'	gas
Graneros	6924'	6981'	gas
Two Wells	6981'	7079'	gas
Paguate	7079'	7121'	
Cubero	7121'		
TD	**7224'**		

Logging Program:
Open Hole - No open hole logs required at TD.
Cased Hole - GR/ CBL

Mud Program:

Interval	Type	Weight	Vis.	Fluid Loss
0- 120'	Spud MUD/Air/Air Mist	8.4-9.0	40-50	no control
200- 2841'	LSND	8.4-9.0	30-60	no control
2841- 7224'	Air/Air Mist/Nitrogen	n/a	n/a	n/a

Casing Program (as listed, the equivalent, or better):

Hole Size	Depth Interval	Csg.Size	Wt.	Grade
12 1/4"	0' - 120'	9 5/8"	32.3#	H-40
8 3/4"	0' - 2841'	7"	20.0#	J-55
6 1/4"	0' - 7224'	4 1/2"	10.5#	J-55

Tubing Program: 0' - 7224' 2 3/8" 4.7# J-55

BOP Specifications, Wellhead and Tests:

Surface to Intermediate TD -

11" 2000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

Intermediate TD to Total Depth -

11" 2000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

Surface to Total Depth -

2" nominal, 2000 psi minimum choke manifold (Reference Figure #3).

Completion Operations -

7 1/16" 2000 psi double gate BOP stack (Reference Figure #2). After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

Wellhead -

9 5/8" x 7" x 4 ½" x 2 3/8" x 2000 psi tree assembly.

General -

- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drill crew.
- All BOP tests & drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

Cementing:

9 5/8" surface casing -

Pre-Set Drilled Cement with 23 sx Type I, II cement with 20% flyash mixed at 14.5 ppg, 1.61 cu ft per sack yield. (38 cu ft of slurry, bring cement to surface) Wait on cement for 24 hours for pre-set holes before pressure testing or drilling out from under surface.

9 5/8" surface casing conventionally drilled -

Cement with 88 sacks Type III cement with 0.25 pps Celloflake, 3% calcium chloride. (113 cu.ft.-200% excess, bring cement to surface). Wait on cement appropriate time until cement achieves 250 psi compressive strength at 60 degrees F. prior to nipple up of BOPE. Wait on cement for 8 hrs for conventionally set holes before pressure testing or drilling out from under surface.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing -

Lead with 240 sacks Premium Lite cement with 3% calcium chloride, 0.25 pps Celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate. Tail w/90 sacks Type III cmt w/1% calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss (634 cu ft- 50% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL or a temperature survey will be run to determine TOC. Test casing to 1500 psi for 30 minutes.

7" intermediate casing alternative two stage: Stage collar set 300' above the top of the Fruitland. First stage: Lead w/62 sxs Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% sodium metascilicate,0.4% fluid loss. Tail w/90 Type III cmt w/1%calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss. Second stage: Cmt w/177 sxs Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate (634 cu ft-50% excess to circulate to surface).

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every fourth joint off bottom, to the base of the Ojo Alamo @ 1076'. Two turbolating centralizers at the base of the Ojo Alamo 1076'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

4 1/2" Production Liner/Casing -
Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Cement with 301 sacks Premium Lite HS w/ 0.25 pps Celloflake, 0.3% CD-32, 6.25 pps LCM-1 and 1% FL-52. (596 cu. ft.-30% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Cement float collar stacked on top of float shoe.

Note: If open hole logs are run, cement volumes will be based on 25% excess over caliper volumes.

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. The liner hanger will have a rubber packoff.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.

Special Drilling Operations (Air/Mist Drilling):

The following equipment will be operational while air/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

Additional Information:

- The Mesa Verde and Dakota formations will be completed and commingled.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

Fruitland Coal	300 psi
Pictured Cliffs	600 psi
Mesa Verde	700 psi
Dakota	2500 psi

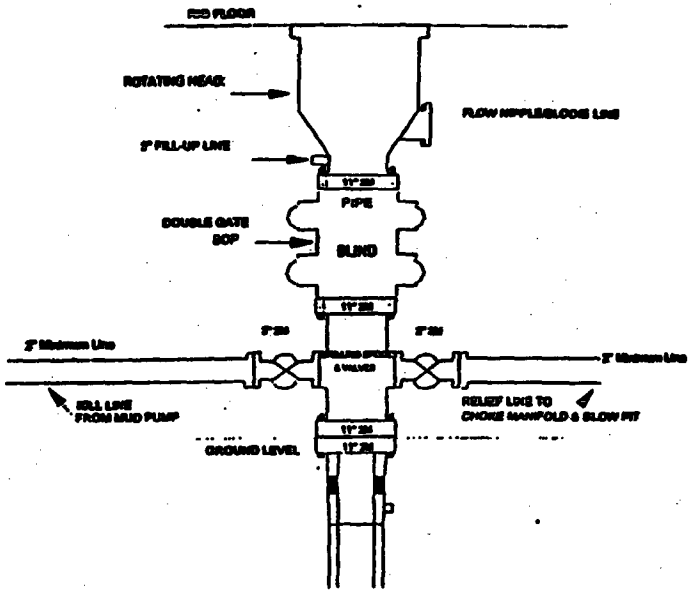
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered below the top of the Pictured Cliffs.
- The Mesaverde formation is W/2 315.40 and the Dakota formation is W/2 316.69 of section 19.
- This gas is dedicated.

Sean Corrigan
Drilling Engineer

June 16, 2004
Date

Burlington Resources

Drilling Rig
2000 psi System



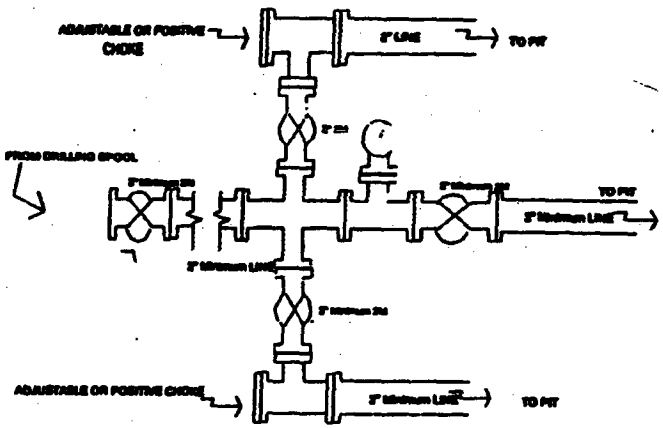
BOP installation from Surface Casing Point to Total Depth. 11" Bore 10" Nominal, 2000 psi working pressure double gate BOP to be equipped with blind rams and pipe rams. A 500 psi rotating head on top of ram preventers. All BOP equipment is 2,000 psi working pressure

Figure #1

4-20-01

BURLINGTON RESOURCES

Drilling Rig
Choke Manifold Configuration
2000 psi System

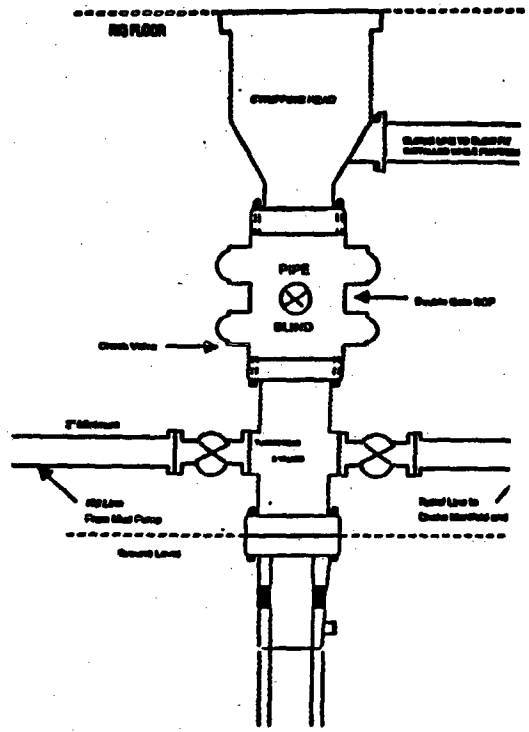


Choke manifold installation from Surface Casing Point to Total Depth. 2,000psi working pressure equipment with two chokes.

Figure #3

BURLINGTON RESOURCES

Completion/Workover Rig
BOP Configuration
2,000 psi System



Minimum BOP installation for all Completion/Workove Operations. 7-1/16" bore, 2000 psi minimum working pressure double gate BOP to be equipped with blind a pipe rams. A stripping head to be installed on the top the BOP. All BOP equipment is 2000 psi working pressure or greater excluding 500 psi stripping head.

Figure #2

4-20-01