UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

2006 OCT 4 PM 3 45
RECEIVED
070 FARMINGTON NM

OCT 2006

1a. Type of Work: DRILL

5. Lease Number: NMsf-078416
Unit Reporting Number

1b. Type of Well: GAS

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: Hardie
9. Well Number: #4M

4. Location of Well
Unit L (NWSW), 1900' FSL, 840' FWL
Latitude 36° 42.54201'N
Longitude 107° 37.99979'W

10. Field, Pool, Wildcat
~~Basin Fruitland Coal~~
Blanco Mesaverde / Basin Dakota
11. Sec., Twn, Rge, Mer. (NMPM)
L Sec. 24, T29N, R8W
API # 30-045- 33984

14. Distance in Miles from Nearest Town: 14 miles to Blanco, NM
12. County: San Juan
13. State: NM

15. Distance from Proposed Location to Nearest Property or Lease Line: 840'

16. Acres in Lease

17. Acres Assigned to Well
W2 ~~309.55~~ 320

18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease: 1001'- Hardie A #2R

19. Proposed Depth: 7552'

20. Rotary or Cable Tools: Rotary

21. Elevations (DF, FT, GR, Etc.): 6379'GL

22. Approx. Date Work will Start

23. Proposed Casing and Cementing Program
See Operations Plan attached

24. Authorized by: Amanda Sandoval
Regulatory Analyst

9-28-06
Date

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY Jim Mowbray TITLE AFM DATE 10/13/06

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.

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

NMOCD

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

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

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

2006 OCT 1 PM 3 45
RECEIVED
070 FARMINGTON NM

Form C-102
Revised August 15, 2000

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045- ~~33984~~ 35572	72319/71599	MESA VERDE/DAKOTA

[4] Property Code	[5] Property Name	[6] Well Number
~~16065~~ 35572	HARDIE	4M

[7] OGRID No.	[8] Operator Name	[9] Elevation
14538	BURLINGTON RESOURCES O&G CO LP	6379'

[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
L	24	29N	8W		1900'	SOUTH	840'	WEST	SAN JUAN

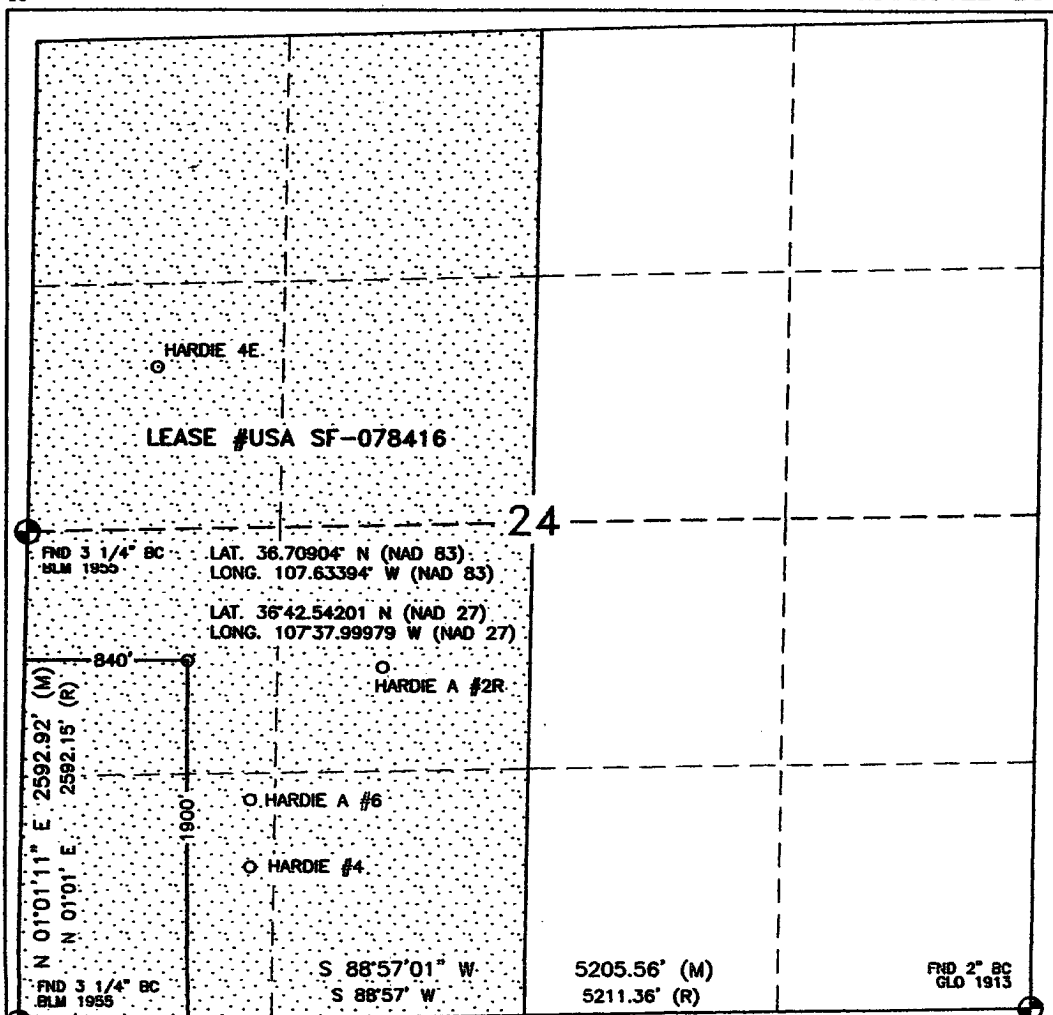
[11] Bottom Hole Location If Different From Surface

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.
320 ~~389.55~~ Acres – (W/2)			

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

16



[17] OPERATOR CERTIFICATION

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

Tracey N. Monroe
Signature

Tracey N. Monroe
Printed Name

Regulatory Analyst
Title

8/9/06
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.

JULY 20, 2006
Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell

DAVID R. RUSSELL NEW MEXICO 10201

DAVID RUSSELL
Certificate Number 10201

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
May 27, 2004

WELL API NO. 30-045- 33984
5. Indicate Type of Lease STATE ☐ FEE ☐
6. State Oil & Gas Lease No. NMSF-078416

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: **Hardie**

1. Type of Well: Oil Well ☐ Gas Well ☒ Other
8. Well Number: **4M**
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: **Basin Fruitland Coal**
4. Well Location
Unit Letter L : 1900 feet from the South line and 840 feet from the West line
Section 24 Township 29N Range 8W NMPM County San Juan
11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 6379'

Pit or Below-grade Tank Application ☒ or Closure ☐
Pit type New Drill Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water >1000'
Pit Liner Thickness: n/a mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

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.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/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.

New Drill, Unlined:

Burlington Resources proposes to construct a new drilling pit, an associated vent/flare pit and a pre-set mud pit (if required). Based on Burlington's interpretation of the Ecosphere's risk ranking criteria, the new drilling pit, vent/flare pit and pre-set mud pit will be unlined pits as detailed in Burlington's Revised Drilling / Workover Pit Construction / Operation Procedures dated November 11, 2004 on file at the NMOCD office. A portion of the vent/flare pit will be designed to manage fluids, and that portion will be unlined, as per the risk ranking criteria. Burlington Resources anticipates closing these pits according to the Drilling / Workover Pit Closure Procedure dated August 2, 2004 on file that 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 Tracey N. Monroe TITLE **Regulatory Assistant** DATE **10/4/2006**

Type or print name **Tracey N. Monroe** E-mail address: tmonroe@br-inc.com Telephone No. **505-326-9752**

For State Use Only

APPPROVED BY _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE OCT 13 2006

Conditions of Approval (if any):

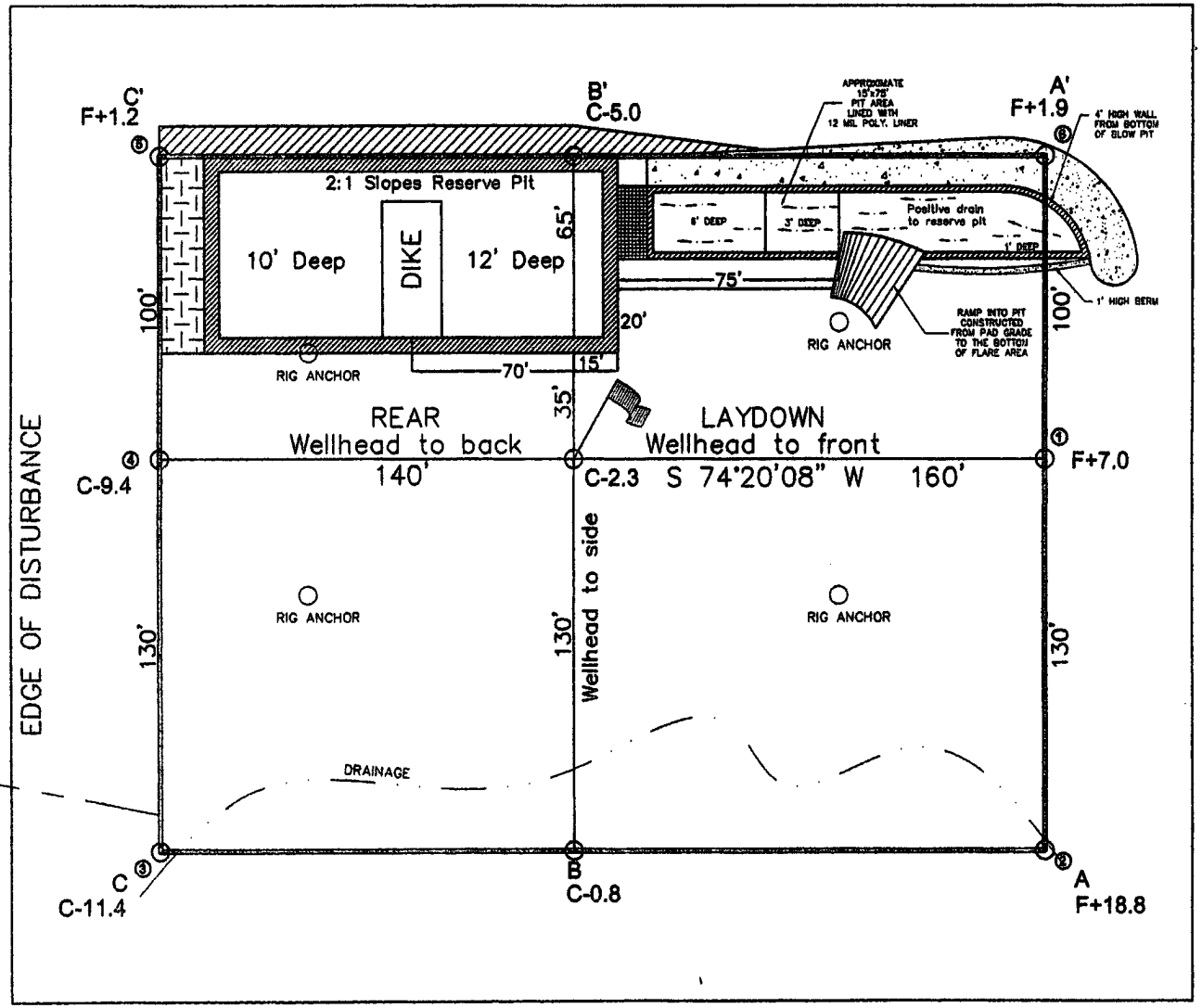
LATITUDE: 36.70904°N
LONGITUDE: 107.63394°W
DATUM: NAD 83

SLOPES TO BE CONSTRUCTED TO MATCH THE ORIGINAL CONTOURS AS CLOSE AS POSSIBLE.

BURLINGTON RESOURCES O&G CO LP

HARDIE #4M
1900' FSL & 840' FWL
LOCATED IN THE NW/4 SW/4 OF
SECTION 24, T29N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO
GROUND ELEVATION: 6379', NAVD 88
FINISHED PAD ELEVATION: 6376.4', NAVD 88

30' 0 30' 60'
SCALE = 60'



330' X 400' = 3.03 ACRES OF DISTURBANCE
SCALE: 1" = 60'
JOB No.: COPC024
DATE: 07/27/06

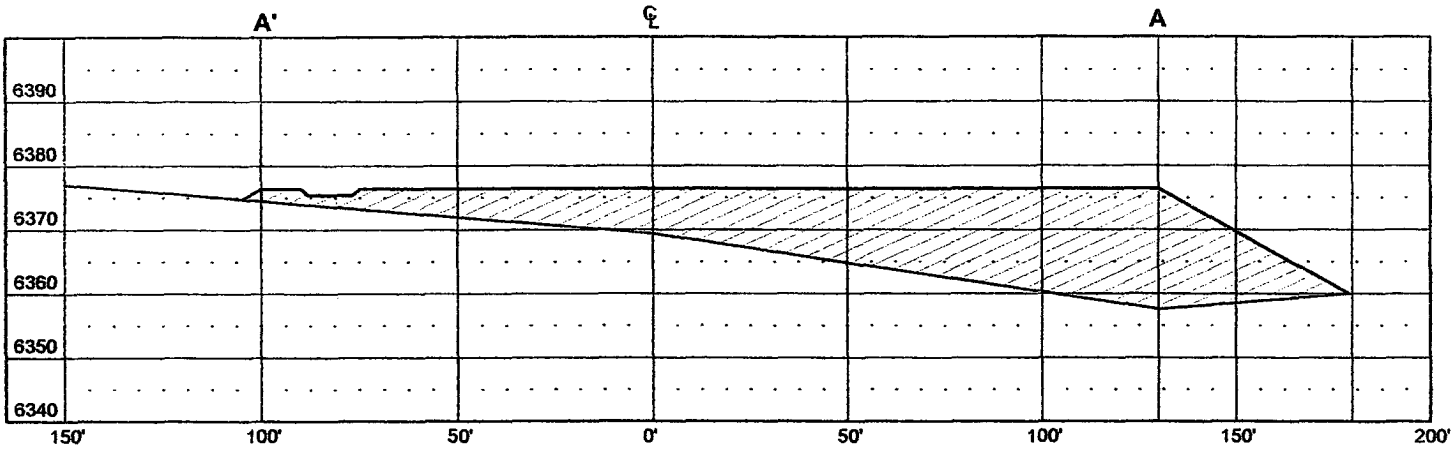
NOTE:
RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW – 3' WIDE AND 1' ABOVE SHALLOW SIDE).
RUSSELL SURVEYING, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.
CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED, BURIED PIPELINES OR CABLES ON WELL PAD, IN CONSTRUCTION ZONE AND/OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

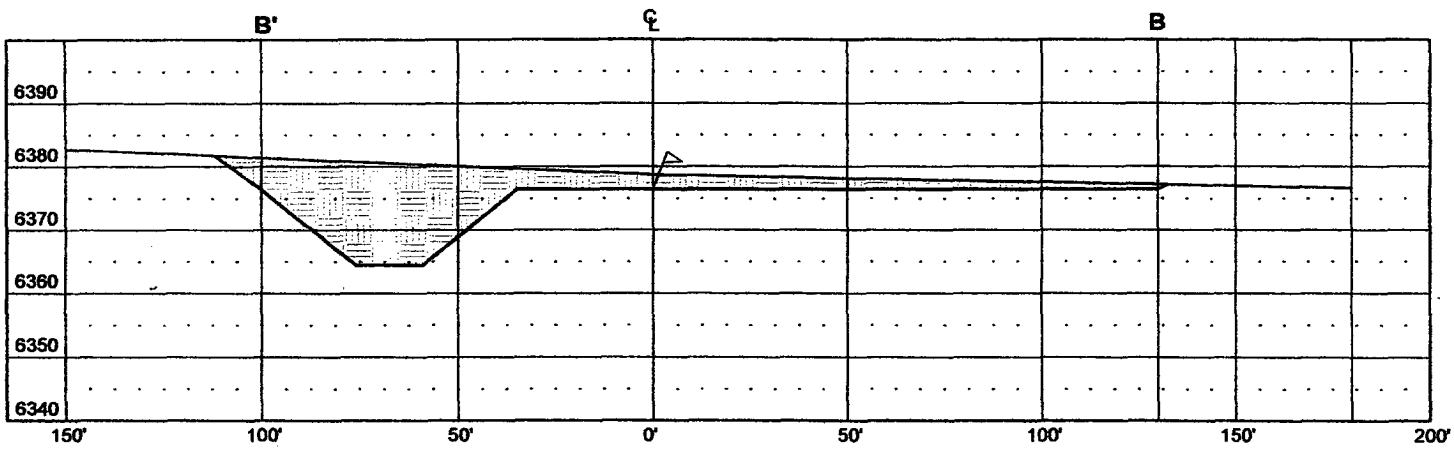
Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

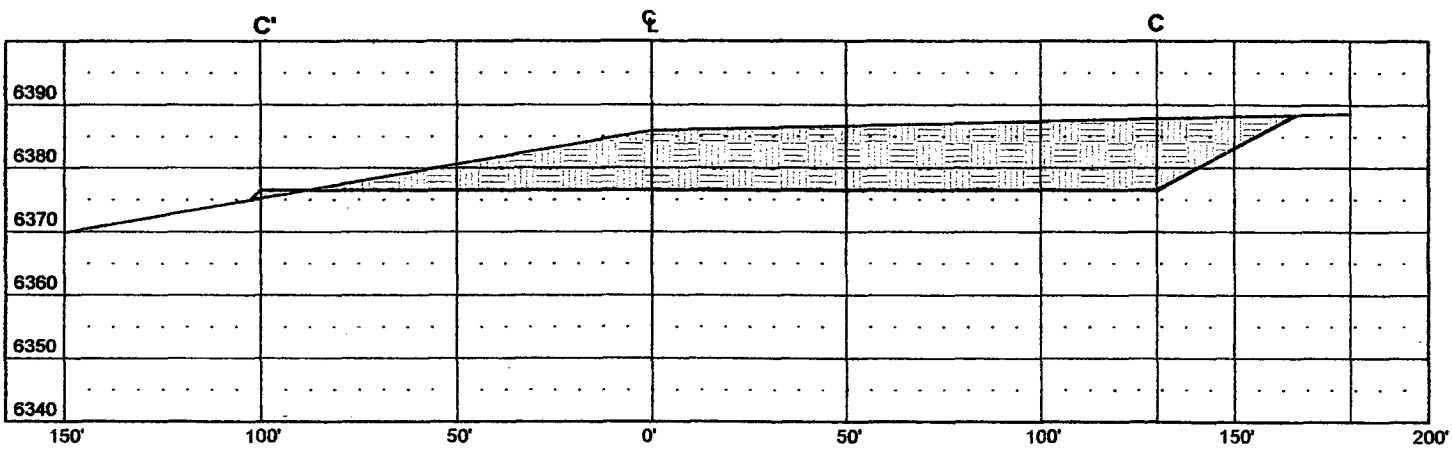
LATITUDE: 36.70904°N
LONGITUDE: 107.63394°W
DATUM: NAD 83

BURLINGTON RESOURCES O&G CO LP

HARDIE #4M
1900' FSL & 840' FWL
LOCATED IN THE NW/4 SW/4 OF
SECTION 24, T29N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO
GROUND ELEVATION: 6379', NAVD 88
FINISHED PAD ELEVATION: 6376.4', NAVD 88







THIS DIAGRAM IS AN ESTIMATE OF DIRT BALANCE AND IS NOT INTENDED TO BE AN EXACT MEASURE OF VOLUME

VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: COPC024
DATE: 07/27/06

CUT
FILL

Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

OPERATIONS PLAN

Well Name: HARDIE 4M

Location: 1900' FSL & 840' FWL, Section Sec 24-T29N-R08W
Rio Arriba County, New Mexico
San Juan

Formation: Mesaverde/Dakota

Elevation: 6379' GL

Formation Tops:	***Top***	***Bottom***	***Contents***
Surface	San Jose	2131'	
Ojo Alamo	2131'	2188'	aquifer
Kirtland	2188'	2758'	gas
Fruitland Coal	2758'	3031'	gas
Pictured Cliffs	3031'	3151'	gas
Lewis	3151'	3678'	
Huerfanito Bentonite	3678'		
Chacra	4016'	4676'	gas
Massive Cliff House	4676'	4836'	gas
Menefee	4836'	5231'	gas
Massive Point Lookout	5231'	5599'	gas
Mancos Shale	5599'	6476'	
Upper Gallup	6476'	7239'	gas
Greenhorn	7239'	7296'	gas
Graneros	7296'	7338'	gas
Two Wells	7338'	7438'	gas
Paguate	7438'	7469'	gas
Upper Cubero	7469'	7487'	gas
Lower Cubero	7487'	7552'	gas
Encinal	7552'	7552'	gas
Total Depth:	7552'		gas

Logging Program:

Mud Logs/Coring/DST

Mud logs - none
Coring - none
DST - none
Open hole - none
Cased hole - Gamma Ray, CBL - surface to TD

Mud Program:

Interval	Type	Weight	Vis.	Fluid Loss
0 - 120'	Spud MUD/Air/Air Mist	8.4 - 9.0	40 - 50	no control
120'- 3251'	LSND	8.4 - 9.0	30 - 60	no control
3251' - 7552'	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' - 3251'	7"	20/23#	J-55
6 1/4"	0' - 7552'	4 1/2"	10.5#/11.6#	J-55

Tubing Program:

Depth Interval	Csg.Size	Wt.	Grade
0' - 7552'	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, BOPE 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, BOPE 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.

Conventionally Drilled - Cement with 88 sx Type III cement with 0.25 pps Celloflake, 2% CaCl. (113 cu ft of slurry, 200% excess, bring cement to surface) Wait on cement for 8 hrs for conventionally set holes before pressure testing or drilling out from under 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. Test casing to 600 psi for 30 minutes.

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

7" intermediate casing -

Lead with 286 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 (733 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/26 sacks Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% fluid loss. Tail w/90 sxs Type III cmt w/1% calcium chloride, 0.25 pps Celloflake, 0.2% fluid loss. Second stage: 247 sacks Premium Lite cement with 3% calcium chloride, .25 pps celloflake, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate (733 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 other joint off bottom, to the base of the Ojo Alamo @ 2188'. Two turbolating centralizers at the base of the Ojo Alamo @ 2188'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

4 1/2" Production Casing -

Pump 295 sxs Premium Lite HS FM w/0.25 pps celloflake, 0.3% CD-32, 6.25 pps LCM-1, 1% fluid loss, 6% gel, 7 pps CSE (585 cu.ft., 30% excess to achieve 100' overlap in 4-1/2" x 7" annulus). WOC a minimum of 18 hrs prior to completing.

Cementing: ***Continued***

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:

- This will be a Mesaverde and Dakota producing well.
- 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	2000 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 West half of Section 24 is dedicated to the Mesaverde and Dakota formation.
- This gas is dedicated.

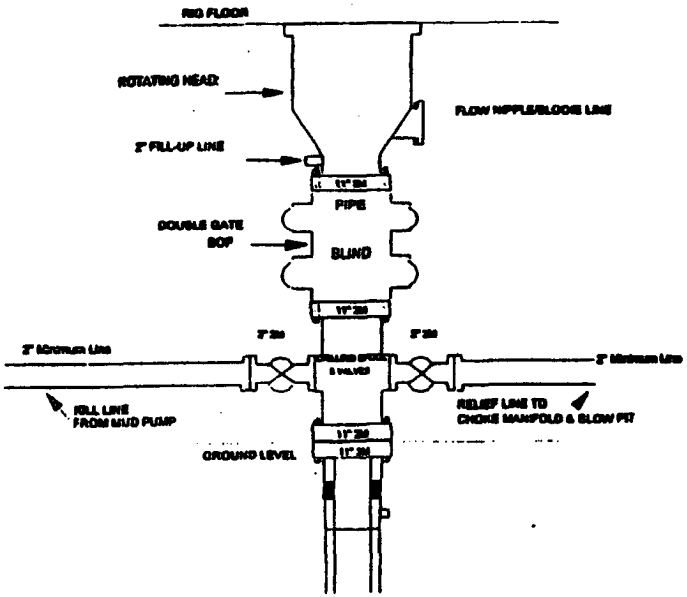
Drilling Engineer

10/2/06
Date

Blowout preventor equipment (BOPE) tests must be performed using an appropriately sized test plug. The BOPE test must be performed and recorded using a test pump, calibrated test gauges and a properly calibrated strip or chart recorder. The test must be recorded in the driller's log and will include a low pressure test requirement of 250 psig held for five minutes and a high pressure test requirement held for ten minutes as described in Onshore Order No. 2 or otherwise authorized in the Application for Permit to Drill (APD). A successful BOPE test using a test plug is considered when no pressure drop occurs over the duration of the test. Test gauges and recorders must be of the proper range and resolution commensurate with the authorized test pressure. Where intermediate casing strings are used, only one BOPE test will be necessary contingent upon the test being conducted to the highest approved test pressure to which the BOPE will be exposed. Casing pressure tests must be held for 30 minutes with no more than a 10 percent pressure drop during the duration of the test.

Burlington Resources

Drilling Rig
2000 psi System



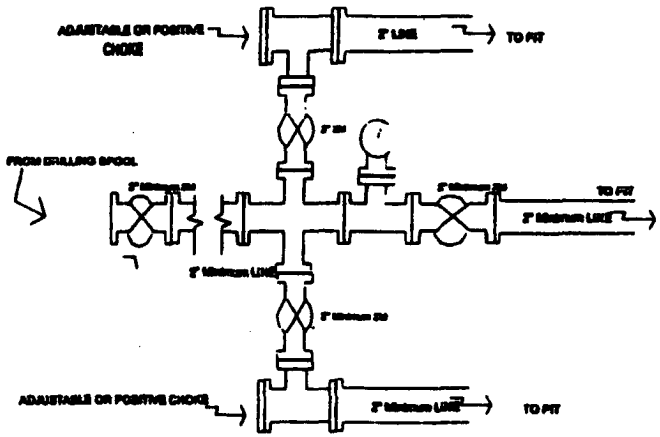
BOP installation from Surface Casing Point to Total Depth. 11" Bore 10" Nominal, 2000 psi working pressure double gate BOP to be equipped with blind rams and pipe rams. A 500 psi rotating head on top of ram preventers. All BOP equipment is 2,000 psi working pressure

Figure #1

4-20-01

BURLINGTON RESOURCES

Drilling Rig
Choke Manifold Configuration
2000 psi System



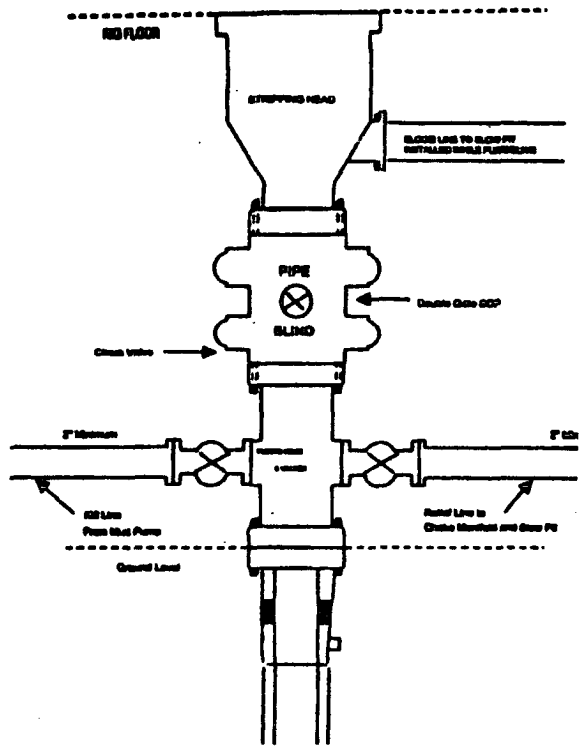
Choke manifold installation from Surface Casing Point to Total Depth. 2,000psi working pressure equipment with two chokes.

Figure #3

4-20-01

BURLINGTON RESOURCES

Completion/Workover Rig
BOP Configuration
2,000 psi System



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

Figure #2