

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RCVD FEB 6 '07
OIL CONS. DIV.
DIST. 8

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number NMSF-078995 Unit Reporting Number NMNM-78421B-DK NMNM-78421A-MV	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator ConocoPhillips	7. Unit Agreement Name San Juan 31-6 Unit	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name 9. Well Number #45M	
4. Location of Well Unit P (SESE), 510' FSL & 85' FEL Latitude 36° 51.0059' N Lat - 107° 29.7058' W	10. Field, Pool, Wildcat Basin Dakota / Blanco MV 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 31, T31N, R06W API # 30-039-3 0147	
14. Distance in Miles from Nearest Town	12. County Rio Arriba	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 85'	17. Acres Assigned to Well 320 E/2 - MV & DK	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease	
19. Proposed Depth 7959'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6438' GL	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached	NOTIFY AZTEC OCD 24 hrs IN TIME TO WITNESS - Cement 12/21/06 Date	
24. Authorized by: <u>Patsy Cleasiter</u> Regulatory Specialist		

PERMIT NO.	APPROVAL DATE
APPROVED BY <u>[Signature]</u>	TITLE <u>AFM</u> DATE <u>2/2/07</u>

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 3165.2 and appeal pursuant to 43 CFR 3165.4

HOLD C104 FOR NSL in Basin DR

NMOCD
8 2/6/07

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

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 58240

State of New Mexico
Energy, Minerals & Natural Resources Department

Revised October 12, 2006

DISTRICT II
1501 West Grand Avenue, Artesia, N.M. 88210

OIL CONSERVATION DIVISION

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

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

1220 South St. Francis Dr.
Santa Fe, NM 87505

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-30147		*Pool Code 72319/71599	*Pool Name Blanco Mesaverde / Basin Dakota
*Property Code 31328	*Property Name SAN JUAN 31-6 UNIT		*Well Number 45M
*OGRID No. 217817	*Operator Name CONOCOPHILLIPS COMPANY		*Elevation 6438'

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
P	31	31-N	8-W		510'	SOUTH	85'	EAST	RIO ARriba

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
P									
*Dedicated Acres 320 acres E2 MV/DK			*Joint or Infill		*Consolidation Code		*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

16

		SF-078995	
31		LAT: 36°51.0059' N. LONG: 107°29.7058' W. NAD 1927 LAT: 38.850177' N. LONG: 107.495549' W. NAD 1983	
		N 90° 00' 00" W 2640.0'	

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

Rhonda Rogers
Signature
Rhonda Rogers
Printed Name
Regulatory Assistant

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.

10-1130-06
Date of Survey
Signature of Professional Surveyor
15703
Certificate Number 15703

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

Energy, Minerals and Natural Resources

May 27, 2004

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO.

30-039- 30147

5. Indicate Type of Lease

STATE ☐

FEE ☐

6. State Oil & Gas Lease No.

NMSF-078995

7. Lease Name or Unit Agreement Name

San Juan 31-6 Unit

8. Well Number

#45M

9. OGRID Number

217817

10. Pool name or Wildcat

Blanco Mesaverde / Basin Dakota

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.)

1. Type of Well:

Oil Well ☐

Gas Well ☒

Other

2. Name of Operator

ConocoPhillips Company

3. Address of Operator

3401 E. 30TH STREET, FARMINGTON, NM 87402

4. Well Location

Unit Letter P : 510' feet from the South line and 85' feet from the East line

Section 31 Township 31N Rng 6W NMPM County Rio Arriba

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

6438' GL

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:

12

mil

Below-Grade Tank:

Volume

4400

bbis;

Construction Material

Synthetic

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

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

TEMPORARILY ABANDON ☐

PULL OR ALTER CASING ☐

PLUG AND ABANDON ☐

CHANGE PLANS ☐

MULTIPLE COMPL ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐

COMMENCE DRILLING OPNS. ☐

CASING/CEMENT JOB ☐

ALTERING CASING ☐

P AND A ☐

OTHER:

New Drill

☒

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 - Lined: ConocoPhillips proposes to construct a new drilling pit, an associated vent/flame pit and a pre-set mud pit (if required). Based on ConocoPhillips' interpretation of the Ecosphere's risk ranking criteria, the new drilling pit and pre-set mud pit will be lined pits as detailed in ConocoPhillips' General Plan dated June 2005 on file at the NMOCDD office. A portion of the vent/flame pit will be designed to manage fluids and that portion will be lined as per the risk ranking criteria. ConocoPhillips anticipates closing these pits according to the November 1, 2004 Guidelines.

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 NMOCDD guidelines ☐, a general permit ☒ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE

Patsy Clugston

TITLE

Regulatory Specialist

DATE

11/10/2006

Type or print name

Patsy Clugston

E-mail address:

clugspl@conocophillips.co

Telephone No.

505-326-9518

For State Use Only

APPROVED BY

[Signature]

TITLE

DEPUTY OIL & GAS INSPECTOR, DIST. 63

DATE

FEB 06 2007

Conditions of Approval (if any):

SAN JUAN 31-6 UNIT 45M, 510' FSL & 85' FEL
SECTION 31, T-31- N, R-6-W, NMPM, RIO ARRIBA COUNTY, NM
GROUND ELEVATION: 6438', DATE: AUGUST 9, 2006



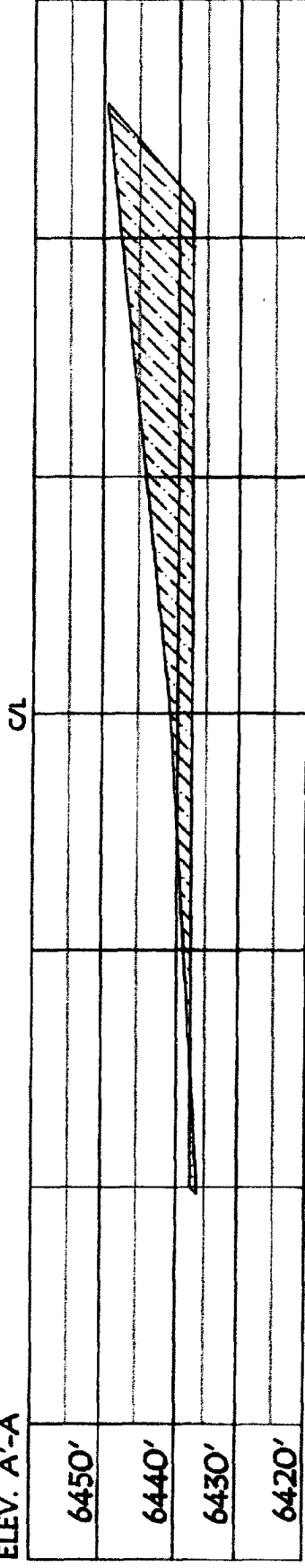
NOTE: VECTOR SERVICES LLC IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.
CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MAILED OR UNMAILED BURIED
PIPES OR CABLES ON WEST RAMP AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

LATITUDE: 36° 51.0059'N LONGITUDE: 107° 29.7058'W NAD27

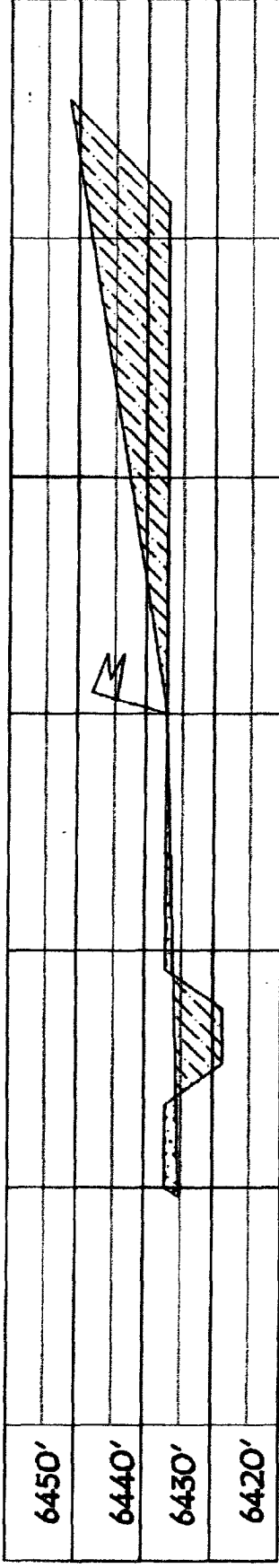
CONOCOPHILLIPS COMPANY

SAN JUAN 31-6 UNIT 45M, 510' FSL & 85' FEL
SECTION 31, T-31-N, R-6-W, NMPM, RIO ARriba COUNTY, NM
GROUND ELEVATION: 6438', DATE: AUGUST 9, 2006

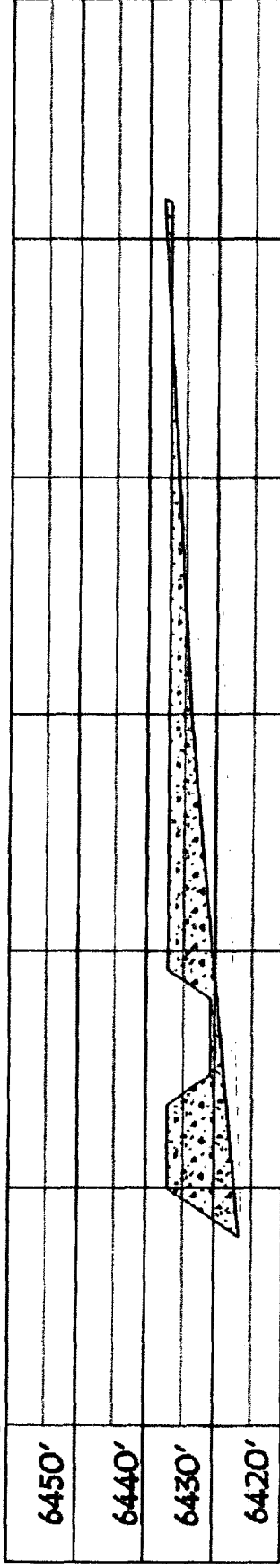
ELEV. A'-A



ELEV. B'-B



ELEV. C'-C



NOTE: VECTOR SURVEYS LLC 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 AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

SAN JUAN 31-6 45M

Lease:		AFE #: WAN.CNV.7211		AFE \$:	
Field Name: 31-6		Rig:		State: NM	County: RIO ARRIBA
Geoscientist: Glaser, Terry J		Phone: (832)486-2332		Prod. Engineer: Plotrowicz, Greg M. Phone: +1 832-486-3486	
Res. Engineer: Pena, David Fernando		Phone: 832-486-2328		Proj. Field Lead: Fransen, Eric E. Phone:	

Primary Objective (Zones):

Zone	Zone Name
R20002	MESAVERDE(R20002)
R20076	DAKOTA(R20076)

Location: Surface		Datum Code: NAD 27		Straight Hole	
Latitude: 36.850171	Longitude: -107.494944	X:	Y:	Section: 31	Range: 6W
Footage X: 85 FEL	Footage Y: 510 FSL	Elevation: 6438	(FT)	Township: 31N	

Tolerance:

Location Type: Summer Only	Start Date (Est.):	Completion Date:	Date In Operation:
Formation Data: Assume KB = 6452 Units = FT			

Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
Surface Casing	M ³ 120 -215	6239	<input type="checkbox"/>	12'14"		13 1/2 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Circulate cement to surface.
NCMT	1202	5250	<input type="checkbox"/>			
OJAM	2550	3902	<input type="checkbox"/>			Possible water flows.
KRLD	2719	3733	<input type="checkbox"/>			
FRLD	2923	3529	<input type="checkbox"/>			Possible gas.
PCCF	3220	3232	<input type="checkbox"/>			
LEWS	3393	3059	<input type="checkbox"/>			
Intermediate Casing	3493	2959	<input type="checkbox"/>			8 3/4" Hole. 7", 20 ppf, J-55, STC Casing. Circulate cement to surface.
HURF	4108	2344	<input type="checkbox"/>			
CHRA	4505	1947	<input type="checkbox"/>			
UCLFH	4998	1454	<input type="checkbox"/>			
CLFH	5321	1131	<input type="checkbox"/>			Gas; possibly wet
MENF	5368	1084	<input type="checkbox"/>			Gas.
PTLK	5647	805	<input type="checkbox"/>			Gas.
UPPER GLLP	6728	-276	<input type="checkbox"/>			Gas. Possibly wet.
GRHN	7659	-1207	<input type="checkbox"/>			Gas possible, highly fractured
GRRS	7712	-1260	<input type="checkbox"/>			
TWLS	7825	-1373	<input type="checkbox"/>			Gas
PAGU	7833	-1381	<input type="checkbox"/>			Gas. Highly Fractured.
CBBO	7840	-1388	<input type="checkbox"/>			Gas
CBRL	7885	-1433	<input type="checkbox"/>			
Total Depth	7959	-1507	<input type="checkbox"/>			6-1/4" hole possibly underreamed to 9.5". Optional Liner: 5.5", 15.5#, J-55 LTC

Reference Wells:

Reference Type	Well Name	Comments
Intermediate	SJ 31-6 5	31-31N-6W-SW, KB = 6220
Intermediate	SJ 31-6 45	31-31N-6W-NE, KB = 6233

PROJECT PROPOSAL - New Drill / Sidetrack

SAN JUAN 31-6 45M

Logging Program:Intermediate Logs: ☐ Log only if show ☐ GR/ILD ☐ Triple ComboTD Logs: ☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☐ TDT ☒ Other

CBL/GR

Additional Information:

Log Type	Stage	From (Ft)	To (Ft)	Tool Type/Name	Remarks
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Comments: Location/Tops/Logging - TD is 300' below top of Greenhorn.

General/Work Description - New Location in the SE/SE ...was the 50F

HOLE: 12.25 "
 CSG OD: 9.625 "
 CSG ID: 9.001 "
 WGT: 32.3 ppf
 GRADE: H-40
 EXCESS: 125 %
 DEPTH: 120'

SURFACE:

Option 1
 79 sx
 16.4 bbls
 91.9 cuft
 1.17 ft³/sx
 15.8 ppg
 4.973 gal/sx
 Class G Cement
 + 3% S001 Calcium Chloride
 + 0.25 lb/sx D029 Cellophane Flakes

Comp. Strength
 6 hrs 250 psi
 8 hrs 500 psi

Option 2

76 sx
 16.4 bbls
 91.9 cuft
 1.21 ft³/sx
 15.6 ppg
 5.29 gal/sx
 Standard Cement
 + 3% Calcium Chloride
 + 0.25 lb/sx Flocele

Comp. Strength
 6 hrs 250 psi
 8 hrs 500 psi

Option 3

37 sx
 10.6 bbls
 59.3 cuft
 1.61 ft³/sx
 14.5 ppg
 7.41 gal/sx
 Type I-II Ready Mix
 + 20% Fly Ash

Comp. Strength
 8 hrs 475 psi
 24 hrs 1375 psi

HOLE: 8.75 "
 CSG OD: 7 "
 CSG ID: 6.456 "
 WGT: 20 ppf
 GRADE: J-55
 EXCESS: 50 %
 TAIL: 698.6'
 DEPTH: 3493'

INTERMEDIATE LEAD:

Option 1
 230 sx
 111.2 bbls
 624.3 cuft
 2.72 ft³/sx
 11.7 ppg
 15.74 gal/sx
 Class G Cement
 + 3% D079 Extender
 + 0.20% D046 Antifoam
 + 10 lb/sx Phenoseal

Comp. Strength
 9 hrs 300 psi
 48 hrs 525 psi

Option 2

240 sx
 111.2 bbls
 624.3 cuft
 2.60 ft³/sx
 11.5 ppg
 14.62 gal/sx
 Type III Ashgrove Cement
 + 30 lb/sx San Juan Poz
 + 3% Bentonite
 + 5.0 lb/sx Phenoseal

Comp. Strength
 1:47 hrs 50 psi
 12 hrs 350 psi
 24 hrs 450 psi

Option 3

237 sx
 111.2 bbls
 624.3 cuft
 2.63 ft³/sx
 11.7 ppg
 15.92 gal/sx
 Class G Cement
 + 3% D079 Extender
 + 0.20% D046 Antifoam
 + 1.0 lb/bbl CemNet

Comp. Strength
 3 hrs 100 psi
 24 hrs 443 psi

INTERMEDIATE TAIL:

Option 1
 128 sx
 29.8 bbls
 167.1 cuft
 1.31 ft³/sx
 13.5 ppg
 5.317 gal/sx
 50/50 Poz: Class G Cement
 + 0.25 lb/sx D029 Cellophane Flakes
 + 3% S001 Calcium Chloride
 + 2% D020 Bentonite
 + 1.5 lb/sx D024 Gilsonite Extender
 + 0.1% D046 Antifoamer
 + 6 lb/sx Phenoseal

Comp. Strength
 3:53 500 psi
 8:22 1000 psi
 24 hrs 3170 psi
 48 hrs 5399 psi

Option 2

126 sx
 29.8 bbls
 167.1 cuft
 1.33 ft³/sx
 13.5 ppg
 5.52 gal/sx
 50/50 Poz: Standard Cement
 + 2% Bentonite
 + 6.0 lb/sx Phenoseal

Comp. Strength
 2:05 50 psi
 4:06 500 psi
 12 hrs 1250 psi
 24 hrs 1819 psi

Option 3

131 sx
 29.8 bbls
 167.1 cuft
 1.28 ft³/sx
 13.5 ppg
 5.255 gal/sx
 50/50 Poz: Class G Cement
 + 2% D020 Bentonite
 + 5.0 lb/sx D024 Gilsonite Extender
 + 2% S001 Calcium Chloride
 + 0.1% D046 Antifoamer
 + 0.15% D065 Dispersant
 + 1.0 lb/bbl CemNet

Comp. Strength
 24 hrs 1850 psi
 48 hrs 3411 psi

PRODUCTION:

Option 1
 430 sx
 110.3 bbls
 619.3 cuft
 1.44 ft³/sx
 13.0 ppg
 6.47 gal/sx
 50/50 Poz: Class G Cement
 + 0.25 lb/sx D029 Cellophane Flakes
 + 3% D020 Bentonite
 + 1.0 lb/sx D024 Gilsonite Extender
 + 0.25% D167 Fluid Loss
 + 0.25% D065 Dispersant
 + 0.1% D800 Retarder
 + 0.1% D046 Antifoamer
 + 3.5 lb/sx Phenoseal

Comp. Strength
 7 hrs 500 psi
 24 hrs 2100 psi

Option 2

427 sx
 110.3 bbls
 619.3 cuft
 1.45 ft³/sx
 13.1 ppg
 6.55 gal/sx
 50/50 Poz: Standard Cement
 + 3% Bentonite
 + 0.2% CFR-3 Friction Reducer
 + 0.1% HR-5 Retarder
 + 0.8% Halad-9 Fluid Loss Additive
 + 3.5 lb/sx Phenoseal

Comp. Strength
 9:32 50 psi
 12 hrs 500 psi
 13:29 1026 psi
 24 hrs 2300 psi

HOLE: 6.25 "
 CSG OD: 4.5 "
 CSG ID: 4.052 "
 WGT: 10.5 ppf
 GRADE: J-55
 EXCESS: 30 %
 DEPTH: 7959'

M³ - 11/20/06

San Juan 31-6 Unit #45M

SURFACE:

HOLE: 12.25 "
CSG OD: 9.825 "
CSG ID: 9.001 "
WGT: 32.3 ppf
GRADE: H-40
EXCESS: 125 %
DEPTH: 120'

INTERMEDIATE LEAD:

Option 4

217 sx
111.2 bbls
624.3 cuft
2.88 ft³/sx
11.5 ppg
16.85 gal/sx
Standard Cement
+ 3% Econolite (Extender)
+ 10 lb/sx Phenoseal

Comp. Strength
1:47 50 psi
12 hrs 350 psi
24 hrs 450 psi

HOLE: 8.75 "
CSG OD: 7 "
CSG ID: 6.456 "
WGT: 20 ppf
GRADE: J-55
EXCESS: 50 %
TAIL: 698.6'
DEPTH: 3493'

INTERMEDIATE TAIL:

HOLE: 6.25 "
CSG OD: 4.5 "
CSG ID: 4.052 "
WGT: 10.5 ppf
GRADE: J-55
EXCESS: 30 %
DEPTH: 7959'

Option 5

297 sx
111.2 bbls
624.3 cuft
2.10 ft³/sx
11.7 ppg
11.724 gal/sx
75% Type XI / 25% Class G Cement
+ 0.25 lb/sx D029 Cellophane Flakes
+ 3% D079 Extender
+ 0.20% D046 Antifbam

Comp. Strength
10:56 500 psi
42 hrs 1012 psi

PRODUCTION:

M³-11/20/06

TOPSET FRUITLAND COAL Wells: (topset casing above coal to prepare for cavitation/DO/UR)

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist/nitrogen drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

CASE & FRAC FRUITLAND COAL Wells: (casing set below coal to prepare for frac completion)

Drilling Mud Program:

Surface: spud mud

Production: fresh water mud with bentonite and polymer as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Production: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

MESA VERDE Wells:

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

DAKOTA Wells:

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist/nitrogen drilling media with foamer, polymer, & corrosion inhibitor as needed

Centralizer Program:

Surface: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 3rd, & 4th joints

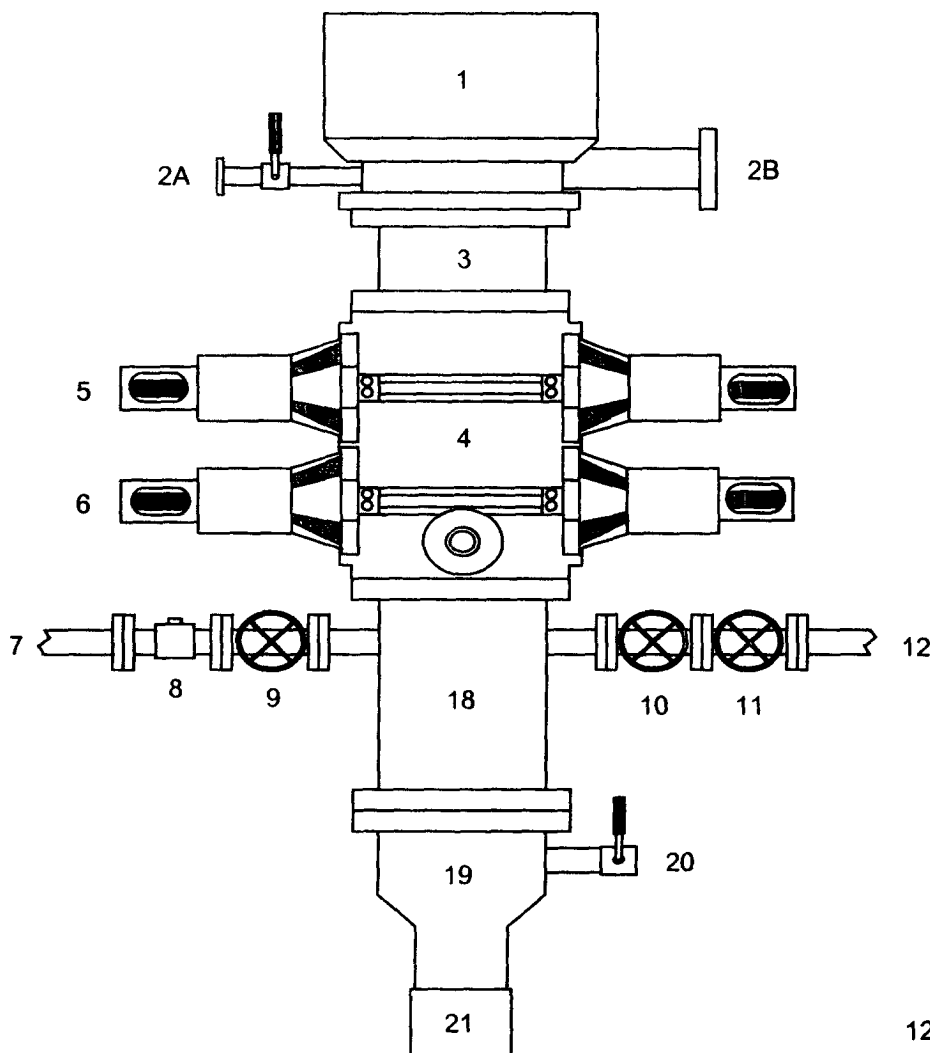
Intermediate: centralizers placed 10' above the shoe latched over a stop collar and at the top of the 2nd, 4th, 6th, 8th, & 10th joints

Turbolizers placed one per joint from the top of the Ojo Alamo to the top of the Kirtland Shale

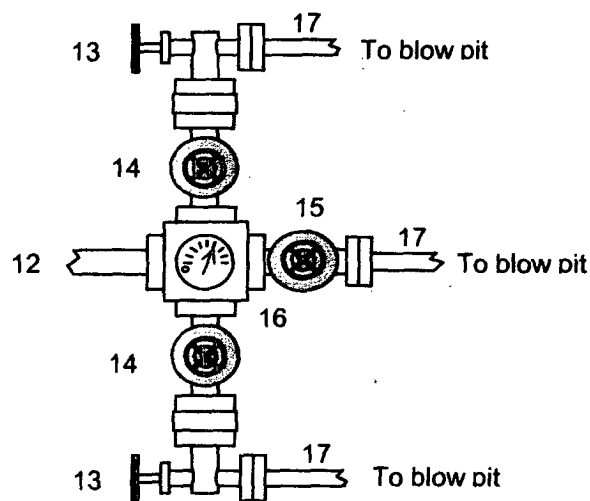
Below Intermediate: no centralizers used in air holes. In mud holes centralizers are spaced out appropriately

BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Drilling to Intermediate Casing Point & Setting 7" Intermediate Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Flowline
3. Spacer Spool
4. Double Ram BOP (11", 3000 psi)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Choke Line (2")
18. Mud Cross Spacer Spool
19. Casing Head "A" Section
20. Casing Head "A" Section 2" Valve
21. 9 5/8" Casing Collar



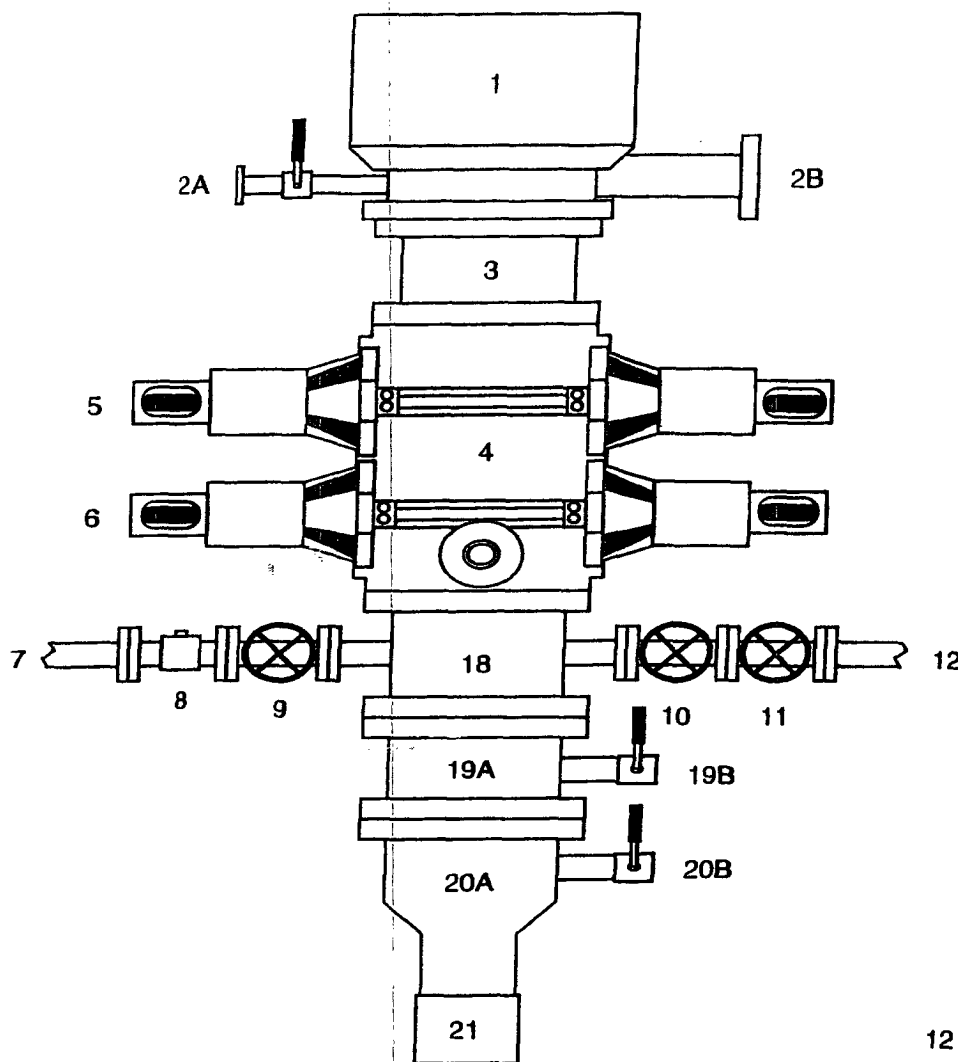
120'

A 12-1/4" hole will be drilled to approximately 120' and the 9-5/8" surface casing will be run and cemented. The Casing Head "A" Section will be screwed onto the 9-5/8" surface casing stub. The BOP will be installed on the Casing Head "A" Section. A test plug will be set in the wellhead and the pipe rams and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 10 minutes and to 1000 psi (high pressure test) for 10 minutes. Then the test plug will be removed, and the 9-5/8" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 10 minutes and to 1000 psi for 30 minutes (this value is one 44% of the minimum internal yield pressure of the 9-5/8" casing). (Note: per regulatory requirements we will wait on cement at least 8 hrs after placement before testing the 9-5/8" surface casing). Then an 8-3/4" hole will be drilled to intermediate casing point and 7" intermediate casing will be run and cemented.

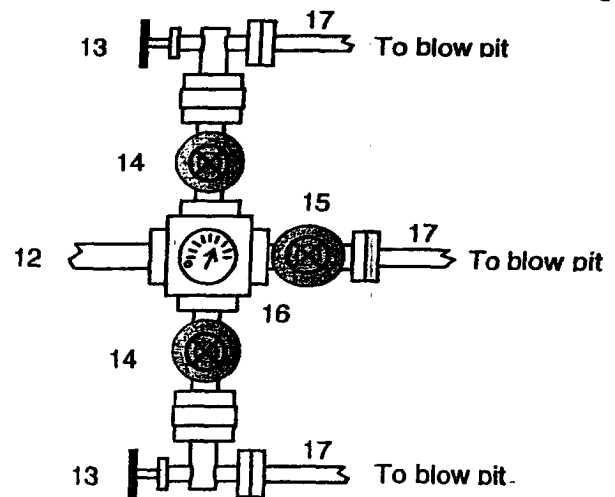
In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

1. Upper Kelly cock Valve with handle
2. Stab-in TIW valve for all drillstrings in use

For Drilling to TD and Setting 4.5 inch Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Blooie Line (for Air Drilling)
3. Spacer Spool
4. Double Ram BOP (11", 3000 psi)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Choke Line (2")
18. Mud Cross Spacer Spool
- 19A Csg Spool "B" Section (11", 3M)
- 19B "B" Section Csg Valve (2", 3M)
- 20A Csg Head "A" Section (11", 3M)
- 20B "A" Section Csg Valve (2", 3M)
21. 9 5/8" Casing Collar



In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

- Revision Date: September 1, 2004