

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

RECEIVED

SEP 16 2004

Bureau of Land Management  
Farmington Field Office

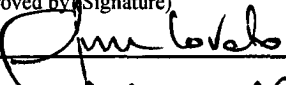
## APPLICATION FOR PERMIT TO DRILL OR REENTER

|   |   |   |
|---|---|---|
| 1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER  |   | 5. Lease Serial No.<br>SF-080538  |
| 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other: CBM <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone |   | 6. If Indian, Allottee or Tribe Name  |
| 2. Name of Operator<br>CONOCOPHILLIPS COMPANY 217817  |   | 7. If Unit or CA Agreement, Name and No.                                      |
| Contact: VICKI WESTBY<br>E-Mail: Vicki.R.Westby@conocophillips.com  |   | 8. Lease Name and Well No.<br>SAN JUAN 30-5 UNIT 258A 31327                   |
| 3a. Address<br>4001 PENBROOK, SUITE 346<br>ODESSA, TX 79762   | 3b. Phone No. (include area code)<br>Ph: 915.368.1352 | 9. API Well No.<br>30-039-29228   |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At surface SWSE 791FSL 1753FEL<br>At proposed prod. zone  |   | 10. Field and Pool, or Exploratory<br>BASIN FRUITLAND COAL 71629              |
| 14. Distance in miles and direction from nearest town or post office*   |   | 11. Sec., T., R., M., or Blk. and Survey or Area<br>0 Sec 14 T30N R5W Mer NMP |
| 15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  | 16. No. of Acres in Lease                             | 12. County or Parish<br>RIO ARRIBA  |
| 18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.   | 19. Proposed Depth<br>3680 MD                         | 13. State<br>NM   |
| 21. Elevations (Show whether DF, KB, RT, GL, etc.)<br>6850 GL   | 22. Approximate date work will start                  | 17. Spacing Unit dedicated to this well<br>F/2 320.00                         |
| 23. Estimated duration  |   | 20. BLM/BIA Bond No. on file  |

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

|   |                                      |                    |
|---|--------------------------------------|--------------------|
| 25. Signature<br>(Electronic Submission)  | Name (Printed/Typed)<br>VICKI WESTBY | Date<br>09/15/2004 |
| Title<br>AGENT  |                                      |                    |
| Approved by (Signature)   | Name (Printed/Typed)                 | Date               |
|  |                                      | 11/30/06           |
| Title<br>Acting AAM   | Office                               |                    |

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

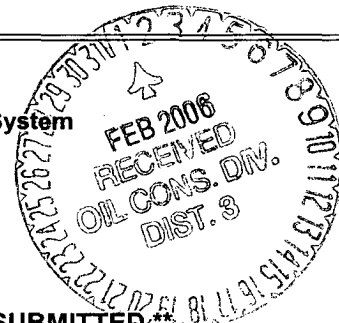
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

## Additional Operator Remarks (see next page)

Electronic Submission #36115 verified by the BLM Well Information System  
For CONOCOPHILLIPS COMPANY, sent to the Farmington

NMOCD

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*



State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102

Revised June 10, 2003

Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

SEP 16 2004

Bureau of Land Management  
Farmington Field Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|                            |   |                    |   |
|----------------------------|---|--------------------|---|
| API Number<br>30-039-29228 |   | Pool Code<br>71629 | Pool Name<br>BASIN FRUITLAND COAL (GAS) |
| Property Code<br>31327     | Property Name<br>SAN JUAN 30-5 UNIT     |                    | Well Number<br>258A                     |
| OGRID No.<br>217817        | Operator Name<br>CONOCOPHILLIPS COMPANY |                    | Elevation<br>6850                       |

Surface Location

| UL or lot no. | Section | Township | Range | Lot | Feet from the | North/South line | Feet from the | East/West line | County     |
|---------------|---------|----------|-------|-----|---------------|------------------|---------------|----------------|------------|
| 0             | 14      | 30N      | 05W   |     | 791           | SOUTH            | 1753          | EAST           | RIO ARRIBA |

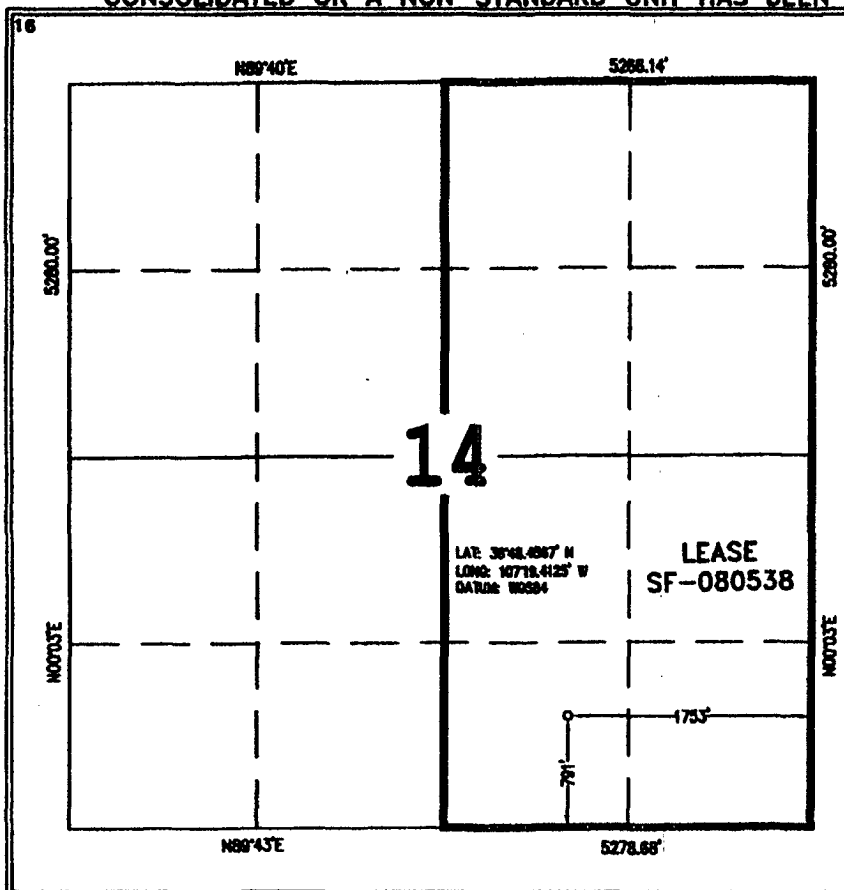
Bottom Hole Location if Different From Surface

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

|                          |                 |                    |           |
|--------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>320.0 | Joint or Infill | Consolidation Code | Order No. |
|--------------------------|-----------------|--------------------|-----------|

East 1/2

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



OPERATOR CERTIFICATION

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

Vicki Westby (Signature)  
Signature

Vicki Westby  
Printed Name

Sr. Analyst  
Title and E-mail Address

9/15/04  
Date

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: 9/15/04  
Signature and Title of Surveyor

HENRY P. BROADBENT  
NEW MEXICO  
REGISTERED PROFESSIONAL SURVEYOR  
Certificate Number: 11005

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

Form C-103  
May 27, 2004

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

|  |  |
|--|--|
| WELL API NO.<br><u>30-039-29228</u>  |  |
| 5. Indicate Type of Lease<br>STATE <input type="checkbox"/> FEE <input type="checkbox"/> |  |
| 6. State Oil & Gas Lease No.   |  |
| 7. Lease Name or Unit Agreement Name<br><u>San Juan 30-5</u>                             |  |
| 8. Well Number<br><u>258A</u>  |  |
| 9. OGRID Number<br><u>217817</u>   |  |
| 10. Pool name or Wildcat<br><u>Basin Fruitland Coal</u>                                  |  |

|   |  |
|---|--|
| SUNDRY NOTICES AND REPORTS ON WELLS<br>(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 <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/>  |  |
| 2. Name of Operator<br><u>ConocoPhillips Company</u>  |  |
| 3. Address of Operator<br><u>4001 Penbrook, Odessa, TX 79762</u>  |  |
| 4. Well Location<br>Unit Letter <u>O</u> : <u>791</u> feet from the <u>South</u> line and <u>1753</u> feet from the <u>last</u> line<br>Section <u>14</u> Township <u>30 N</u> Range <u>5 W</u> NMPM <u>Rio Arriba</u> County |  |
| 11. Elevation (Show whether DR, RKB, RT, GR, etc.)<br><u>6850</u> GL  |  |
| Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>  |  |
| Pit type <u>Drill</u> Depth to Groundwater <u>7100'</u> Distance from nearest fresh water well <u>71000'</u> Distance from nearest surface water <u>200-1000'</u>   |  |
| Pit Liner Thickness: _____ 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 <input type="checkbox"/>                           | PLUG AND ABANDON <input type="checkbox"/> | REMEDIAL WORK <input type="checkbox"/>           | ALTERING CASING <input type="checkbox"/> |
| TEMPORARILY ABANDON <input type="checkbox"/>                             | CHANGE PLANS <input type="checkbox"/>     | COMMENCE DRILLING OPNS. <input type="checkbox"/> | P AND A <input type="checkbox"/>         |
| PULL OR ALTER CASING <input type="checkbox"/>                            | MULTIPLE COMPL <input type="checkbox"/>   | CASING/CEMENT JOB <input type="checkbox"/>       |  |
| OTHER: <u>Drill Pit Notification</u> <input checked="" type="checkbox"/> |   | OTHER: <input type="checkbox"/>                  |  |

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.

ConocoPhillips Company's Generic Pit Plan is on file at NMOCD in Aztec, NM. See the attached diagram that details the location of the pit in reference to the proposed wellhead. The drill pit will be lined. The drill pit will be closed after the well has been completed. The solids left after the water has been disposed of will be sampled and NMOCD approval will be obtained prior to closure of this pit.

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 Vicki Westby (pj) TITLE Sr. Analyst DATE 9/15/04

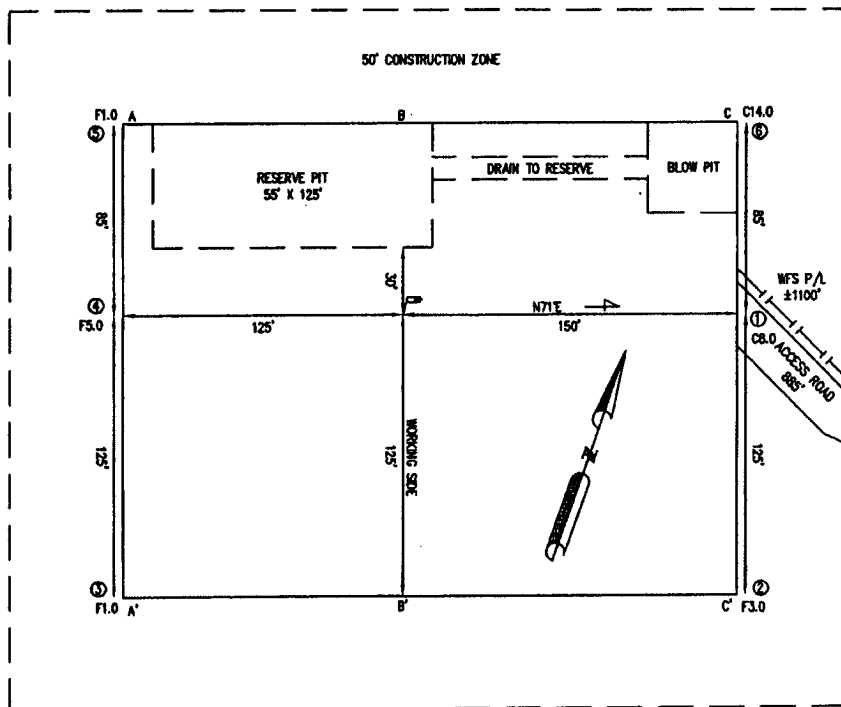
Type or print name Vicki Westby E-mail address: Vicki.R.Westby@ConocoPhillips.com Telephone No. 432-368-1352  
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE FEB 01 2006  
Conditions of Approval (if any): \_\_\_\_\_

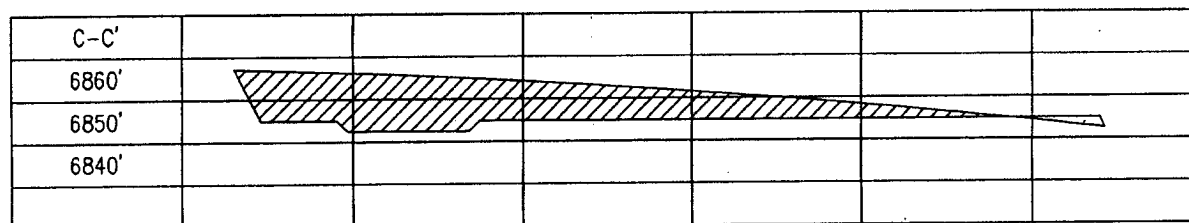
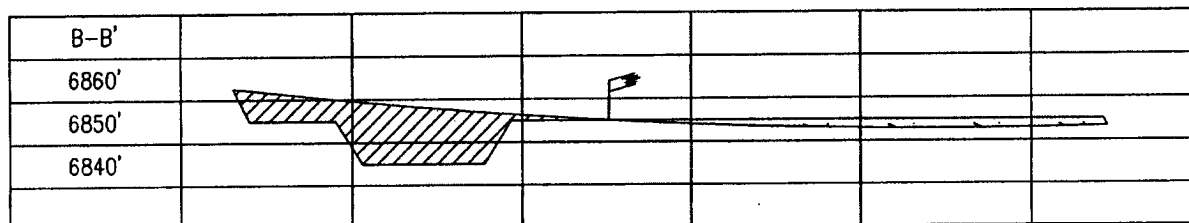
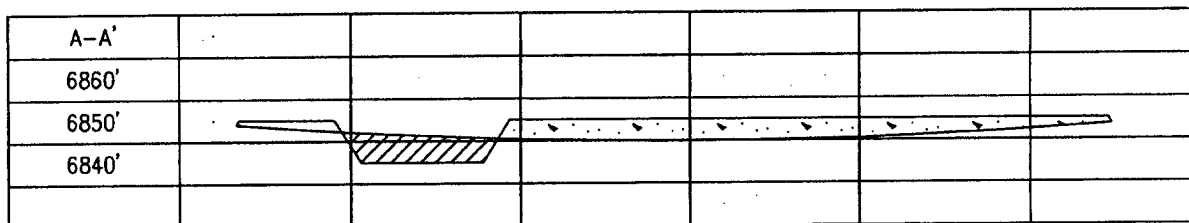
NAD 27  
36 48 27.37  
107 19 22.59

LATITUDE: 36.48.45666° N  
LONGITUDE: 107.19.41252° W  
DATUM: NCS84

CONOCOPHILLIPS COMPANY SAN JUAN 30-5 UNIT #258A  
791' FSL & 1753' FEL, SECTION 14, T30N, R05W, NMPM  
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6850'



PLAT NOTE:  
\*SURFACE OWNER\*  
BLM/FOREST SERVICE





# PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

SAN JUAN 30-5 258A

|                                  |                         |   |
|----------------------------------|-------------------------|---|
| Lease:                           | AFE #:                  | AFE \$:   |
| Field Name: hPHILLIPS 30-5       | Rig:                    | State: NM County: RIO ARRIBA API #:                   |
| Geoscientist: Cloud, Tom A       | Phone: +1 832 486-2377  | Prod. Engineer: Bergman, Pat W. Phone: (832) 486-2358 |
| Res. Engineer: Kolesar, James E. | Phone: (832) 486 - 2336 | Proj. Field Lead: Phone:                              |

## Primary Objective (Zones)

| Zone | Zone Name                  |
|------|----------------------------|
| JCV  | BASIN FRUITLAND COAL (GAS) |

## Location: Surface

|   |                    |                      |                  |                    |           |
|---|--------------------|----------------------|------------------|--------------------|-----------|
| Latitude: 36.81                             | Longitude: -107.32 | X:                   | Y:               | Section: 14        | Range: 5W |
| Footage X: 1753 FEL                         | Footage Y: 791 FSL | Elevation: 6850 (FT) | Township: 30N    |                    |           |
| Tolerance:                                  |                    |                      |                  |                    |           |
| Location Type:                              |                    | Start Date (Est.):   | Completion Date: | Date In Operation: |           |
| Formation Data: Assume KB = 6863 Units = FT |                    |                      |                  |                    |           |

| Formation Call & Casing Points | Depth (TVD in Ft) | SS (Ft) | Depletion (Yes/No)                  | BHP (PSIG) | BHT | Remarks  |
|--------------------------------|-------------------|---------|-------------------------------------|------------|-----|--|
| SAN JOSE                       | 13                | 6850    | <input type="checkbox"/>            |            |     |  |
| Surface Casing                 | 213               | 6650    | <input type="checkbox"/>            |            |     | 12-1/4 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Circulate cement to surface.                       |
| NCMT                           | 1663              | 5200    | <input type="checkbox"/>            |            |     |  |
| OJAM                           | 3003              | 3860    | <input type="checkbox"/>            |            |     | Possible water flows.  |
| KRLD                           | 3123              | 3740    | <input type="checkbox"/>            |            |     |  |
| FRLD                           | 3383              | 3480    | <input type="checkbox"/>            |            |     | Possible gas.  |
| Intermediate Casing            | 3473              | 3390    | <input checked="" type="checkbox"/> |            |     | 8 3/4" Hole. 7", 20 ppf, J-55, STC Casing. Circulate cement to surface.                            |
| BASE MAIN COAL                 | 3593              | 3270    | <input type="checkbox"/>            | 400        |     |  |
| PC TONGUE                      | 3643              | 3220    | <input type="checkbox"/>            |            |     |  |
| Total Depth                    | 3680              | 3183    | <input type="checkbox"/>            |            |     | 6-1/4" hole possibly underreamed to 9.5". Optional Liner: 5.5", 15.5#, J-55 LTC - left uncemented. |
| BASE LOWEST COAL               | 3773              | 3090    | <input type="checkbox"/>            |            |     |  |
| PCCF                           | 3775              | 3088    | <input type="checkbox"/>            |            |     |  |

## Reference Wells:

| Reference Type | Well Name | Comments |
|----------------|-----------|----------|
|----------------|-----------|----------|

## Logging Program:

|                         |   |                                   |   |
|-------------------------|---|-----------------------------------|---|
| Intermediate Logs:      | <input type="checkbox"/> Log only if show | <input type="checkbox"/> GR/ILD   | <input type="checkbox"/> Triple Combo   |
| TD Logs:                | <input type="checkbox"/> Triple Combo     | <input type="checkbox"/> Dipmeter | <input type="checkbox"/> RFT <input type="checkbox"/> Sonic <input type="checkbox"/> VSP <input type="checkbox"/> TDT |
| Additional Information: |   |                                   |   |

Comments: Zones - Carson National Forest

General/Work Description - Carson National Forest  
Recommend do NOT twin the #29A due to lost cement

Mud Log from intermediate casing shoe to TD will be obtained.

Drilling Mud Program:  
Surface: spud mud  
Intermediate: fresh water mud with bentonite and polymer as needed

Printed on: 09/15/2004 10:26:26 AM

**San Juan 30-5 # 258A**

**SURFACE CASING :**

|                         |           |                             |
|-------------------------|-----------|-----------------------------|
| Drill Bit Diameter      | 2 23/32 " |                             |
| Casing Outside Diameter | 9.625 "   | Casing Inside Diam. 9.000 " |
| Casing Weight           | 32.3      | ppf                         |
| Casing Grade            | H-40      |                             |
| Shoe Depth              | 230 '     |                             |
| Cement Yield            | 21        | cuft/sk                     |
| Excess Cement           | 125       | %                           |
| Cement Required         | 147       | sx                          |

SHOE 230 ', 9.625 ", 32.3 ppf, H-40 STC

**INTERMEDIATE CASING :**

|                         |         |                             |
|-------------------------|---------|-----------------------------|
| Drill Bit Diameter      | 8 7/8 " |                             |
| Casing Outside Diameter | 10.75 " | Casing Inside Diam. 9.456 " |
| Casing Weight           | 20      | ppf                         |
| Casing Grade            | J-55    |                             |
| Shoe Depth              | 3473 '  |                             |
| Lead Cement Yield       | 291     | cuft/sk                     |
| Lead Cement Excess      | 160     | %                           |
| Tail Cement Length      | 315 '   |                             |
| Tail Cement Yield       | 133     | cuft/sk                     |
| Tail Cement Excess      | 160     | %                           |
| Lead Cement Required    | 407     | sx                          |
| Tail Cement Required    | 100     | sx                          |

LINER TOP 3453 '

SHOE 3473 ', 7 ", 20 ppf, J-55

LINER BOTTOM 3680 ' (Uncemented)

| San Juan 30-5 #258A |            |           |
|---------------------|------------|-----------|
|                     | Surf. Csg. | Int. Csg. |
| OD                  | 9.625      | 7         |
| ID                  | 9.001      | 6.456     |
| Depth               | 230        | 3473      |
| Hole Diam           | 12.25      | 8.75      |
| % Excess Lead       |            | 160       |
| % Excess Tail       | 125        | 160       |
| Lead Yield          |            | 2.91      |
| Tail Yield          | 1.21       | 1.33      |
| Ft of Tail Slurry   | 230        | 315       |
| Top of Tail Slurry  | 0          | 3158      |
| Top of Lead Slurry  | N/A        | 0         |
| Mud Wt (ppg)        | 8.9        | 9.0       |
| Mud Type            | WBM        | WBM       |

| Surface Casing    |     |          |           |      |       |       |
|-------------------|-----|----------|-----------|------|-------|-------|
|                   | Ft  | Cap      | XS Factor | bbls | cuft  | sx    |
| Open Hole Annulus | 230 | 0.055804 | 2.25      | 28.9 | 162.1 | 134.0 |
| Shoe Track Volume | 40  | 0.078735 | 1         | 3.1  | 17.7  | 13.3  |
| Total             |     |          |           | 32.0 | 179.8 | 147.3 |

| Intermediate Casing     |      |          |           |       |        |       |
|-------------------------|------|----------|-----------|-------|--------|-------|
|                         | Ft   | Cap      | XS Factor | bbls  | cuft   | sx    |
| Lead Open Hole Annulus  | 2928 | 0.026786 | 2.6       | 203.9 | 1144.9 | 393.4 |
| Lead Cased Hole Annulus | 220  | 0.031116 | 1         | 6.8   | 38.4   | 13.2  |
| Lead Total              |      |          |           | 210.8 | 1183.3 | 406.6 |
| Tail Open Hole Annulus  | 315  | 0.026786 | 2.6       | 21.9  | 123.2  | 92.6  |
| Tail Shoe Track Volume  | 42   | 0.040505 | 1         | 1.7   | 9.6    | 7.2   |
| Tail Total              |      |          |           | 23.6  | 132.7  | 99.8  |

|                      |                         |          |
|----------------------|-------------------------|----------|
| San Juan 30-5 #258A  |                         |          |
| 9-5/8 Surface Casing |                         |          |
| Cement Recipe        | Class C Standard Cement |          |
|                      | + 3% Calcium Chloride   |          |
|                      | +0.25 lb/sx Flocele     |          |
| Cement Volume        | 2.147                   | cu ft/sx |
| Cement Yield         | 1.21                    | cu ft/sx |
| Slurry Volume        | 170.8                   | cu ft    |
|                      | 32.0                    | bbbls    |
| Cement Density       | 15.6                    | ppg      |
| Water Required       | 5.29                    | gal/sx   |



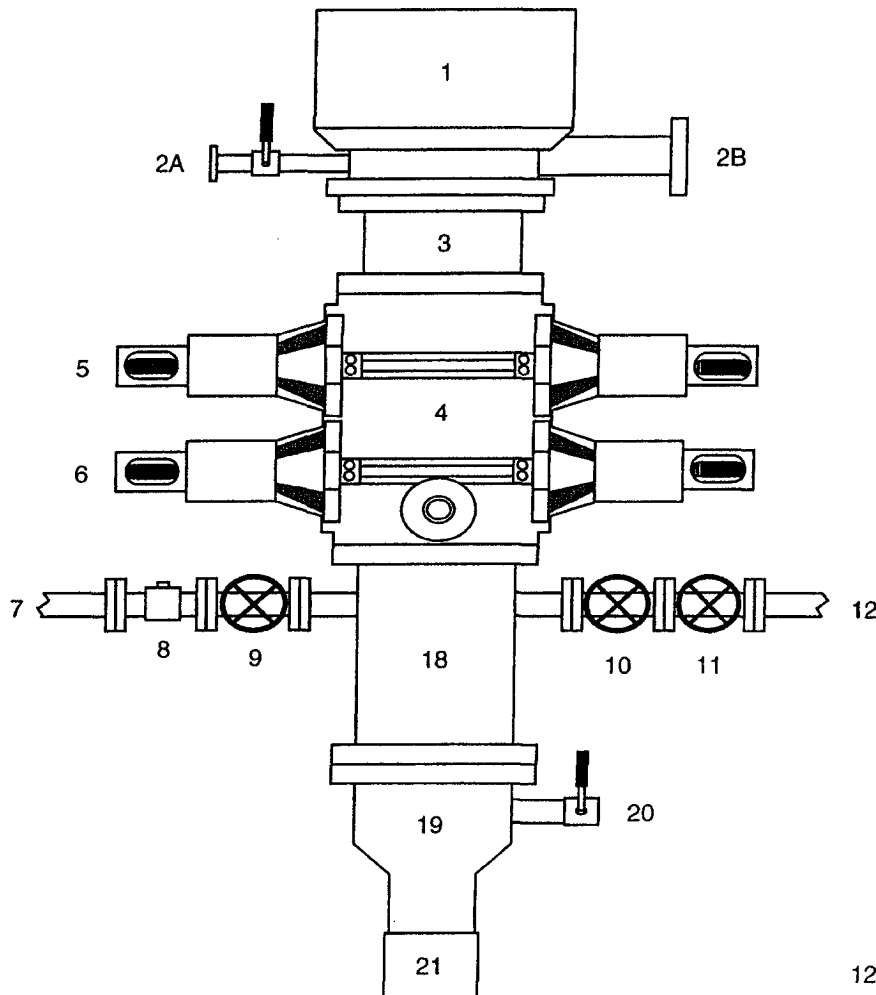
San Juan 30-5 # 258A

| 7" Intermediate Casing |  |
|------------------------|--|
| Lead Slurry            |  |
| Cement Recipe          | Standard Cement                            |
|                        | + 3% Econolite (Lost Circulation Additive) |
|                        | + 10 lb/sx Gilsonite (Lost Circ. Additive) |
|                        | + 0.25 lb/sx Flocele (Lost Circ. Additive) |
| Cement Required        | 40.7 sx                                    |
| Cement Yield           | 2.91 cuft/sx                               |
| Slurry Volume          | 118.3 cuft                                 |
|                        | 210.8 bbls                                 |
| Cement Density         | 11.5 ppg                                   |
| Water Required         | 16.88 gal/sx                               |

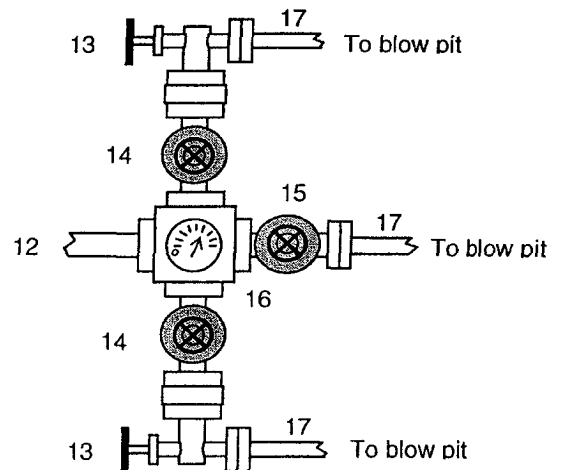
| 7" Intermediate Casing |   |
|------------------------|---|
| Tail Slurry            |   |
| Cement Slurry          | 50 / 50 POZ: Standard Cement                |
|                        | + 2% Bentonite (Light Weight Additive)      |
|                        | + 5 lbm/sk Gilsonite (Lost Circ. Additive)  |
|                        | + 0.25 lbm/sk Flocele (lost Circ. Additive) |
|                        | + 2% Calcium Chloride (Accelerator)         |
| Cement Required        | 100 sx                                      |
| Cement Yield           | 1.33 cuft/sx                                |
| Slurry Volume          | 132.7 cuft                                  |
|                        | 23.6 bbls                                   |
| Cement Density         | 13.5 ppg                                    |
| Water Required         | 5.36 gal/sx                                 |

## 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



A 12-1/4" hole will be drilled to approximately 220' 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.

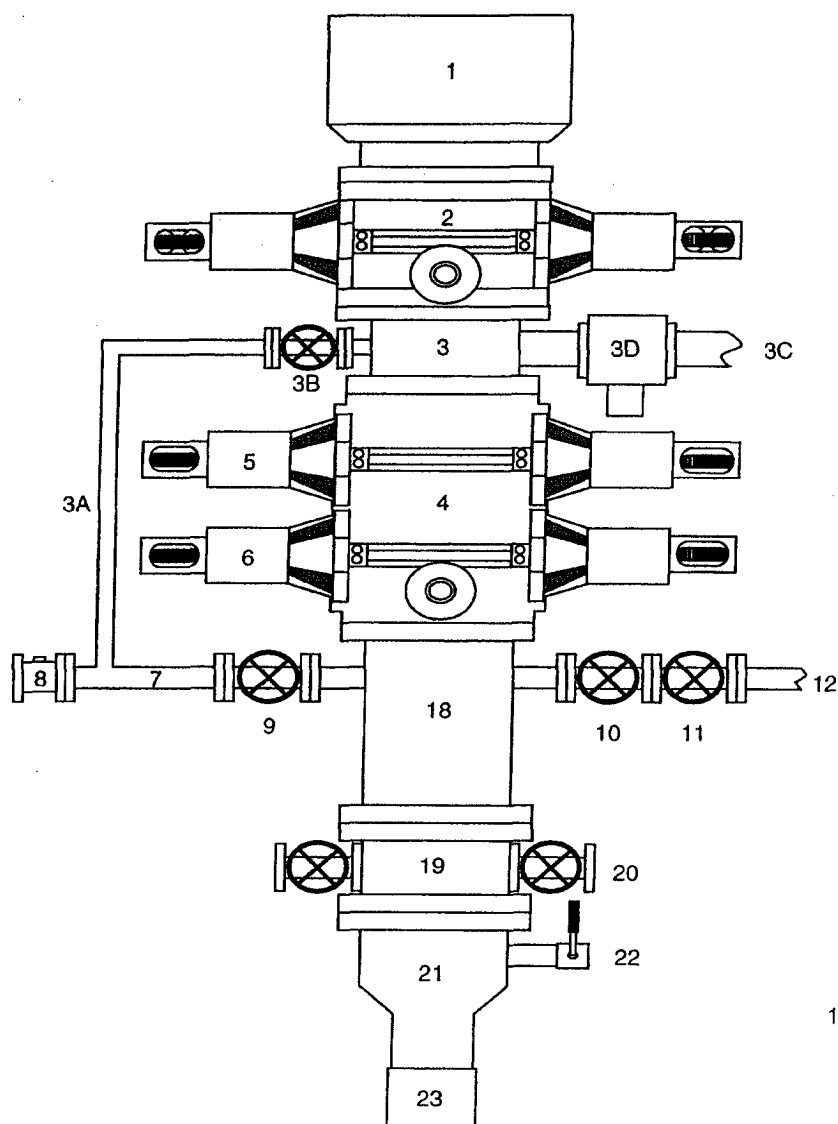
In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

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

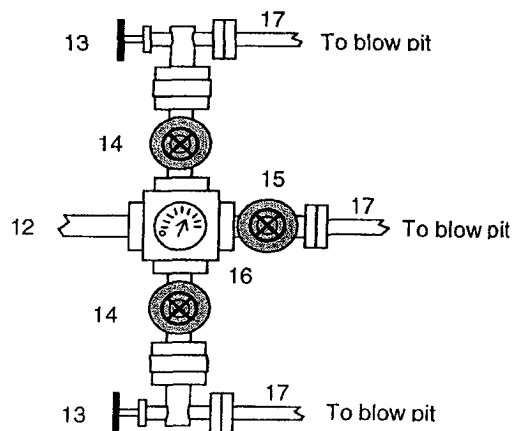
Revision Date: September 1, 2004

# BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Cavitation Program



1. Stripping Head
2. Single Ram BOP (7-1/16", 3M)
3. Mud Cross
- 3A. Equalizing Line (2")
- 3B. Wing Valve (2-1/16", 3M)
- 3C. Blooie Line (2 ea, 5" OD)
- 3D. HCR Valve (1 ea per line, 4-1/16")
4. Double Ram BOP (7-1/16", 3M)
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. Vent Line (2")
18. Spacer Spool
19. Tubing Head
20. Tubing Head Valves (2- 9/16")
21. Casing Head "A" Section
22. Casing Head "A" Section 2" Valve
23. 9-5/8" Casing Collar



This BOP arrangement and test program is for the cavitation program. The BOP will be installed on the tubing head. The 7" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 10 minutes and to 1800 psi for 30 minutes - this test pressure is 48% of the minimum internal yield strength of 3740 psi for the 7", 20#, J-55, STC casing. The pipe rams and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 10 minutes and to 1800 psi (high pressure test) for 10 minutes - This test will be done with a test plug or possibly without a test plug (ie against casing). If we conduct this test without a test plug we will ensure that we have sufficient drillstring weight in the hole to exceed the upward force generated by the test.

We use a power swivel and air/mist to drill the 6-1/4" hole in our cavitation program. We do not use a kelly. In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

1. String floats will be used inside the drillpipe
2. Stab-in TIW valve for all drillstrings in use
3. Each blooie line is equipped with a hydraulically controlled valve (HCR valve).

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