Form 3160-3
(August, 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Barry N.M. Oil Cons. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

0170

Form approved
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a TYPE OF WORK: ☒ DRILL ☐ REENTER

b. TYPE OF WELL: ☒ OIL WELL ☐ GAS WELL ☐ Other ___ ☐ SINGLE ZONE ☐ MULTIPLE ZONE

2. NAME OF OPERATOR
DEVON ENERGY PRODUCTION COMPANY, L.P.

3a. ADDRESS AND TELEPHONE NO.
20 NORTH BROADWAY, SUITE 1500, OKC, OK 73102

3b. TELEPHONE (Include area code).
(405) 228-7512

4. LOCATION OF WELL *(Report location clearly and in accordance with any State requirements)**
At surface **2310' FNL & 660 FWL**

At top proposed prod. zone **2310' FNL & 660 FWL**

POTASH

RECEIVED
NOV 21 2003
OCD-ARTESIA

5. LEASE DESIGNATION AND SERIAL NO.
NMNM 0405444-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
Todd 26E Federal #18

9. API WELL NO.
30-015-33113

10. FIELD AND POOL, OR WILDCAT
Undesignated Ingle Wells; Delaware

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
Sec 26, T23S R31E, Unit E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*	12. COUNTY OR PARISH	13. STATE
35 miles west-northwest of Jal, NM	Eddy	NM

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line if any)	16. NO. OF ACRES IN LEASE	17. Spacing Unit dedicated to this well
660'	1240.00	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. BLM/BIA Bond No. on file**
1200'	8350'	CO1104
21. ELEVATIONS (Show whether DF, RT, GR, etc.)	**22. APPROX. DATE WORK WILL START***	**23. Estimated duration**
3431.6' GR	October 30, 2003	45 days

CARLSBAD CONTROLLED WATER BASIN

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

Drilling Program
Surface Use and Operating Plan
Exhibit #1 = Blowout Prevention Equipment
Exhibit #2 = Location and Elevation Plat
Exhibit #3 = Road Map and Topo Map
Exhibit #4 = Production Facilities Plat
Exhibit #5 = Rotary Rig Layout
Exhibit #6 = Casing Design
H_2S Operating Plan
Archeological clearance report

The undersigned accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or: portions thereof, as described above

Bond Coverage: Nationwide
BLM Bond #: CO-1104

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

25. Signature	Name (Printed/Typed)	Date
Karen Cottom	KAREN COTTOM	9/25/03
Title: OPERATIONS TECHNICIAN		

Approved by (signature)	Name (Printed/Typed)	Date
/s/ Carsten F. Goff	/s/ Carsten F. Goff	19 NOV 2003
Title: ACTING STATE DIRECTOR	Office: NM STATE OFFICE	

Application approval does not warrant or certify that 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.

APPROVAL FOR 1 YEAR

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 representations as to any matter within its jurisdiction

*(Instructions on reverse)

DRILLING PROGRAM

Devon Energy Production Company, LP
Todd 26E Federal #18
Surface Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM
Bottom hole Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM

1. Geologic Name of Surface Formation

a. Permian

2. Estimated tops of geological markers:

a. Rustler	785'
b. Top of Salt	1080'
c. Base of Salt	4180'
d. Bell Canyon	4410'
e. Cherry Canyon	5300'
f. Brushy Canyon	7000'
g. 1st Bone Spring Lime	8300'
h. Total Depth	8350'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas

a. Upper Permian Sands		Fresh Water
b. Delaware	4410'	Oil
c. Delaware (Cherry Canyon)	6010'	Oil
d. Delaware (Brushy Canyon)	8025'	Oil

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 850' and circulating cement back to surface. Potash and salt will be protected by setting 8 5/8" casing at 4400' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 8 5/8" casing.

4. Casing Program:

Hole Size	Interval	OD Csg	Weight	Collar	Grade
25"	0' –40'	20"	Na	Na	Conductor
17 ½"	0' – 850'	13 3/8"	48#	ST&C	H-40
11"	0' – 4400'	8 5/8"	32#	ST&C	J55
7 7/8"	0' – 8350'	5 ½"	15.5# & 17#	LT&C	K55, N-80

5. **Cement & Setting Depth:**

a.	20"	Conductor	Cement with ready-mix to surface.
b.	13 3/8"	Surface	Cement to surface with 460 sx Poz C (35:65) + 6% Gel + ¼# sx Flocele followed by 200 sx Class C + 2% CC
c.	8 5/8"	Intermediate	Cement to surface with 1600 sx Poz C (35:65) + 6% Gel + 10% salt + ¼# sx Flocele followed by 200 sx Class C + 2% CC + 0.25 lb/sx Flocele.
d.	5 ½"	Production	Cement with 600 sx Class H + 3% Salt + 0.6% Halad 322 + 10#/sx Silicalite + ¼# sx Flocele. Stage Tool @ 5500'. Cement with 500 sx Poz H (35:65) + 6% Gel + 5% salt + ¼# sx Flocele followed by 100 sx Class H as in first stage.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach above the 8 5/8" casing seat @ 4400'

6. **Pressure Control Equipment:**

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (3M system) double ram type (3000 psi WP) preventor and a bag-type (Hydril) preventor (3000 psi WP). Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4 ½" drill pipe rams on bottom. Both BOP's will be installed on the 13 3/8" surface casing and utilized continuously until total depth is reached. All BOP's and associated equipment will be tested to 1200 psi before drilling out the 13 3/8" casing shoe (70% of 48#, H-40 casing). Prior to drilling out the 8 5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

Pipe rams will be operated and check each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 3000 psi WP rating.

7. **Proposed Mud Circulation System**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 850'	8.8	34 – 36	NC	Fresh Water
850' – 4400'	10.0	28	NC	Brine Water
4400' – TD	8.8	32 – 36	10-20	Fresh water Polymer

The necessary mud products for weight addition and fluid loss control will be on location at all times.

8. **Auxiliary Well Control and Monitoring Equipment:**
   a. A Kelly cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

c. Hydrogen Sulfide detection equipment will be in operations after drilling out the 13 3/8" casing shoe until the 8 5/8" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8' shoe until total depth is reached.

9. Logging, Coring, and Testing Program:

a. Drill stem tests will be based on geological sample shows.

b. The open hole electrical logging program will be:

i. Total Depth to Intermediate Casing — Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.

ii. Total Depth to Surface — Compensated Neutron with Gamma Ray

iii. No coring program is planned

iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6 No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2900 psi and Estimated BHT 125°.

11. Anticipated Starting Date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

SURFACE USE PLAN
Devon Energy Production Company, LP
Todd 26E Federal #18
Surface Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM
Bottom hole Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed are reflected on Exhibit 2. The well was staked by John West Engineering Company.
   b. All roads into the location are depicted on Exhibit 3.
   c. Directions to Location: Travel west-northwest from Jal, NM approximately 35 miles on State Hwy #128 to CD #798, just into Eddy County from Lea County. Turn north (right) on #798 and travel approximately 1.7 miles. Turn west (left) onto the Todd 26 Federal #1 entry road and go approximately 0.60 mile to the Todd 26 #3 SWD well location. Continue ±1300 feet west/southwest to location.
2. **Access Road**
   a. Exhibit #3 shows the existing lease road. Approximately 1300' of new access road will be constructed from the Todd 26 Federal #3 location. It will be constructed as follows:
   b. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
   c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
   d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. **Proposed Facilities**
   a. In the event the well is found productive, a tank battery would be constructed and the necessary production equipment will be installed at the well site.
   b. If necessary, the well will be operated by means of an electric prime mover. Electric power poles will be set along side of the access road.
   c. The tank battery, all connections and all lines will adhere to API standards.
   d. The well will be operated by means of a gas driven prime mover. No power will be required.
   e. If the well is productive, rehabilitation plans are as follows:
      i. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
      ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.
4. **Methods of Handling Waste Material:**
   a. Drill cuttings will be disposed of in the reserve pits.
   b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
   c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
   d. Wastewater from living quarters will be drained into hole with a minimum of 10'. These holes will be covered during drilling and will be back filled when the well is completed. A Porto-john

will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete

e. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. Later pits will be broken out to speed dry. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in a storage tank and sold.

5. Well Site Layout

a. Exhibit D Shows the proposed well site layout.
b. This exhibit indicated proposed location of reserve and sump pits and living facilities.
c. Mud pits in the active circulating system will be steel pits & the reserve pits is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
d. If needed, the reserve pit is to be lined with polyethylene. The pit liner will be 6 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will b anchored down.
e. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

6. Other Information:

a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebrush, yucca and miscellaneous weeds.
b. The well site is owned by Mr. J. C. Mills, P. O. Box 190, Abernathy, TX 79311. Road routes and damages have been settled.
c. An archaeological survey was submitted to the Bureau of Land Management on September 18, 1992. Permit NO. 14-2920-92-M. Report Number NMAS-1992-15-S.
d. There are no dwellings within 2 miles of location.

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

James Blount
Operations Engineer Advisor

Devon Energy Production Company, L.P.
20 North Broadway, Suite 1500
Oklahoma City, OK 73102-8260

(405) 228-4301 (office)
(405) 834-9207 (Cellular)

Don Mayberry
Superintendent

Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250

(505) 748-3371 (office)
(505) 746-4945 (home)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Devon Energy Production Company, L.P. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Signed: _____ Date: September 25, 2003

Karen Cottom
Operations Technician

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Todd 26E Federal #18
Surface Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM
Bottom hole Location: 2310' FNL & 660' FWL, Unit E, Sec 26 T23S R31E, Eddy, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name:	**Devon Energy Production Company, LP**
Street or Box:	**20 North Broadway, Suite 1500**
City, State:	**Oklahoma City, Oklahoma**
Zip Code:	**73102-8260**

The undersigned accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described below.

Lease No.:	**NMNM0405444-A**
Legal Description of Land:	**40 acres 26-T23S-R31E**
Formation(s):	**Delaware**
Bond Coverage:	**Nationwide**
BLM Bond File No.:	**CO-1104**
Authorized Signature:	Karen Cottom **Karen Cottom**
Title:	**Operations Technician**
Date:	9/25/03

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
   a. Characteristics of H2S
   b. Physical effects and hazards
   c. Proper use of safety equipment and life support systems.
   d. Principle and operation of H2S detectors, warning system and briefing areas
   e. Evacuation procedures, routes and first aid.
   f. Proper use of 30-minute pressure demand air pack.

2. H2S Detection and Alarm System
   a. H2S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.

3. Windsock and/or wind streamers
   a. Windsock at mud pit area should be high enough to be visible
   b. Windsock at briefing area should be high enough to be visible
   c. There should be a windsock at entrance to location

4. Condition Flags and Signs
   a. Warning Sign on access road to location
   b. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location.

5. Well Control Equipment
   a. See Exhibit "E" & "E-1"

6. Communication
   a. While working under masks chalkboards will be used for communication.
   b. Hand signals will be used where chalk board is inappropriate
   c. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7. Drill stem Testing
   a. Exhausts will be watered
   b. Flare line will be equipped with an electric igniter or a propane pilot light in case gas reaches the surface.
   c. If the location is near to a dwelling a closed DST will be performed.

8. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
   If H2S is encountered, mud system will be altered if necessary to maintain control or formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator		Lease		Well No.
DEVON ENERGY CORP. 6137		TODD FEDERAL "26"		18
Unit Letter	**Section**	**Township**	**Range**	**County**
E	26	23 SOUTH	31 EAST NMPM	EDDY

Actual Footage Location of Well:
2310 feet from the NORTH line and 660 feet from the WEST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3431.6'		Undesignated	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

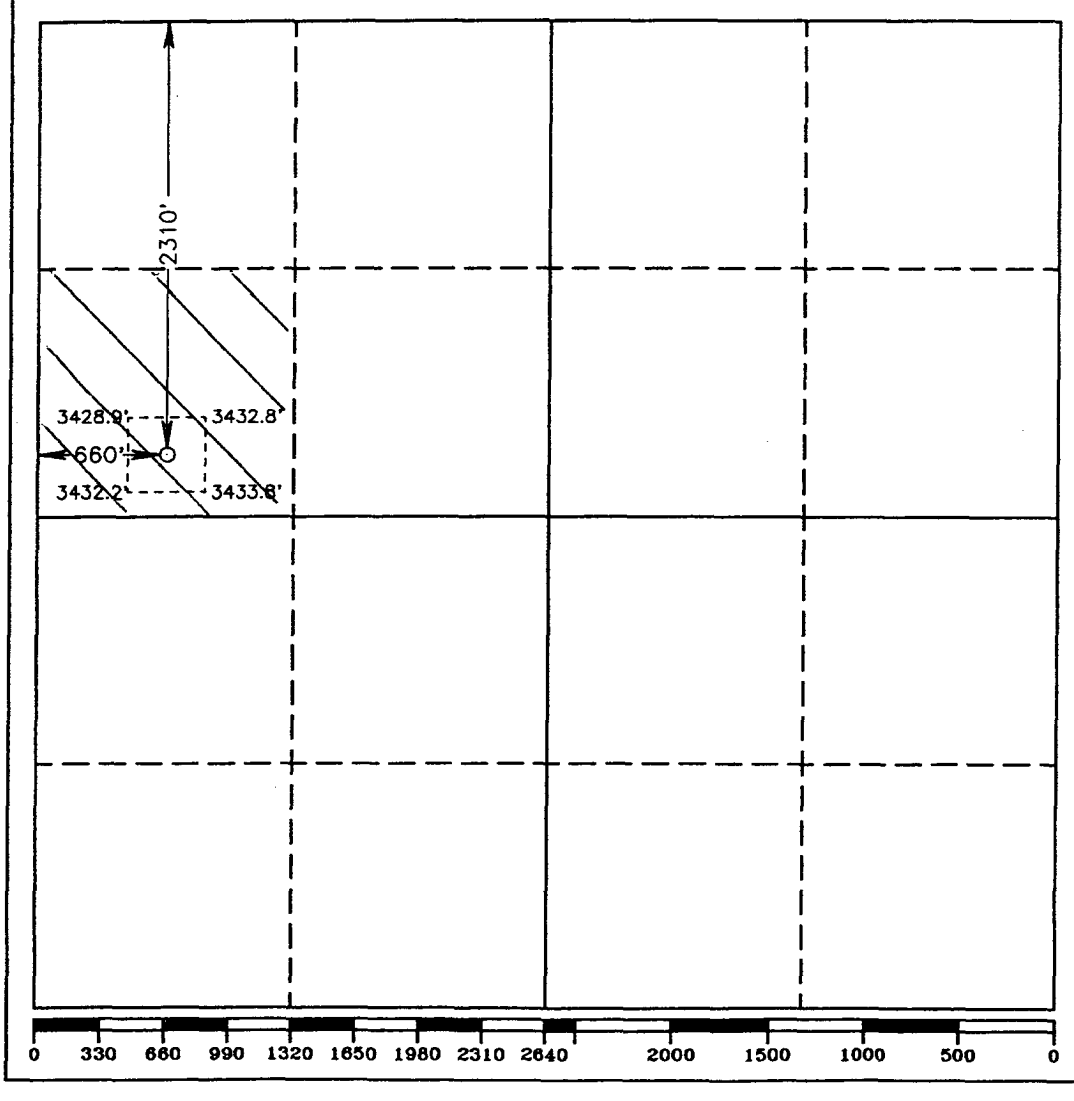
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list of owners and tract descriptions which have actually been consolidated. (Use reverse side of this form necessary. _____

No allowable will be assigned to the well unit all interests have been consolidated (by communitization, unitization, forced-pooling, otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature: Karen Cottom

Printed Name: Karen Cottom

Position: Operations Technician

Company: Devon Energy Production CO.

Date: September 25 2003

SURVEYOR CERTIFICATION

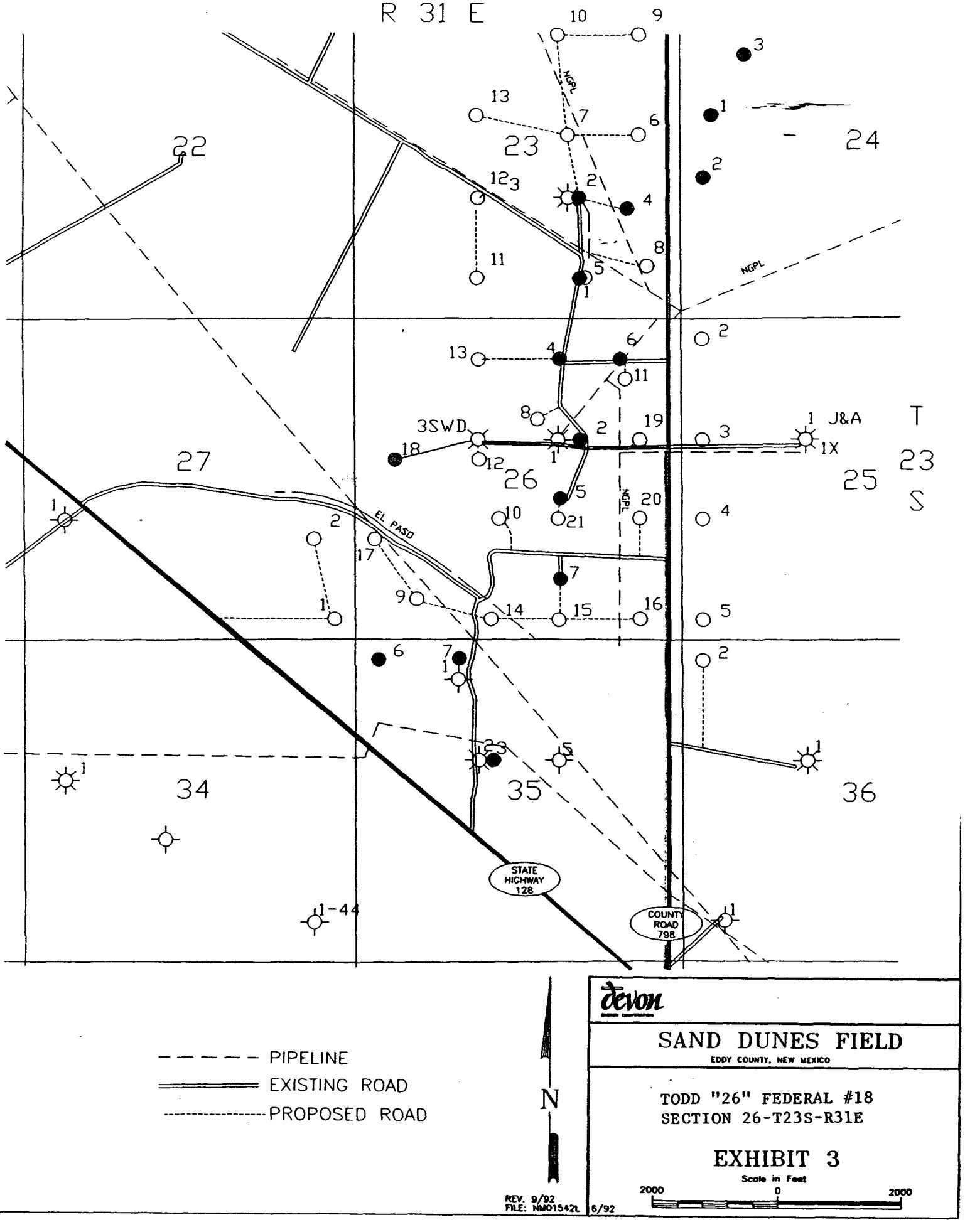
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: SEPTEMBER 9, 1992

Signature & Seal of Professional Surveyor

REGISTERED LAND SURVEYOR
NEW MEXICO
92-11-1330

Certificate No. JOHN W. WEST 676
RONALD J. EIDSON 3239
GARY L. JONES 7977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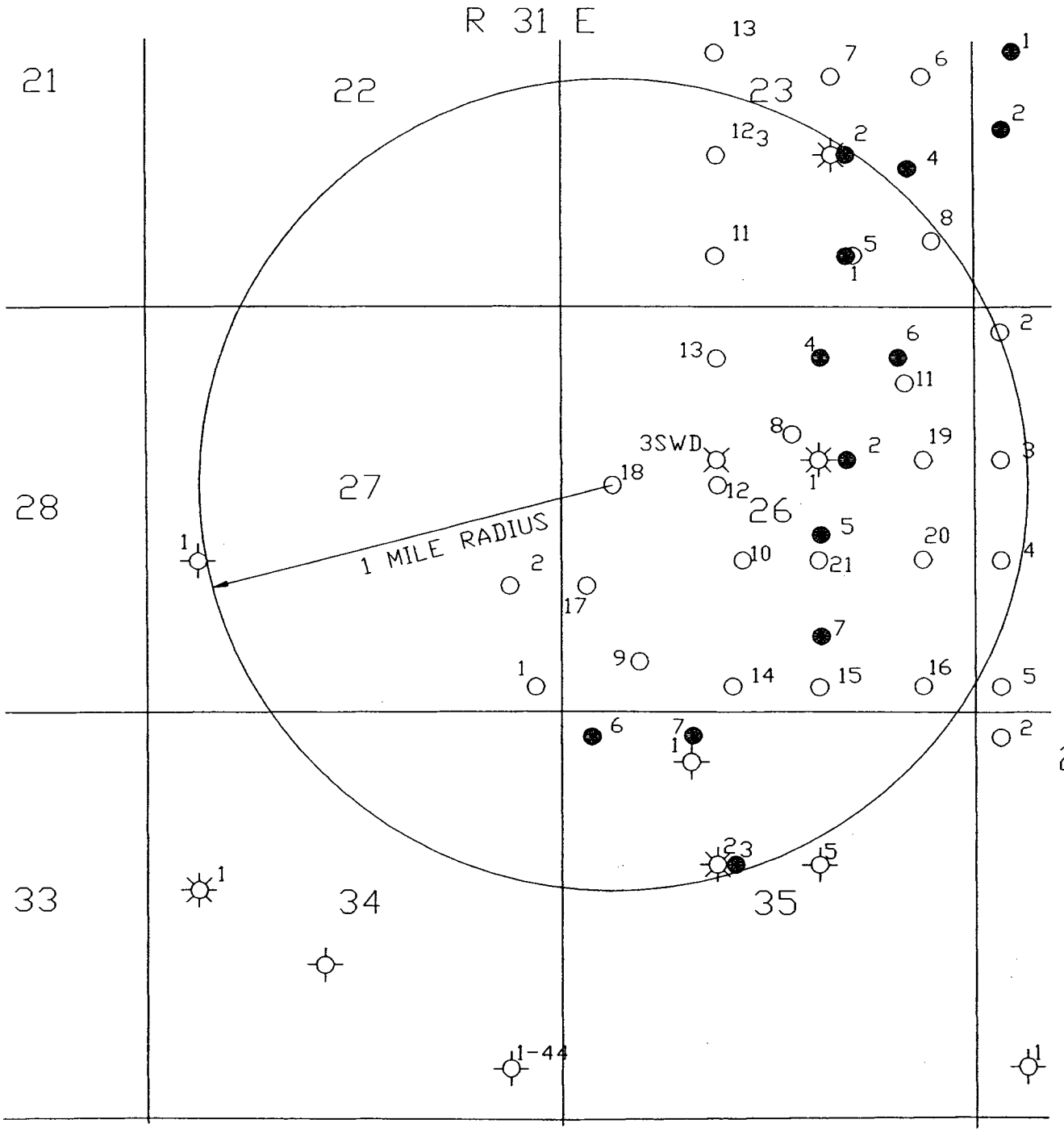
NGPL
EL PASO
STATE HIGHWAY 128
COUNTY ROAD 798
3SWD
1 J&A
1X
1-44
PIPELINE
EXISTING ROAD
PROPOSED ROAD
N
devon
SAND DUNES FIELD
EDDY COUNTY, NEW MEXICO
TODD "26" FEDERAL #18
SECTION 26-T23S-R31E
EXHIBIT 3
Scale in Feet
2000
0
2000
REV. 9/92
FILE: NM01542L
6/92



devon
ENERGY CORPORATION

SAND DUNES FIELD

EDDY COUNTY, NEW MEXICO

WELLS WITHIN 1 MILE RADIUS

TODD-26 FED-18

EXHIBIT 4

Scale in Feet

2000 0 2000

File: 26-18

9/92

Attachment to Exhibit #4

STATUS OF WELLS WITHIN ONE MILE RADIUS
Todd "26" Federal #18
Section 26-T23S-R31E
Eddy County, New Mexico
September 1992

Sec. 23-T23S-R31E

Devon Energy Corp

Todd "23" Federal #1	660' FSL & 1650' FEL	Delaware Oil Well
Todd "23" Federal #2	1980' FSL & 1650' FEL	Delaware Oil Well
Todd "23" Federal #3	1980' FSL & 1800' FEL	Atk/Mrw Gas Well

Sec. 26-T23S-R31E

Devon Energy Corp

Todd "26" Federal #1	3300' FSL & 1980' FEL	Atoka Gas Well
Todd "26" Federal #2	3300' FSL & 1650' FEL	Delw Oil Well-TA
Todd "26" Federal #3	3300' FSL & 3300' FEL	Delw Wtr Inj Well
Todd "26" Federal #4	4620' FSL & 1980' FEL	Delaware Oil Well
Todd "26" Federal #5	2310' FSL & 1980' FEL	Delaware Oil Well
Todd "26" Federal #6	4620' FSL & 990' FEL	Delw Oil Well-TA
Todd "26" Federal #7	990' FSL & 1980' FEL	Delw Oil Well-TA

Sec. 35-T23S-R31E

Pogo Producing

Cal-Mon #1	660' FNL & 1650' FWL	D & A
Cal-Mon #2	1980' FNL & 1980' FWL	Delaware Oil Well
Cal-Mon #3	1980' FNL & 2180' FWL	Delw Oil Well-TA
Cal-Mon #6	330' FNL & 330' FWL	Delaware Oil Well
Cal-Mon #7	330' FNL & 1650' FWL	Delaware Oil Well

Todd "26" Federal #18
Eddy County, New Mexico
EXHIBIT #7

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: TODD FEDERAL
Project ID:	Location:

Design Parameters:

Mud weight (9.20 ppg) : 0.478 psi/ft
Shut in surface pressure : 765 psi
Internal gradient (burst) : 0.100 psi/ft
Annular gradient (burst) : 0.000 psi/ft
Tensile load is determined using air weight
Service rating is "Sweet"

Design Factors:

Collapse : 1.125
Burst : 1.00
8 Round : 1.80 (J)
Buttress : 1.60 (J)
Body Yield : 1.50 (B)
Overpull : 0 lbs.

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	850	13-3/8	48.00	WC-40	ST&C	850	12.559	

	Collapse Load (psi)	Collapse Strgth (psi)	Collapse S.F.	Burst Load (psi)	Min Int Yield Strgth (psi)	Burst S.F.	Tension Load (kips)	Tension Strgth (kips)	Tension S.F.
1	406	740	1.823	850	1700	2.00	40.80	308	7.55 J

Prepared by : C. W. HORSMAN, Oklahoma City, OK
Date : 08-17-1992
Remarks :

Minimum segment length for the 850 foot well is 800 feet.
Surface string:
Next string will set at 4,400 ft. with 10.00 ppg mud (pore pressure of 2,286 psi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 850 psi. Effective BHP (for burst) is 850 psi.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.0G)

Todd "26" Federal #18
'dy County, New Mexico
..HIBIT #7

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: TODD FEDERAL
Project ID:	Location:

Design Parameters:

Mud weight (9.80 ppg) : 0.509 psi/ft
Shut in surface pressure : 3596 psi
Internal gradient (burst) : 0.100 psi/ft
Annular gradient (burst) : 0.000 psi/ft
Tensile load is determined using air weight
Service rating is "Sweet"

Design Factors:

Collapse : 1.125
Burst : 1.00
8 Round : 1.80 (J)
Buttress : 1.60 (J)
Body Yield : 1.50 (B)
Overpull : 0 lbs.

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	4,000	8-5/8"	32.00	WC-50	ST&C	4,000	7.796	
2	400	8-5/8"	32.00	J-55	ST&C	4,400	7.875	

	Collapse Load (psi)	Collapse Strgth (psi)	Collapse S.F.	Burst Load (psi)	Min Int Yield Strgth (psi)	Burst S.F.	Tension Load (kips)	Tension Strgth (kips)	Tension S.F.
1	2036	2421	1.189	3596	3600	1.00	140.80	341	2.42 J
2	2240	2530	1.129	3636	3930	1.08	12.80	372	29.06 J

Prepared by : C. W. HORSMAN, Oklahoma City, OK
Date : 08-17-1992
Remarks :

Minimum segment length for the 4,400 foot well is 800 feet.
Surface/Intermediate string:
Next string will set at 8,400 ft. with 9.25 ppg mud (pore pressure of 4,036 psi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 4,400 psi. Effective BHP (for burst) is 3,636 psi.
The minimum specified drift diameter is 7.875 in.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.0G)

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTORS
Todd "26" Federal #18
Eddy County, New Mexico

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOPE bore.

2. Wear ring will be properly installed in head.

3. Blowout preventor and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 3000 psi W.P. with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

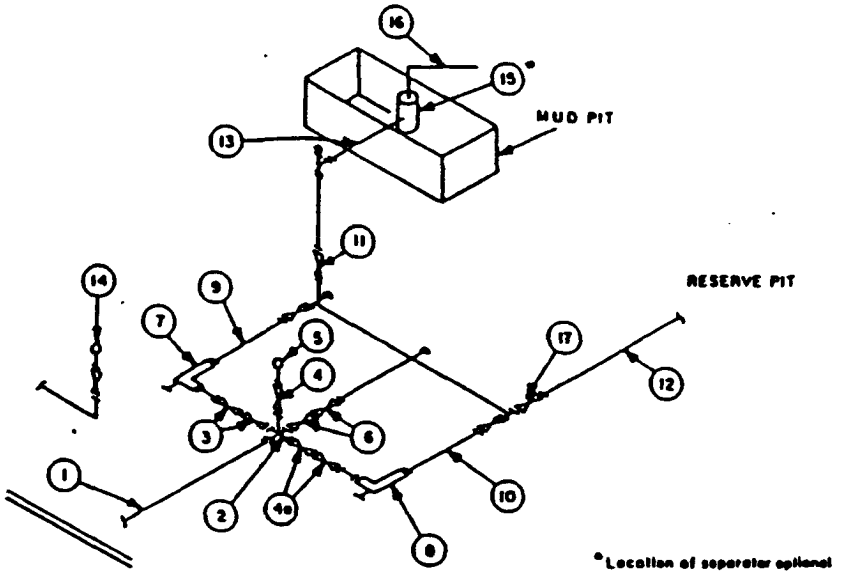
10. Hydraulic floor control for blowout preventor will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

TODD "26" FEDERAL #18
EDDY COUNTY, NEW MEXICO
EXHIBIT #1-A

MINIMUM CHOKE MANIFOLD
3,000, 5,000 and 10,000 PSI Working Pressure

3 MWP - 5 MWP - 10 MWP



MINIMUM REQUIREMENTS										
		3,000 MWP			5,000 MWP			10,000 MWP		
No.		I.D	NOMINAL	RATING	I.D.	NOMINAL	RATING	I.D.	NOMINAL	RATING
1	Line from drilling spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3"x3"x3"x2"			3,000			5,000			
	Cross 3"x3"x3"x3"									10,000
3	Valves(1) Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate ☐ Plug ☐(2)	1-13/16"		3,000	1-13/16"		5,000	1-13/16"		10,000
4a	Valves(1)	2-1/16"		3,000	2-1/16"		5,000	3-1/8"		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
7	Adjustable Choke(3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		3"	10,000
11	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
12	Lines		3"	1,000		3"	1,000		3"	2,000
13	Lines		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound standpipe pressure gauge			3,000			5,000			10,000
15	Gas Separator		2'x5'			2'x5'			2'x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valves Gate ☐ Plug ☐(2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000

(1) Only one required in Class 3M.

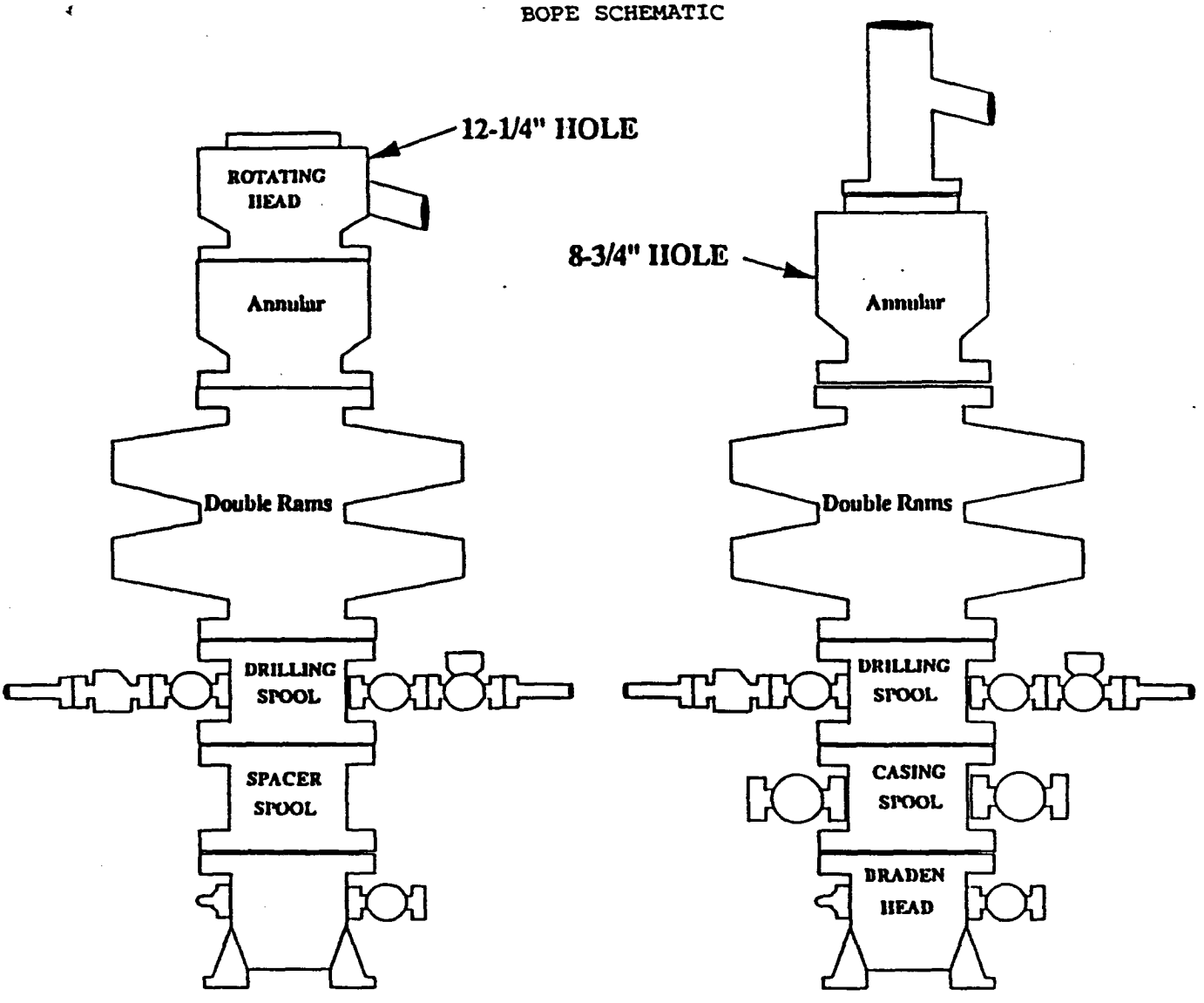
(2) Gate valves only shall be used for Class 10M.

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

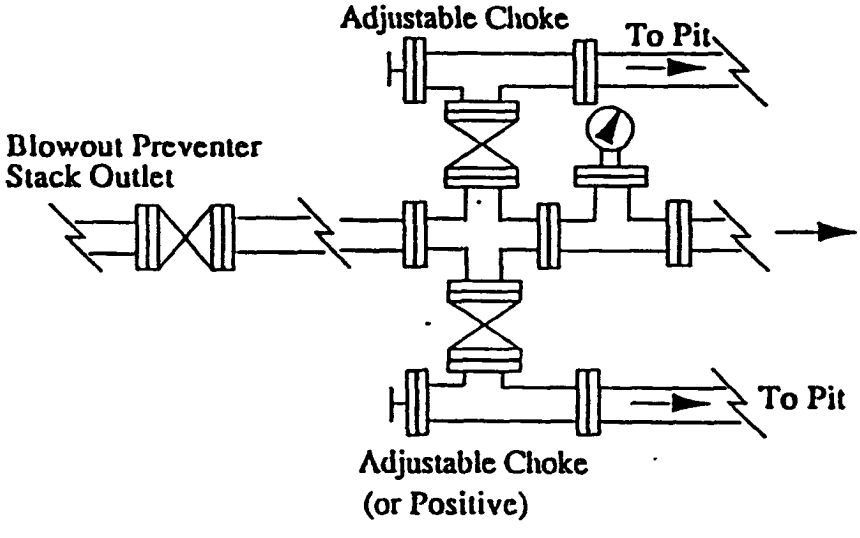
EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines shall be securely anchored.
4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
5. Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90° bends using bull plugged tees.
7. Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

BOPE SCHEMATIC



Choke Manifold Requirement (3000 psi WP)



Minimum 4" Nominal choke and kill lines