

UNIT STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN
(See other instructions on
reverse side)

OPERATOR'S COPY
Form approved. *CLSF*

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK: DRILL ☒ DEEPEN ☐

b. TYPE OF WELL:

OIL WELL ☒ GAS WELL ☐ Other ☐ SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR

DEVON ENERGY CORPORATION (NEVADA) *6137*

3. ADDRESS AND TELEPHONE NO.

20 N. BROADWAY, SUITE 1500, OKC, OK 73102 (405) 235-3611

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface 660' FSL & 1980' FWL, Unit N, Section 11-T23S-R31E, Eddy Cnty, NM

At top proposed prod. zone (SAME)

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

35 miles WNW of Jal, New Mexico

15. DISTANCE FROM PROPOSED
LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT. 660'
(Also to nearest drlg. unit line if any)

16. NO. OF ACRES IN LEASE

1440

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT. 2951'

19. PROPOSED DEPTH

8800'

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

GL 3453'

5. LEASE DESIGNATION AND SERIAL NO.

NM-NM0404441

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME, WELL NO.

Barclay "11N" Federal #14

9. API WELL NO.

30-015- 32333

10. FIELD AND POOL, OR WILDCAT

Ingle Wells (Delaware)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

Unit N

Section 11-T23S-R31E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

17. NO. OF ACRES ASSIGNED
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS*

Rotary

22. APPROX. DATE WORK WILL START*

fourth quarter, 1998

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8" H-40	48#	850'	500 sx 35/65 Poz + 200 sx Class "C"
11"	8 5/8" J-55	32#	4350'	1600 sx 35/65 Poz + 200 sx Class "C"
7 7/8"	5 1/2" J-55	15.5# & 17#	8800'	1st Stage 525 sx Silica Lite Class "H"
DV Tool +/- 5500'				2nd Stage 225 sx 35/65 Poz + 400 sx Class "H"

Devon Energy proposes to drill to approximately 8800' to test the Delaware for commercial quantities of oil. If the Delaware is deemed non-commercial, the wellbore will be plugged and abandoned as per Federal regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

Drilling Program, Surface Use and Operating Plan

Exhibits #1 = Blowout Prevention Equipment

Exhibit #2 = Location and Elevation Plat

Exhibits #3 = Road Map and Topo Map

Exhibit #4 = Wells Within 1 Mile Radius

Exhibits #5 = Production Facilities Plat

Exhibit #6 = Rotary Rig Layout

Exhibit #7 = Casing Design

H₂S Operating Plan, Archaeological Survey

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

Lease #: NM-NM0404441

Legal Description: Section 11-T23S-R31E

Bond Coverage: Nationwide

BLM Bond #: CO-1104

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

Candace R. Graham

Candace R. Graham

TITLE Engineering Technician

DATE June 12, 1998

*(This space for Federal or State office use)

PERMIT NO. _____

APPROVAL DATE _____

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:

APPROVED BY

R. A. Whitley

TITLE

Active

STATE DIRECTOR

DATE

JUN 12 1998

See Instructions On Reverse Side

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED

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

DISTRICT I
P. O. Box 1980
Hobbs, NM 88241-1980

DISTRICT II
P. O. Drawer DD
Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd.
Aztec, NM 87410

DISTRICT IV
P. O. Box 2088
Santa Fe, NM 87507-2088

State of New Mexico
Energy, Minerals, and Natural Resources Department

EXHIBIT #

2

Form C-102
Revised 02-10-94

Instructions on back

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

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 33745	³ Pool Name Ingle Wells (Delaware)
⁴ Property Code	⁵ Property Name BARCLAY 11 N FEDERAL	⁶ Well Number 14
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY CORPORATION (NEVADA)	⁹ Elevation 3453'

¹⁰ SURFACE LOCATION

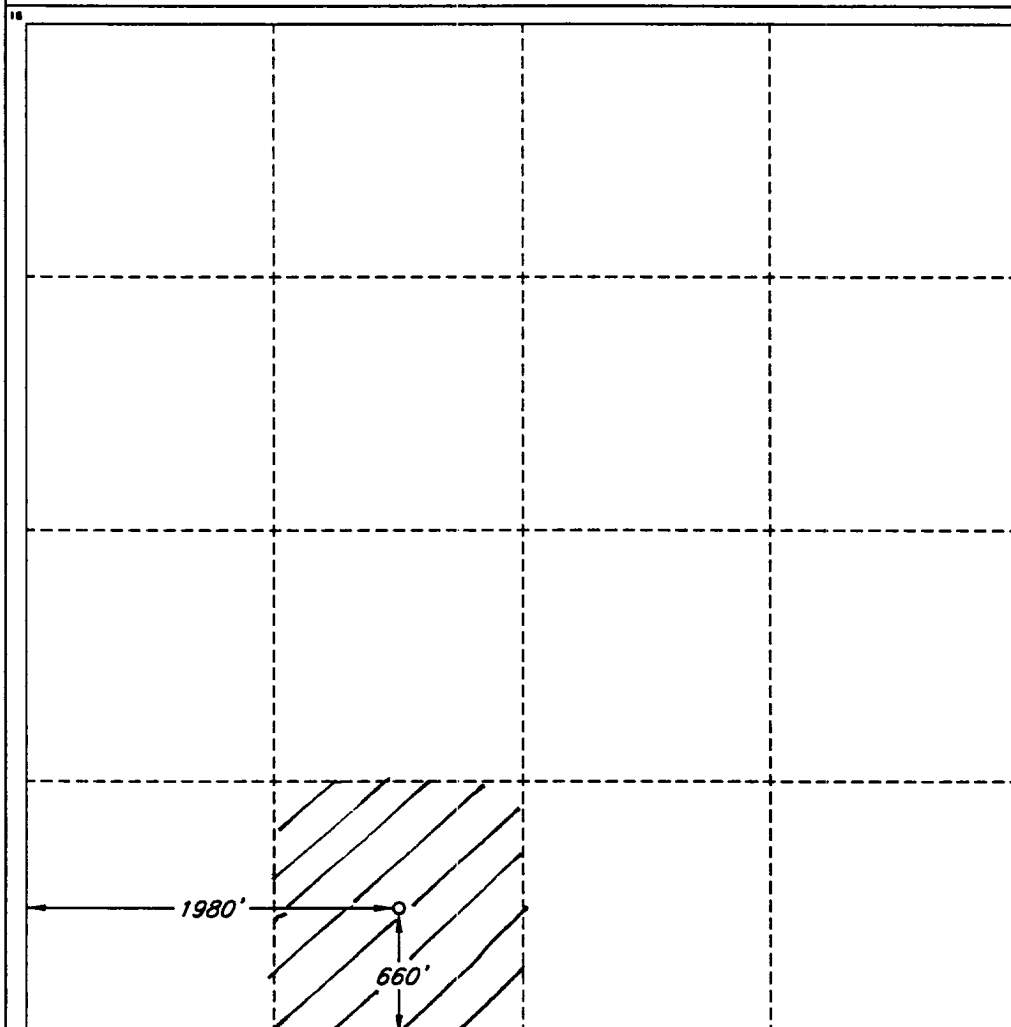
UL or lot no. N	Section 11	Township 23 SOUTH	Range 31 EAST, N.M.P.M.	Lot Ida	Feet from the 660'	North/South line SOUTH	Feet from the 1980'	East/West line WEST	County EDDY
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"BOTTOM HOLE LOCATION IF DIFFERENT FROM SURFACE

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
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¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WELL 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.

Signature

Candace R. Graham

Printed Name

Candace R. Graham

Title

Engineering Technician

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

Signature
Professional

Roger M. Robbins
12128
REGISTERED PROFESSIONAL SURVEYOR
Certificate
ROGER M. ROBBINS P.S. #12128

MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

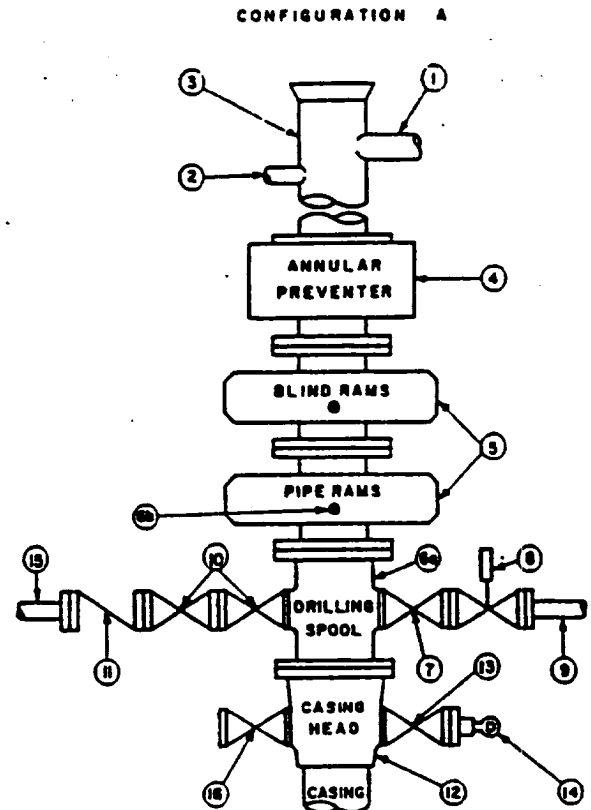
3 MWP

EXHIBIT # 1

STACK REQUIREMENTS

No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to choke manifold		3"
10	Valves Gate <input type="checkbox"/> Plug <input type="checkbox"/>	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/>	1-13/16"	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL			
16	Flanged valve	1-13/16"	



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casinghead and side valves.
2. Wear bushing, if required.

GENERAL NOTES:

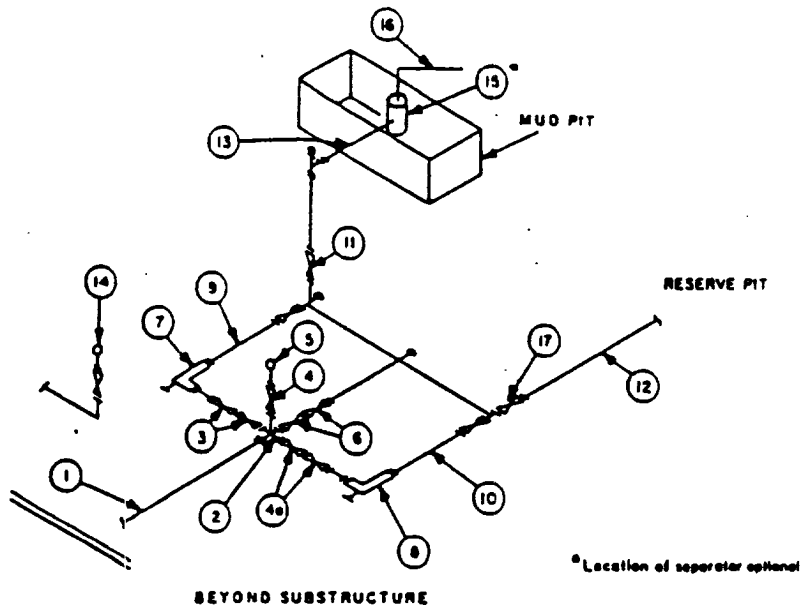
1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through chokes. Valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with handwheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.

7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.

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

EXHIBIT # 1

3 MWP - 5 MWP - 10 MWP



MINIMUM REQUIREMENTS										
No		3,000 MWP			5,000 MWP			10,000 MWP		
		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 <input type="checkbox"/> Plug <input type="checkbox"/> (2)	3-1/8"		3,000	3-1/8"		5,000	3-1/8"		10,000
4	Valve Gate <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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 <input type="checkbox"/> Plug <input type="checkbox"/> (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.

Exhibit #1A
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Corporation (Nevada)
BARCLAY "11N" FEDERAL #14
660' FSL & 1980' FWL
Section 11-T23S-R31E, Unit N
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 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.

DRILLING PROGRAM

Attached to Form 3160-3
Devon Energy Corporation (Nevada)
BARCLAY "11N" FEDERAL #14
660' FSL & 1980' FWL
Section 11-T23S-R31E, Unit N
Eddy County, New Mexico

1. Geologic Name of Surface Formation

Permian

2. Estimated Tops of Important Geologic Markers

Rustler	800'
Top of Salt	1100'
Base of Salt	3900'
Bell Canyon	4400'
Cherry Canyon	5600'
Brushy Canyon	7000'
Bone Spring Lime	8300'
Total Depth	8800'

3. Estimated Depths of Possible Fresh Water-, Oil-, or Gas-Bearing Formations

Upper Permian Sands	above 800'	fresh water
Delaware (Bell Canyon)	4400'	oil
Delaware (Cherry Canyon)	6000'	oil
Delaware (Brushy Canyon)	8000'	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. The Potash and Salt intervals will be protected by setting 8 5/8" casing at 4350' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 8 5/8" casing.

4. Casing Program

<u>Hole Size</u>	<u>Interval</u>	<u>Casing OD</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>
30"	0-40'	20"		Conductor	0.30" wall
17 1/2"	0-850'	13 3/8"	48#	H-40	ST&C, new R-3
11"	0-4350'	8 5/8"	32#	J-55	ST&C, new R-3
7 7/8"	0'-TD (8800'±)	5 1/2"	15.5# & 17#	J-55	LT&C, new R-3

Cementing Program

20" Conductor Casing	Cement with Ready-mix to surface.
13 3/8" Surface Casing	Cement to surface using 500 sx Poz (35% Poz, 65% Class C, 6% gel) with 2% CaCl ₂ and 1/4 lb/sx Cellophane flakes + 200 sx Class C with 2% CaCl ₂ and 1/4 lb/sx Cellophane flakes.
8 5/8" Intermediate Casing	Cement to surface using 1600 sx Poz (35% Poz, 65% Class C, 6% gel, 15% salt) with 1/4 lb/sx Cellophane flakes + 200 sx Class C with 2% CaCl ₂ , 1/4 lb/sx Cellophane flakes
5 1/2" Production Casing with DV tool at ±5500'	Cement 1st stage with 525 sx Silica Lite (Class H) with 3% salt, 0.6% FL additive, 1/4 lb/sx Cellophane flakes Cement 2nd stage with 225 sx Poz (35% Poz, 65% Class H, 6% gel) with 1/4 lb/sx Cellophane flakes + 400 sks Class H with 4% gel, 5% salt, and 1/4 lb/sx Cellophane flakes.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach 450'± above the 8 5/8" casing seat at 4350'.

5. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a (3M system) double ram type (2000 psi WP) preventer and a bag-type (Hydril) preventer (2000 psi WP). Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 4 1/2" 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 function tested as per BLM drilling Operations Order #2.

Pipe rams will be operated and checked 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.

6. Types and Characteristics of the Proposed Mud System

The well will be drilled to total depth using brine, cut brine and polymer mud systems. Depths of systems are as follows.

<u>Depth</u>	<u>Type</u>	<u>Weight (ppg)</u>	<u>Viscosity (1/sec)</u>	<u>Water Loss (cc/30 mins)</u>
0-850'	Fresh water	8.8	34-36	No control
850-4350'	Brine water	10.0	28	No control
4350'-TD	Fresh water polymer	8.8	32-36	10-20

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

7. 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 (Compliance Package) will be in operation from drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented.

8. Logging, Testing and Coring Program

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

B. The open hole wireline logging program will be as follows.

TD to intermediate casing: Induction / Gamma Ray / Neutron / Density Log.

TD to surface: Neutron with Gamma Ray.

C. Rotary sidewall cores are planned.

D. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Abnormal Pressures, Temperatures and Potential Hazards

No abnormal pressures or temperatures are foreseen. The anticipated bottom hole temperature at total depth is approximately 130 degrees and maximum bottom hole pressure is approximately 2900 psig. No hydrogen sulfide gas has been reported or is known to exist at these depths in this area. No major lost circulation intervals have been encountered in adjacent wells.

10. Anticipated Starting Date and Duration of Operations

A Cultural Resources Examination will be completed by Don Clifton Archaeological Consultant and submitted to the BLM. Road and location preparation will not be undertaken until approval has been received from the BLM. If approved, the anticipated spud date for the well will be in the fourth quarter, 1998. The drilling operation should require approximately 21 days. If the well is deemed productive, completion operations will require, at minimum, an additional 30 days of testing to ascertain whether permanent production facilities will be constructed.

SURFACE USE AND OPERATING PLAN

Attachment to Form 3160-3
Devon Energy Corporation (Nevada)
BARCLAY "11N" FEDERAL #14
660' FSL & 1980' FWL
Section 11-T23S-R31E, Unit N
Eddy County, New Mexico

1. Existing Roads

- A. The well site and elevation plat for the proposed BARCLAY "11N" FEDERAL #14 are reflected on Exhibit #2. This well was staked by Topographic Land Surveyors of Midland, Texas.
- B. All roads into the location are depicted in Exhibit #3. New construction from the County road will be used to access the location. New construction will conform to the specifications outlined in item 2 below.
- C. Directions to location: Travel west-northwest from Jal, NM approximately 35 miles on State Highway #128 to County Road #798, just into Eddy County from Lea County. Turn north (right) on County Road #798 and travel approximately 4.2 miles. Then, turn west (left) onto existing lease road. Go approximately 0.50 mile to the proposed location of BARCLAY "11N" FEDERAL #14.

2. Proposed Access Road

Access to this location will require the construction of approximately 2180' of new access road from the County road. All new construction will adhere to the following specifications:

- A. The maximum width of the road will be fifteen (15) feet.
- B. It will be crowned and made of six (6) inches 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.
- D. The average grade will be approximately 1%.

E. No cattle guards, grates or fence cuts will be required.

F. No turnouts are planned.

3. Location of Existing Wells

Exhibit #4 shows all existing wells within a one-mile radius of the proposed BARCLAY "11N" FEDERAL #14.

4. Location of Existing and/or Proposed Facilities

A. In the event the well is found productive, a tank battery will be built on the Barclay "11O" Federal #15 location.

1. Exhibit #5 shows the battery facility to be utilized by the BARCLAY "11N" FEDERAL #14. This facility may be upgraded to include one or two additional 500 barrel tanks.
2. The tank battery, all connections and all lines will adhere to API standards.
3. The well will be operated by means of an electric prime mover. Power poles will be set along the access road right-of-way.

B. If the well is productive, rehabilitation plans are as follows.

1. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
2. Caliche from unused portions of the drill pad will be removed. The original topsoil from the well site will be returned to the location. The drill site will then be contoured to the original natural state.

5. Location and Type of Water Supply

The BARCLAY "11N" FEDERAL #14 will be drilled using a combination of brine and fresh water mud systems (outlined in Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in Exhibit #3. Additionally, produced salt water from lease gathering tanks may be utilized. No water well will be drilled on the location.

6. Source of Construction Materials

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.

7. Methods of Handling Water Disposal

- A. Drill cuttings will be disposed into the reserve pit.
- B. Drilling fluids will be contained in steel mud tanks. The reserve pit will contain excess drilling fluid or fluid from the well during drilling, cementing and completion operations. The reserve pit will be an earthen pit roughly 125' x 125' x 6', or smaller, in size.
- C. The reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 5-7 mil plastic to minimize loss of drilling fluids and saturation of the ground with brine water used to drill from 850' to 4350'.
- D. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks. Produced oil will be separated into steel stock tanks until sold.
- E. A portable chemical toilet will be available on the location for human waste during the drilling operations.
- F. Garbage, trash and waste paper produced during drilling operations will be collected in a contained trailer and disposed at an approved landfill. All waste

material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be generated by this operation.

- G. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it has dried. At the point the reserve pit is found sufficiently dry, it will be backfilled and reclaimed as per BLM specifications. Only the portion of the drilling pad used by the production equipment (pumping unit and tank battery) will remain in use. If the well is deemed non-commercial, only a dry hole marker will remain.

8. Ancillary Facilities

No campsite or other facilities will be constructed as a result of this well.

9. Well Site Layout

- A. The drill pad is shown on Exhibit #6. Approximate dimensions of the pad, pits and general location of the rig equipment are displayed. Top soil will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pad which will be covered with 6" of compacted caliche.
- B. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.
- C. The reserve pit will be lined using plastic sheeting of 5-7 mil thickness.

10. Plans for Restoration of Surface

- A. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.

- B. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
- C. The location and road will be rehabilitated as recommended by the BLM.
- D. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.
- E. If the well is deemed commercially productive, the reserve pit will be restored as described in 10 (A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

11. Surface Ownership

The well site is owned by the Bureau of Land Management.

Road routes have been approved and the surface location will be restored as directed by the BLM.

12. Other Information

- A. The area surrounding the well site is grassland. The top soil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebrush, yucca and miscellaneous weeds.
- B. There is no permanent or live water in the general proximity of the location.
- C. A Cultural Resources Examination will be completed by Don Clifton Archaeological Consultant, and a copy forwarded to the BLM office in Carlsbad, New Mexico.

13. Lessee's and Operator's Representative

The Devon Energy Corporation (Nevada) representatives responsible for ensuring compliance of the surface use plan are:

Walter Frank
District Engineer

Daryl Lowder
Superintendent

DEVON ENERGY CORPORATION
20 North Broadway, Suite 1500
Oklahoma City, OK 73102-8260

DEVON ENERGY CORPORATION
P. O. Box 250
Artesia, NM 88211-0250

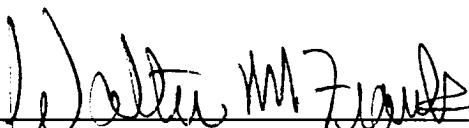
(405) 552-4595 (office)
(405) 364-3504 (home)

(505) 748-3371 (office)
(505) 677-2103 (home)

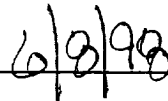
Certification

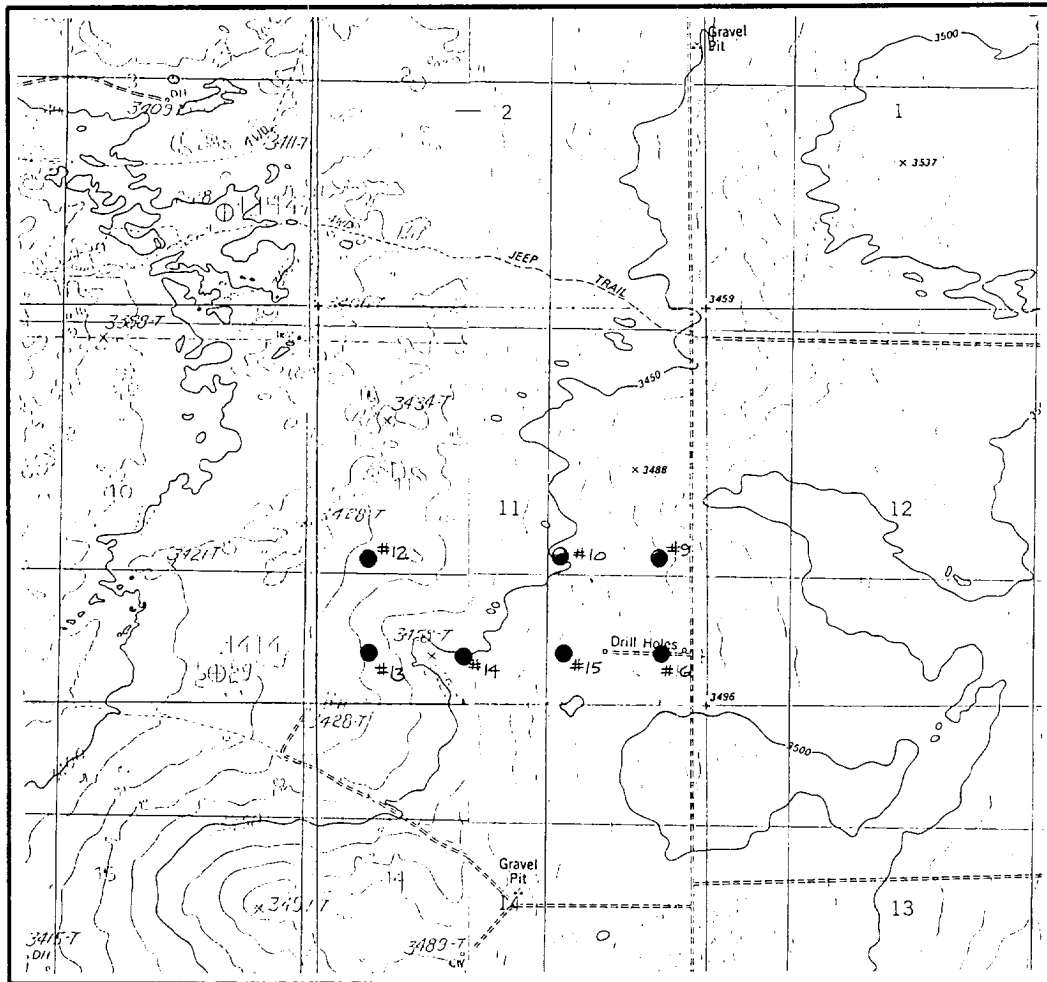
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated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

Signed: _____


Walter M. Frank
District Engineer

Date: _____





SCALE : 1" = 2000'

CONTOUR INTERVAL 10'

SECTION 11 TWP 23-S RGE 31-E

SURVEY NEW MEXICO PRINCIPAL MERIDIAN

COUNTY EDDY STATE NM

OPERATOR DEVON ENERGY CORPORATION (NEVADA)

U.S.G.S. TOPOGRAPHIC MAP

LOS MEDANOS & BOOTLEG RIDGE

NAME	LOCATION	ELEVATION	LAT.	LONG.
BARCLAY 11 I #9	1980' FSL & 660' FEL	3470'	N 32°19'01.2"	W 103°44'30.0"
BARCLAY 11 J #10	1980' FSL & 1980' FEL	3452'	N 32°19'01.3"	W 103°44'45.4"
BARCLAY 11 L #12	1980' FSL & 660' FWL	3423'	N 32°19'01.4"	W 103°45'16.2"
BARCLAY 11 M #13	660' FSL & 660' FWL	3431'	N 32°18'48.3"	W 103°45'16.2"
BARCLAY 11 N #14	660' FSL & 1980' FWL	3453'	N 32°18'48.3"	W 103°45'00.8"
BARCLAY 11 O #15	660' FSL & 1980' FEL	3474'	N 32°18'48.2"	W 103°44'45.4"
BARCLAY 11 P #16	660' FSL & 660' FEL	3485'	N 32°18'48.2"	W 103°44'30.1"

These locations have been very carefully staked on the ground according to the best official survey records, maps, and other data available to us.

Review this plot and notify us immediately of any possible discrepancy.

TOPOGRAPHIC LAND SURVEYORS

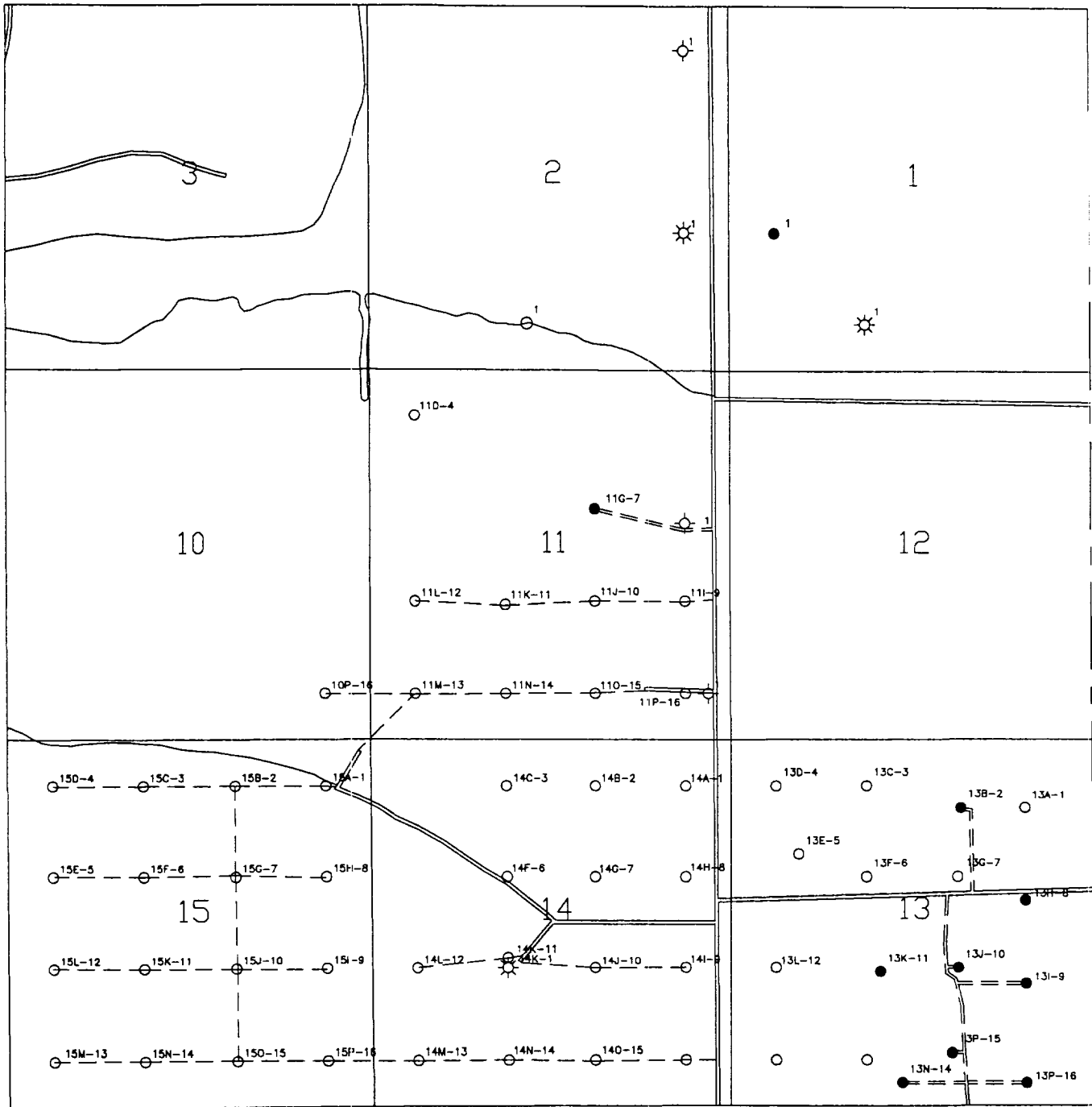
Surveying & Mapping for the Oil & Gas Industry

1307 N. HOBART
PAMPA, TX. 79065

6709 N. CLASSEN BLVD.
OKLAHOMA CITY, OK. 73116

2903 N. BIG SPRING
MIDLAND, TX. 79705

R 31 E



T
23
S



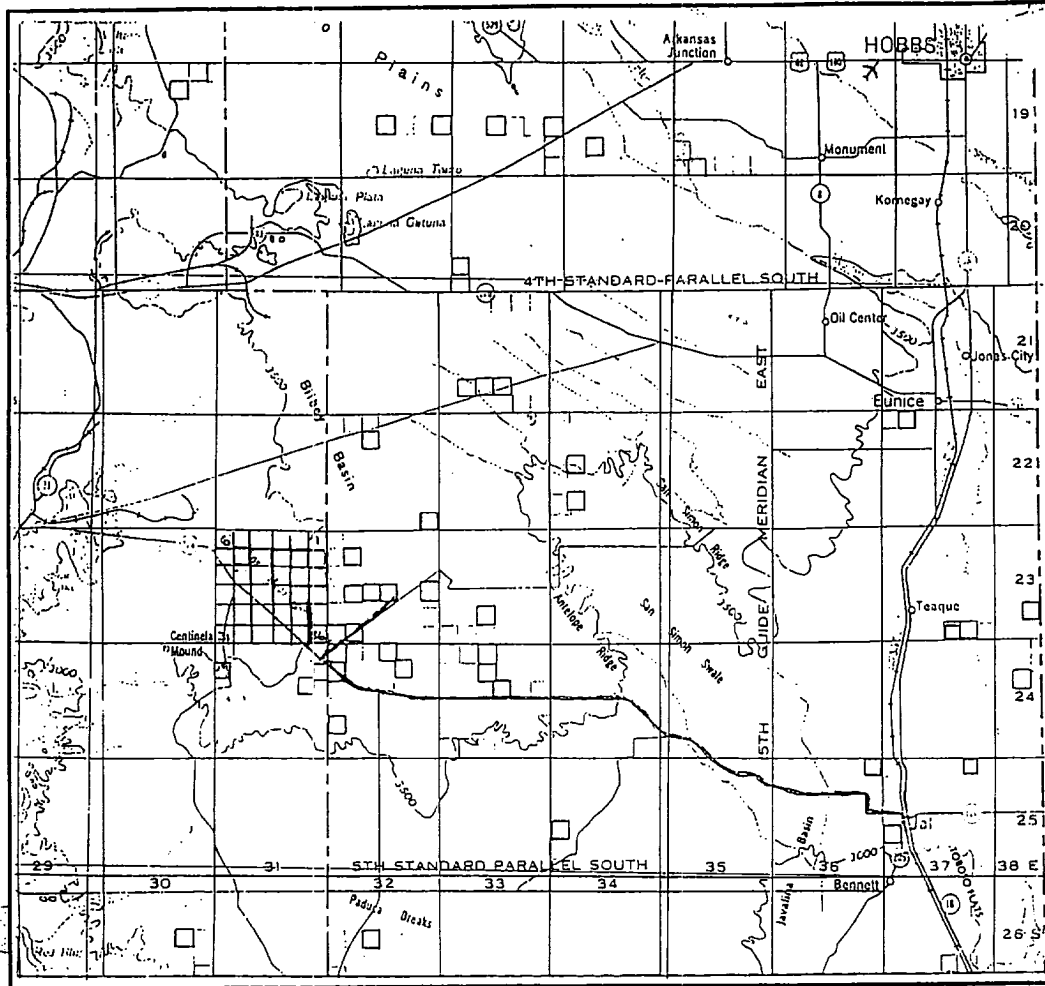
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devon
ENERGY CORPORATION

INGLE WELLS FIELD
EDDY COUNTY, NEW MEXICO

BARCLAY-11N FED-14
EXHIBIT 3

Scale in Feet
2000 0 2000



SECTION 10, 11, 13, 14, 15, 22, & 23 TWP 23-S RGE 31-E

SURVEY NEW MEXICO PRINCIPAL MERIDIAN

COUNTY EDDY STATE NM

OPERATOR DEVON ENERGY CORPORATION

LEASE TODD & BARCLAY

DISTANCE & DIRECTION FROM THE JCT. OF S.H. 128 &

CO. RD. 798, 34.0 MILES WEST OF JAL, GO NORTH 2.1

MILES ON CO. RD. 798 TO THE SOUTHEAST CORNER OF

SECTION 23.



This location has been very carefully staked on the ground according to the best official survey records, maps, and other data available to us.

Review this plot and notify us immediately of any possible discrepancy.

TOPOGRAPHIC LAND SURVEYORS

Surveying & Mapping for the Oil & Gas Industry

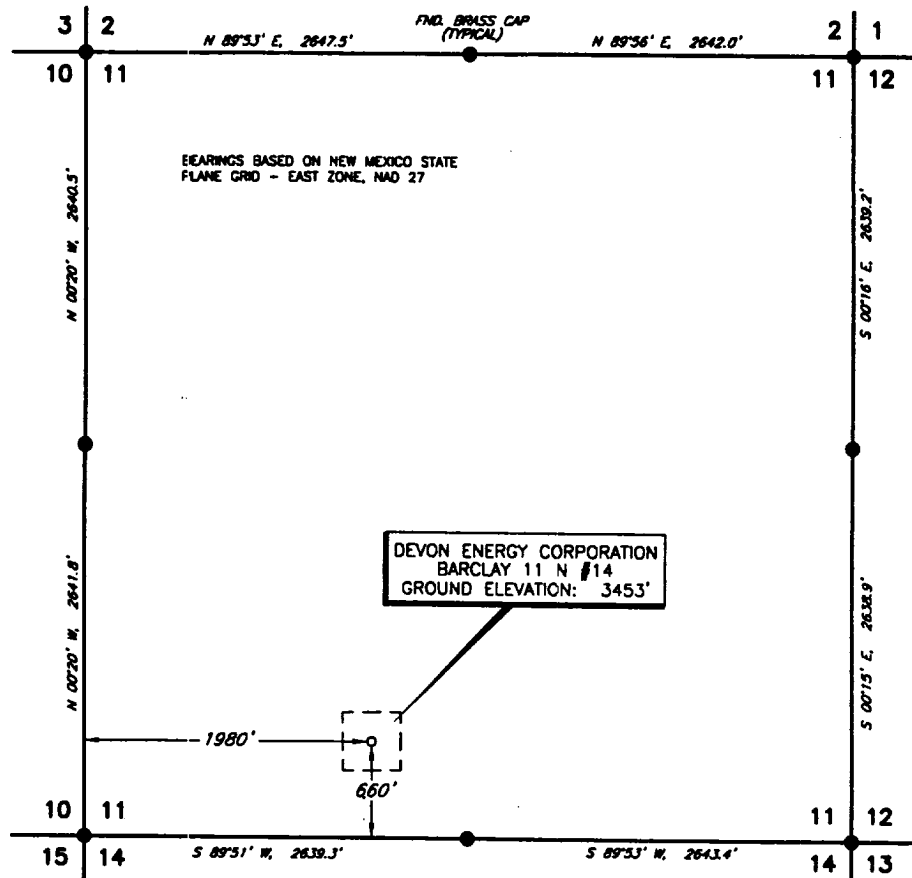
1307 N. HOBART
PAMPA, TX. 79065
(800) 658-6382

6709 N. CLASSEN BLVD.
OKLAHOMA CITY, OK. 73116
(800) 654-3219

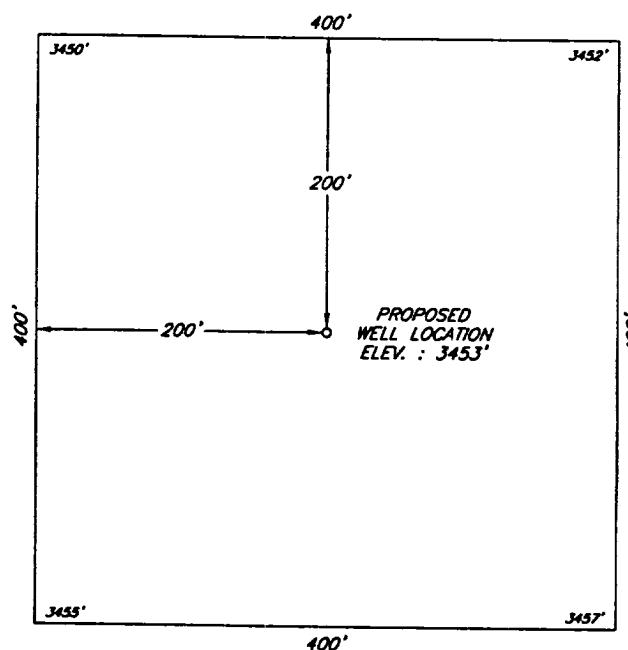
2903 N. BIG SPRING
MIDLAND, TX. 79705
(800) 767-1653

PLAT SHOWING PROPOSED
WELL LOCATION IN
SECTION 11, T-23-S, R-31-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

EXHIBIT # 3



PLAN VIEW
1" = 1000'



DETAIL VIEW
1" = 100'

NO.	REVISION	DATE	BY

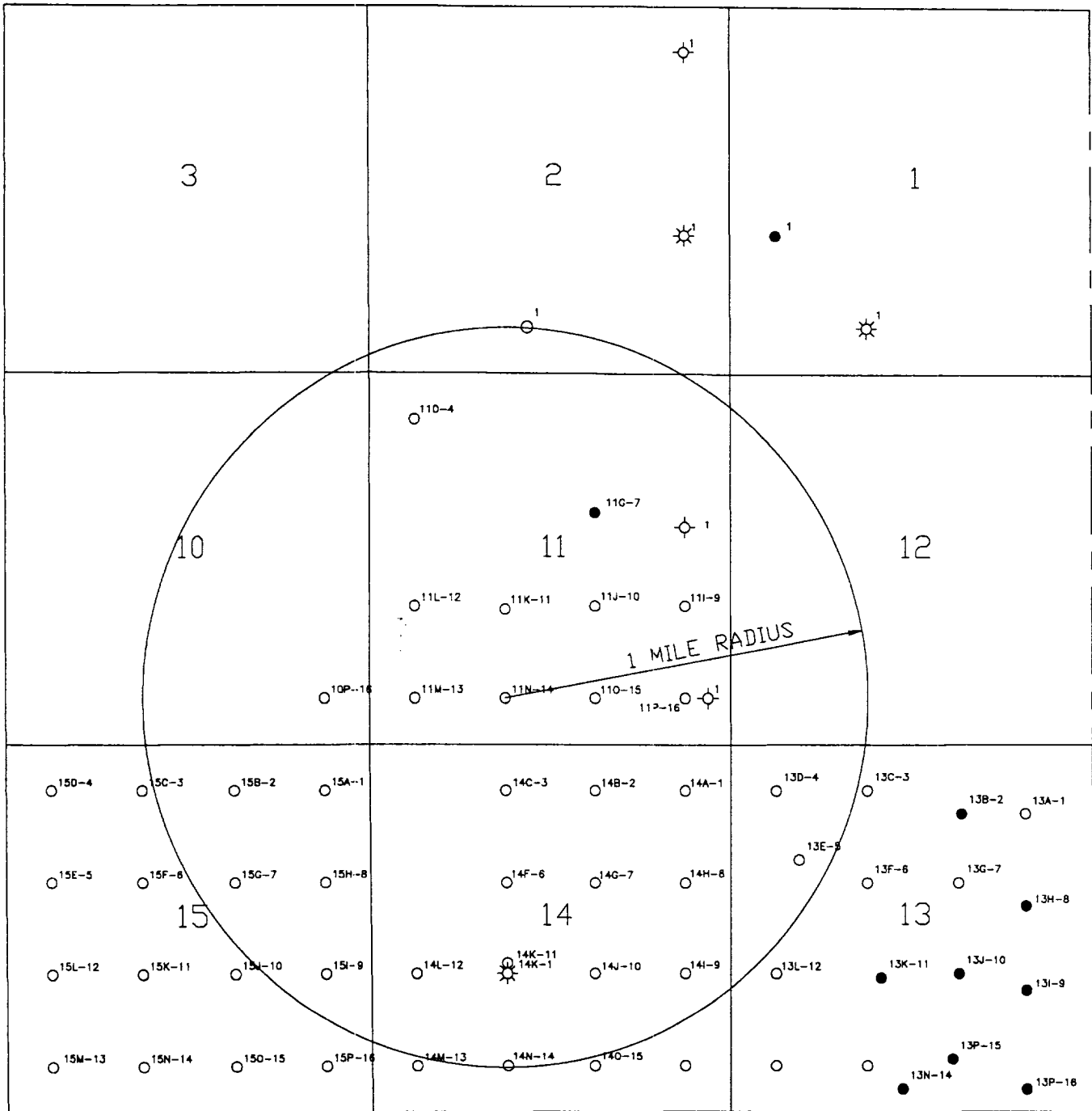
DEVON ENERGY CORPORATION

SURVEYING AND MAPPING BY
TOPOGRAPHIC LAND SURVEYORS
MIDLAND, TEXAS

SCALE: AS SHOWN
DATE: MAY 18, 1998
JOB NO.: 58440-F

47 SW
SHEET : 1 OF 1

R 31 E



T
23
S



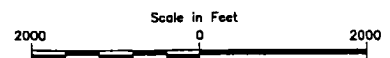
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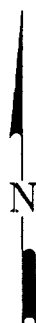
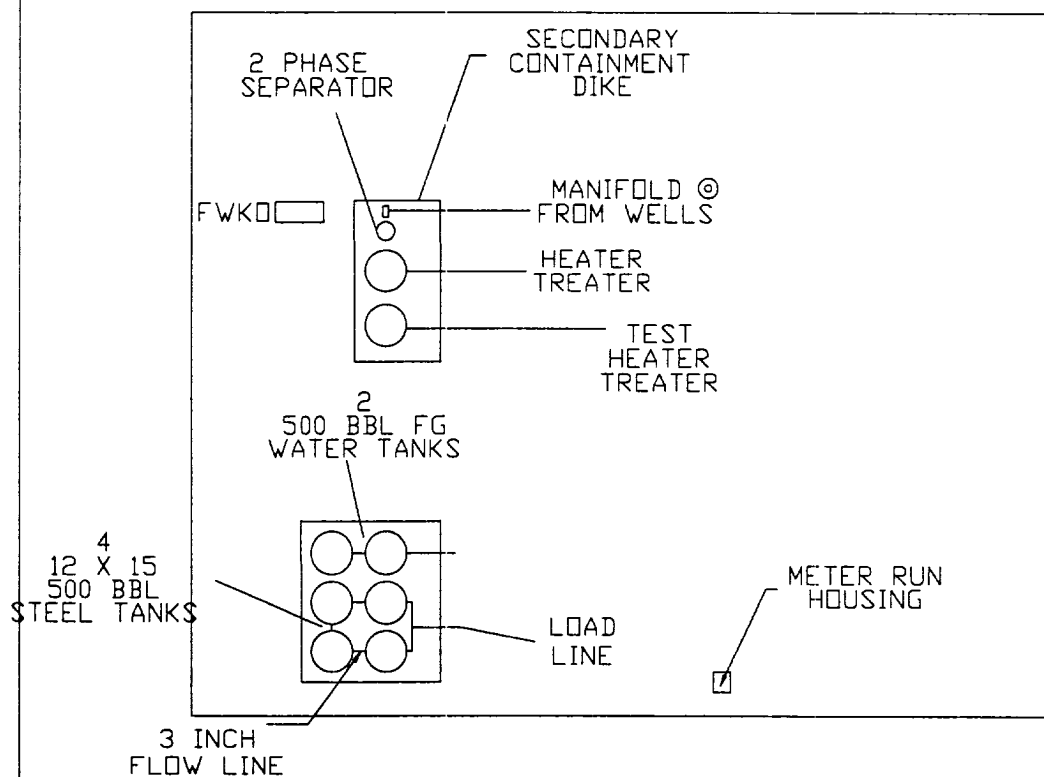
devon
ENERGY CORPORATION

INGLE WELLS FIELD

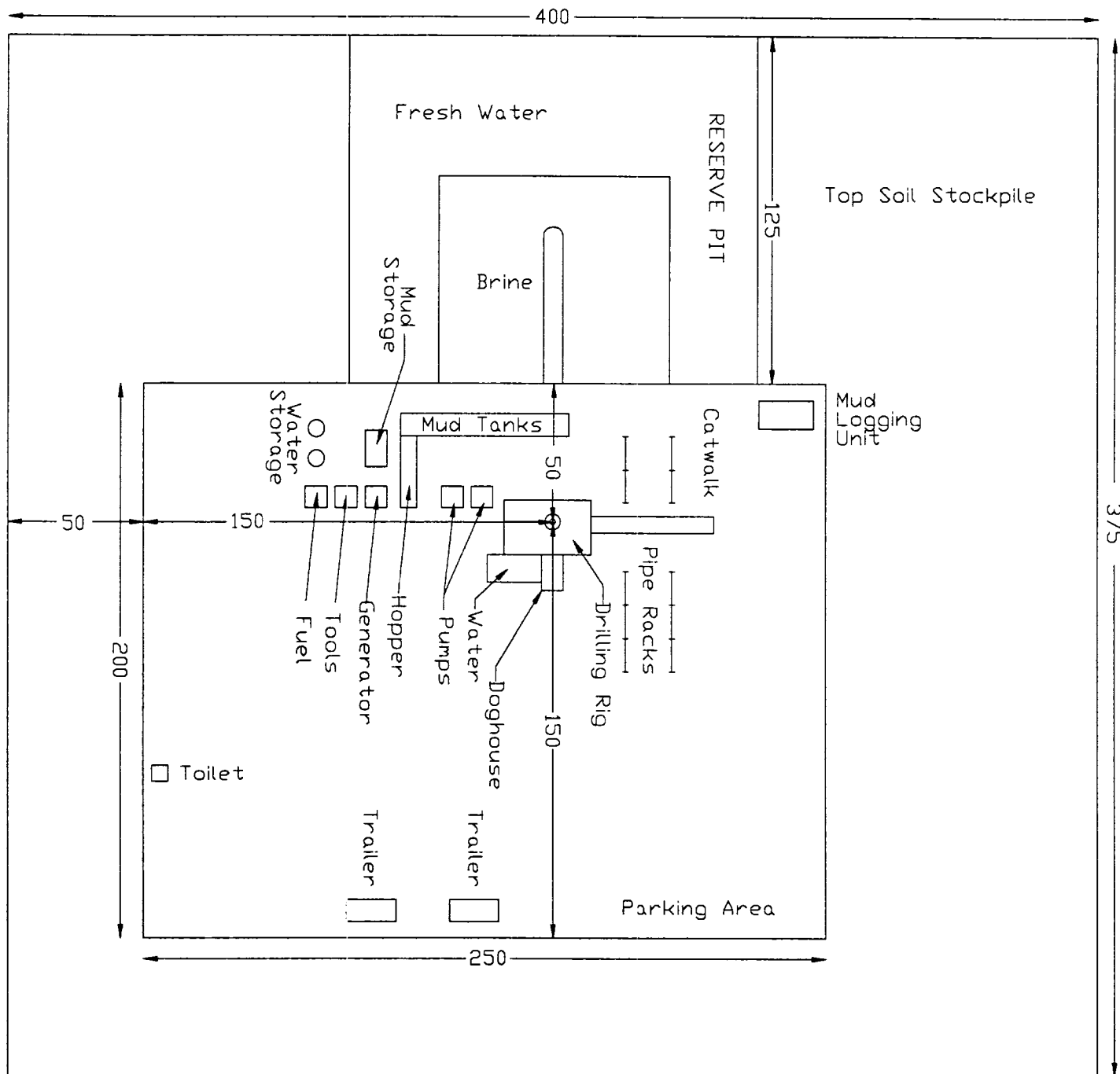
EDDY COUNTY, NEW MEXICO


WELLS WITHIN 1 MILE RADIUS
BARCLAY-11N FED-14
EXHIBIT 4





INGLE WELLS FIELD EDDY COUNTY, NEW MEXICO	
PRODUCTION FACILITIES LAYOUT AT BARCLAY-110 FED-15 FOR BARCLAY-11N FED-14	
EXHIBIT 5	
Scale in Feet 25 0 25 50 75 100 5/98	





devon
ENERGY SERVICES

INGLES WELLS FIELD
EDDY COUNTY, NEW MEXICO

DRILLING RIG LAYOUT AND ELEVATIONS
BARCLAY-11N FED-14

EXHIBIT 6

Scale in Feet
25 0 25 50 75 100

5/98

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: BARCLAY FEDERAL AREA
Project ID:	Location: T23S-R31E

Design Parameters:

Mud weight (9.00 ppg) : 0.468 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	H-40	ST&C	850	12.559		
	Collapse Load (psi)	Strgth (psi)	S.F.	Burst Load (psi)	Min Int Strgth (psi)	Yield S.F.	Tension Load (kips)	Strgth (kips)	S.F.
1	397	740	1.864	850	1730	2.04	40.80	322	7.89 J

Prepared by : CHUCK HORSMAN, Oklahoma City, OK

Date : 06-04-1993

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 guide-
 line, 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)

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: BARCLAY FEDERAL AREA
Project ID:	Location: T23S-R31E

Design Parameters:

Mud weight (9.80 ppg) : 0.509 psi/ft
 Shot in surface pressure : 3487 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 : 9.89 (J)
 Body Yield : 1.50 (B)
 Overpull : 0 lbs.

Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost		
1	4,400	8-5/8"	32.00	J-55	ST&C	4,400	7.875		
	Load (psi)	Collapse Strgth (psi)	S.F.	Burst Load (psi)	Min Int Strgth (psi)	Yield S.F.	Load (kips)	Tension Strgth (kips)	S.F.
1	2240	2530	1.129	3527	3930	1.11	140.80	372	2.64 J

Prepared by : CHUCK HORSMAN, Oklahoma City, OK

Date : 06-04-1993

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 9.00 ppg mud (pore pressure of 3,927 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 3,527 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, Dunlap 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 1.06)

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: BARCLAY FEDERAL AREA
Project ID:	Location: T23S-R31E

Design Parameters:

Mud weight (9.00 ppg) : 0.468 psi/ft
 Shut in surface pressure : 3216 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 : 9.89 (J)
 Body Yield : 1.50 (B)
 Overpull : 0 lbs.

*** WARNING *** Design factor for joint strength exceeded in design!

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	1,200	5-1/2"	17.00	J-55	LT&C	1,200	4.767	
2	6,200	5-1/2"	15.50	J-55	LT&C	7,400	4.825	
3	1,350	5-1/2"	17.00	J-55	LT&C	8,750	4.767	

	Collapse			Burst			Tension		
	Load (psi)	Strgth (psi)	S.F.	Load (psi)	Min Int Strgth (psi)	Yield S.F.	Load (kips)	Strgth (kips)	S.F.
1	561	3897	6.947	3336	5320	1.59	139.45	247	1.77 J
2	3460	3927	1.135	3956	4810	1.22	119.05	217	1.82 J
3	4091	4910	1.200	4091	5320	1.30	22.95	247	10.76 J

Prepared by : TOM PEPPER, Oklahoma City, OK

Date : 07-10-1995

Remarks :

Minimum segment length for the 8,750 foot well is 500 feet.

The mud gradient and bottom hole pressures (for burst) are 0.468 psi/ft and 4.091 psi, respectively.

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 Reeler 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)

DEVON ENERGY CORPORATION

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

A. Hydrogen Sulfide Training

All rig crews and company personnel will receive training from a qualified instructor in the following areas prior to penetrating any hydrogen sulfide bearing formations during drilling operations:

1. The hazards and characteristics of hydrogen sulfide (H₂S).
2. The proper use and maintenance of the H₂S safety equipment and of personal protective equipment to be utilized at the location such as H₂S detection monitors, alarms and warning systems, and breathing equipment. Briefing areas and evacuation procedures will also be discussed and established.
3. Proper rescue techniques and procedures will be discussed and established.

In addition to the above, supervisory personnel will be trained in the prevention of oil and gas well blowouts in accordance with Minerals Management Service Standards Subpart - 0 - 250 - 212.

Prior to penetrating any known H₂S bearing formation, H₂S training will be required at the rig sight for all rig crews and company personnel that have not previously received such training. This instruction will be provided by a qualified instructor with each individual being required to pass a 20 question test regarding H₂S safety procedures. All contract personnel employed on an unscheduled basis will be required to have received appropriate H₂S training.

This Hydrogen Sulfide Drilling And Operations Plan shall be available at the wellsite during drilling operations.

B. H₂S Safety Equipment And Systems

All H₂S safety equipment and systems will be installed, tested, and operational when drilling operations reach a depth approximately 500' above any known or probable H₂S bearing formation. The safety systems to be utilized during drilling operations are as follows:

1. Well Control Equipment

- (a) Double ram BOP with a properly sized closing unit and pipe rams to accommodate all pipe sizes in use.
- (b) A choke manifold with a minimum of one remote choke.

2. H2S Detection And Monitoring Equipment

- (a) Three (3) H2S detection monitors will be placed in service at the location. One monitor will be placed near the bell nipple on the rig floor; one will be placed at the rig substructure; and, one will be at the working mud pits or shale shaker. This monitoring system will have warning lights and audible alarms that will alert personnel when H2S levels reach 10 ppm.
- (b) One (1) Sensidyne Pump with the appropriate detection tubes will also be available to perform spot checks for H2S concentrations in any remote or isolated areas.

3. Protective Equipment For Essential Personnel

Protective equipment will consist of the following:

- (a) Four (4) - five minute escape packs located at strategic points around the rig.
- (b) Two (2) - thirty minute rescue packs to be located at the designated briefing areas.

4. Visual Warning System

Visual warning system will consist of the following:

- (a) Two wind direction indicators.
- (b) One condition / warning sign which will be posted on the road providing direct access to the location. The sign will contain lettering of sufficient size to be readable at a reasonable distance from the immediate location. The sign will inform the public that a hydrogen sulfide gas environment could be encountered at the location.

5. Mud Program

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight and safe drilling practices (for example, keeping the hole filled during trips) will minimize hazards when drilling in H₂S bearing formations.

6. Metallurgy

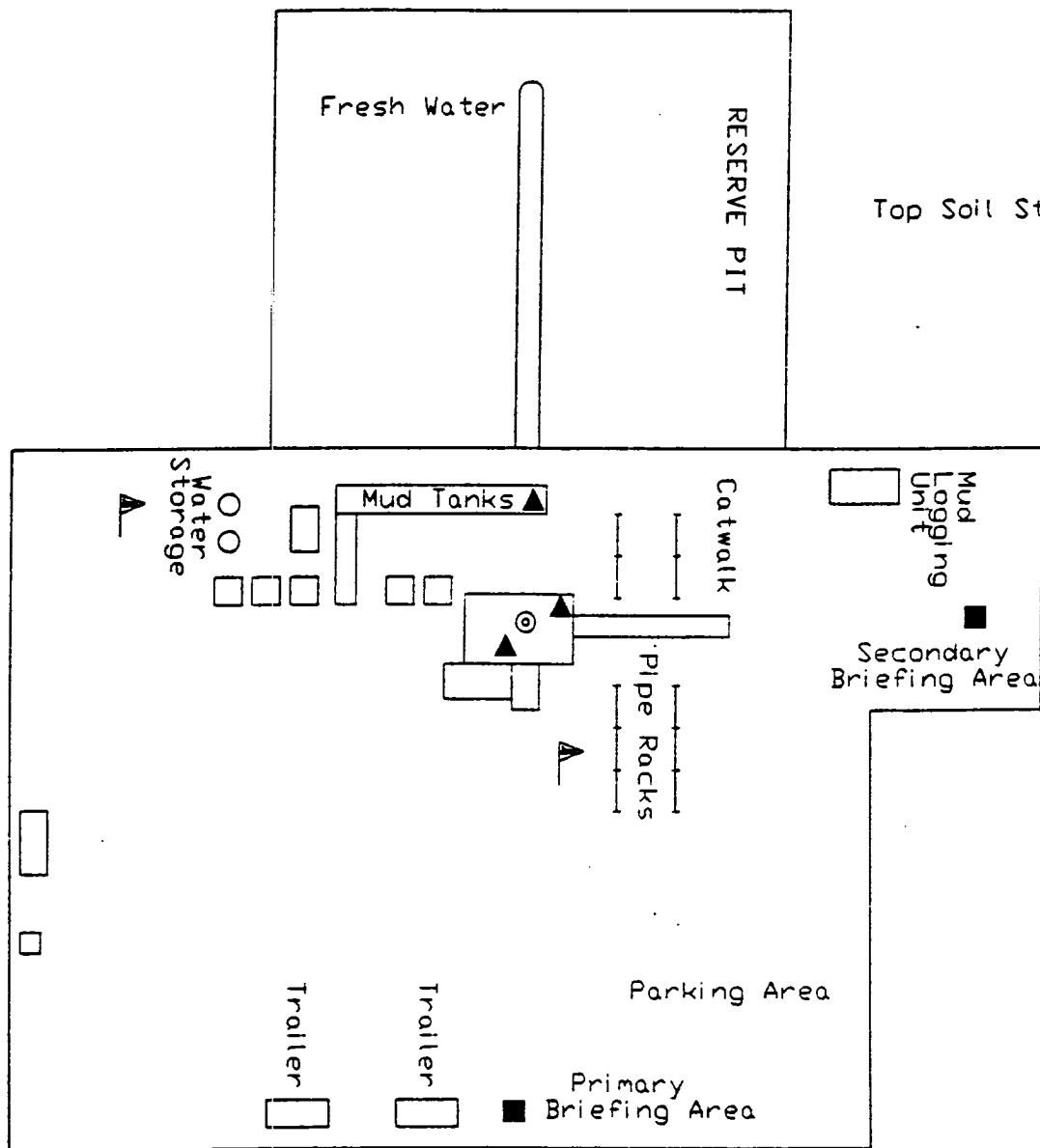
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spools, kill lines, choke manifold and lines and valves shall be suitable for H₂S service.

7. Communication

Cellular telephone communication will be available in company vehicles.

C. Diagram of Drilling Location

Attached is a diagram representing a typical location layout as well as the location of H₂S monitors, briefing areas and wind direction indicators.



- ▲ H2S MONITORS WITH ALARMS AT THE BELL NIPPLE, SUBSTRUCTURE, AND SHALE SHAKER
- ▲ WIND DIRECTION INDICATORS
- SAFE BRIEFING AREAS WITH CAUTION SIGNS AND PROTECTIVE BREATHING EQUIPMENT

Prevailing Wind



devon

EDDY COUNTY, NEW MEXICO

H2S PLAN

Scale in Feet

25 0 25 50 75 100

DEVON
ENERGY
CORPORATION

1500 Mid-America Tower
20 North Broadway
Oklahoma City, Oklahoma 73102-8260

405/235-3611
TWX 910-831-327

May 5, 1989

State of New Mexico
Oil & Gas Conservation Commission
State Capitol Building
Santa Fe, NM 87504

Re: Blanket Plugging Bond
State of New Mexico
No. 56-0130-11003-87

Gentlemen:

Devon Energy Corporation formerly Devon Corporation has changed its name to Devon Energy Corporation (Nevada). In this regard, enclosed is a Rider for the referenced bond to include both company names. Please amend your records.

Very truly yours,



Charlene Newkirk
Lease Records Supervisor

encls

cc: Carolyn Wilson
McEldowney McWilliams

R I D E R

To be attached to and become a part of Bond No. 56-0130-11003-87-1
issued by the United States Fidelity and Guaranty Company, on
behalf of Devon Energy Corporation
as Principal, and in favor of State of New Mexico
as Obligee, in the penalty of Fifty thousand and no/100 - - - - -
Dollars (\$ 50,000.00) for Blanket plugging bond

It is hereby understood and agreed that effective on the
February 10, 1989 the Principal in this
bond shall be Devon Energy Corporation (Nevada)

However, the liability of the Surety in the aggregate to the
Obligee for any and all defaults of the Principal, whether occurring
before or after or partly before and partly after this rider
become effective, shall in no event exceed the penalty stated
in the bond.

Signed, Sealed, and Dated this 3rd day of March 1989.

ATTEST:

Quinn Armstrong
Asst. Secretary

Devon Energy Corporation (Nevada)

M. C. Lund
By: MARVIN C. LUNDE, JR.
Vice President

UNITED STATES FIDELITY AND GUARANTY COMPANY

By: _____

Marcia C. Brejda

Attorney-in-fact

ROSWELL DISTRICT

1. BLM Report No.	2. (ACCEPTED) (REJECTED)	3. NMCRIS No. 60928
4. Title of Report (Project Title) An Archaeological Survey of 20 Proposed Well Locations, Eddy County, New Mexico		5. Project Date(s) 05/18/98 - 05/22/98
		6. Report Date 05/23/98
7. Consultant Name & Address: Direct Charge: Don Clifton Name: Don Clifton, Archaeological Consultant Address: P. O. Box 30, Pep, N.M. 88126 Authors Name: Don Clifton Field personnel names: Don Clifton Phone (505) 675-2360		8. Permit No. 83-2920-96-K 9. Consultant Report No. 248
10. Sponsor Name and Address: Indiv. Responsible: Wally Frank Name: Devon Energy Corporation Address: 20 N Broadway, Suite 1500, Oklahoma City, Ok 73102 Phone (405) 552-4595		11. For BLM's Use
12. ACREAGE: Total No. acres surveyed: 74 acres SURFACE OWNERSHIP: Federal: 74 acres State: Private:		
13. Location: (Maps attached if negative survey) a. State New Mexico b. County Eddy c. BLM District: Roswell d. Nearest City or town: e. Area: T23S R 31E Sec. 10, 11, 15 f. Well Pad Footages: Todd 10P#16=660'fsl/660'fel, Sec.10 Barclay 11L#9=1980'fsl/660'fel, Sec.11 Barclay 11J#10=1980'fsl/1980'fel, Sec. 11 Barclay 11L#12= 1980'fsl/660'fwl, Sec. 11 Barclay 11M#13= 660'fsl/660'fwl, Sec. 11 Barclay 11N#14=660'fsl/1980'fwl, Sec. 11 Barclay 11O#15= 660'fsl/1980'fel, Sec. 11 Barclay 11P#16= 660'fsl/660'fel, Sec. 11 Todd 15A#1= 660'fsl/660'fel, Sec. 15 Todd 15B#2=660'fsl/1980'fel, Sec. 15 g. Area Surveyed: Block: Impact 400' x 400' Surveyed 400'x 400' on each well location Linear: Impact x Surveyed x		
Todd 15C#3=660'fsl/1980'fwl, Sec. 15 Todd 15F#6=1980'fsl/1980'fwl, Sec. 15 Todd 15G#7=1980'fsl/1980'fel, Sec. 15 Todd 15H#8=1980'fsl/660'fel, Sec. 15 Todd 15I#9=1980'fsl/660'fel, Sec. 15 Todd 15J#10=1980'fsl/1980'fel, Sec. 15 Todd 15K#11= 1980'fsl/1980'fwl, Sec. 15 Todd 15N#14= 660'fsl/1980'fwl, Sec. 15 Todd 15O#15= 660'fsl/1980'fel, Sec. 15 Todd 15P#16= 660'fsl/660'fel, Sec. 15		

[illegible]

BOOTLEG RIDGE, N. MEX.

SW/4 HAT MESA 15' QUADRANGLE

~~32103-C6-TF-024~~

SCALE 1:24 000

1. **Introduction**

