OCD-ARTESIA

R-111-POTASH

AT S-07-202

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Month - Year
MAR 28 2007
OCD - ARTESIA, NM

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: **NM-0418220-A**

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.:

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: **Todd 27A Federal 1** 36427

2. Name of Operator: **Devon Energy Production Company, LP** 6137

9. API Well No.: 30-015-35515

3a. Address: **20 North Broadway, Oklahoma City, Oklahoma City 73102-8260**

3b. Phone No. *(include area code)*: **405-552-7802**

10. Field and Pool, or Exploratory: **Ingle Wells; Delaware**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: **NENE 660' FNL & 660' FEL**

At proposed prod. zone: **NENE 660' FNL & 660' FEL**

11. Sec., T. R. M. or Blk. and Survey or Area: **Sec 27 T23S R31E**

14. Distance in miles and direction from nearest town or post office*: **Approximately 20 miles east of Loving, NM.**

12. County or Parish: **Eddy County**

13. State: **NM**

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	17. Spacing Unit dedicated to this well
	720	**40**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
	8500'	**CO-1104**
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3421 ' GL	**01/15/2007**	**45 days**

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.

25. Signature	Name *(Printed/Typed)*	Date
	Stephanie A. Ysasaga	**12/28/2006**

Title: **Sr. Staff Engineering Technician**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Linda S.C. Rundell	**/s/ Linda S.C. Rundell**	MAR 26 2007

Title	Office
STATE DIRECTOR	**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 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.

**(Instructions on page 2)*

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

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
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 Name:	Todd 27A Federal 1
Lease No.:	NM 0418220-A
Legal Description of Land:	NENE Sec 27-T23S-R31E 660' FNL & 660' FEL
Formation(s):	Ingle Wells: Delaware
Bond Coverage:	Nationwide
BLM Bond File No.:	CO-1104
Authorized Signature:	Stephanie A. Ysasaga
Title:	Sr. Staff Engineering Technician
Date:	12/28/06

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, 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 Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	33745	Ingle Wells; Delaware

Property Code	Property Name	Well Number
	TODD 27A FEDERAL	1

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY LP	3421'

Surface Location

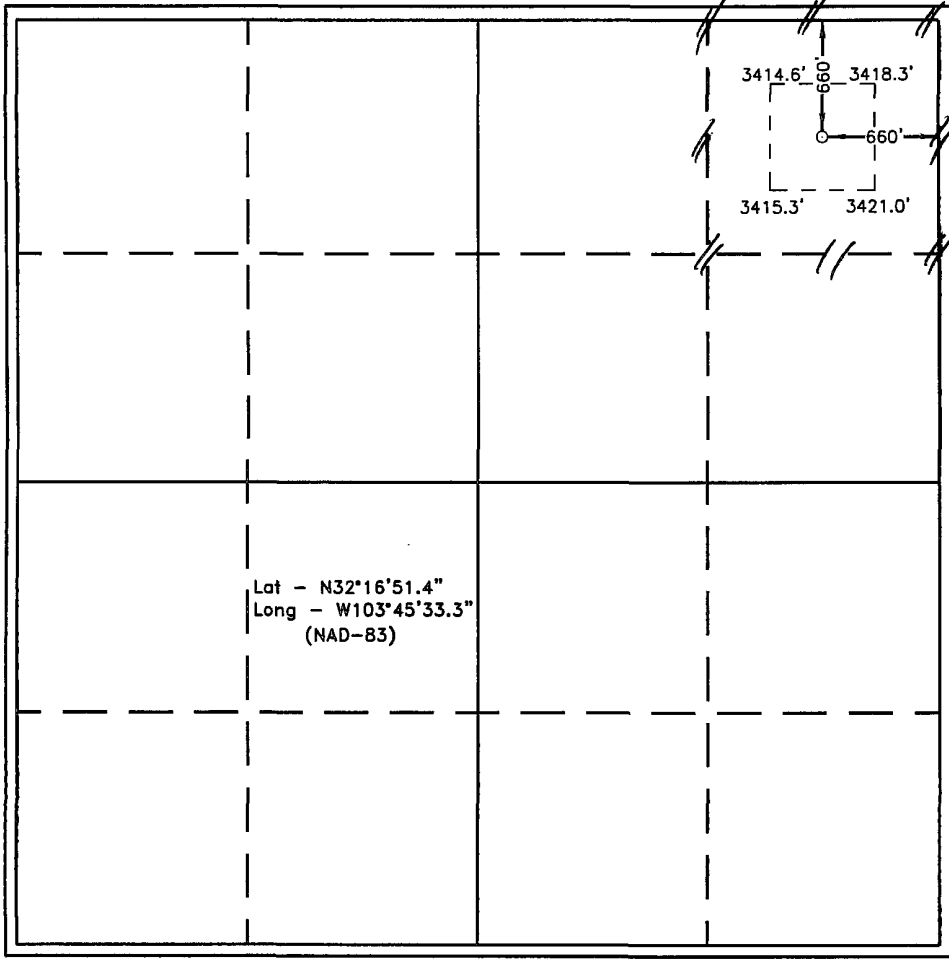
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	27	23 S	31 E		660	NORTH	660	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

12/28/06
Signature Date

Stephanie A. Ysasaga
Printed Name

SURVEYOR CERTIFICATION

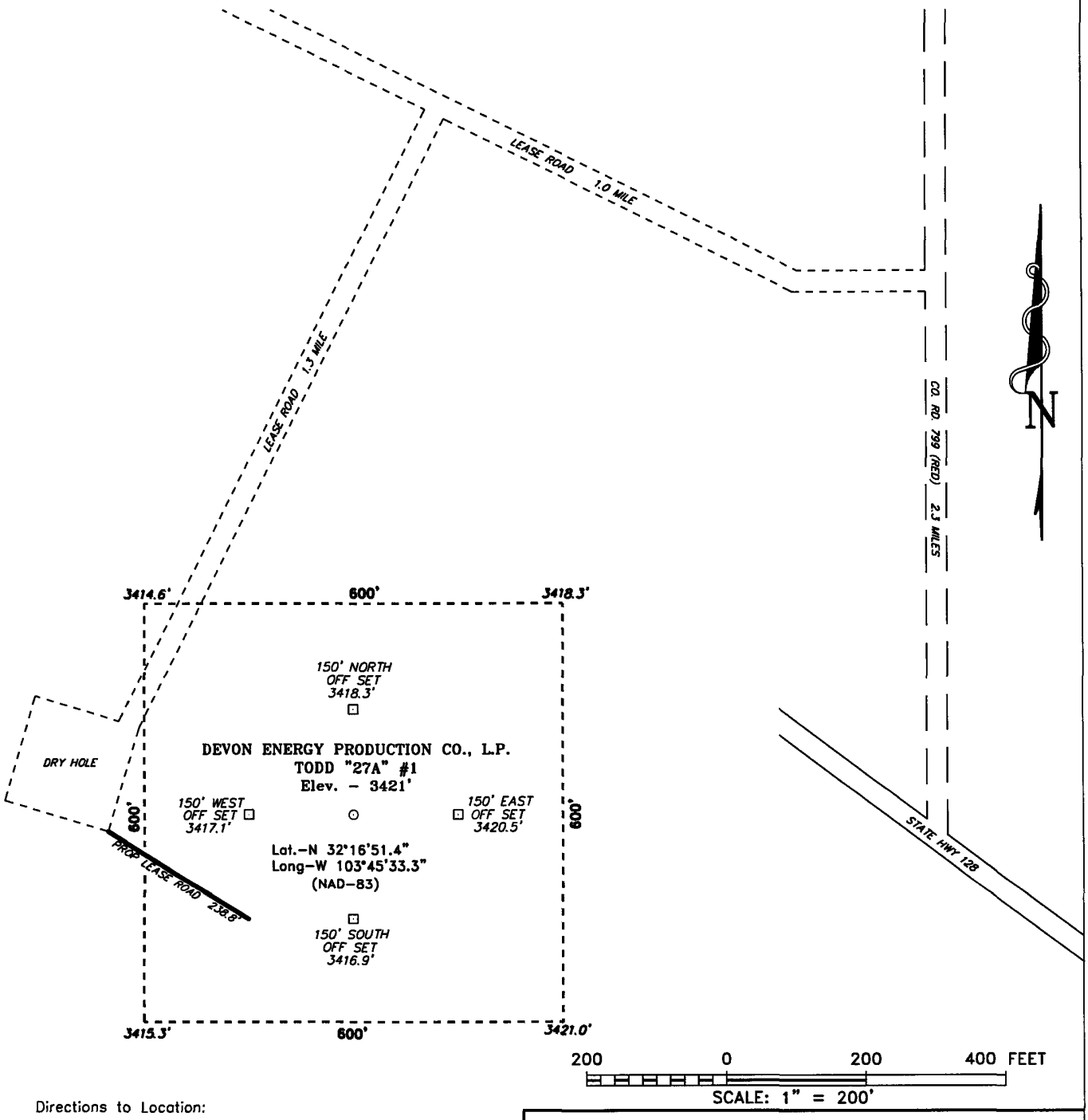
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

NOVEMBER 03, 2006
Date Surveyed
Signature & Seal of Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 27, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



Directions to Location:

FROM THE JUNCTION OF STATE HWY 128 AND CO. RD. 29 (RED); PROCEED NORTH ON CO. RD. 2.3 MILES TO LEASE ROAD. ON LEASE ROAD PROCEED WEST WINDING NORTHWEST 1.0 MILE TO LEASE ROAD; PN LEASE ROAD PROCEED SOUTH 1.3 MILE TO DRY HOLE MARKER AND PROPOSED LEASE ROAD.

DEVON ENERGY PROD. CO., L.P.

REF: TODD "27A" #1 / WELL PAD TOPO

THE TODD "27A" No. 1 LOCATED 660'

FROM THE NORTH LINE AND 660' FROM THE EAST LINE OF

SECTION 27, TOWNSHIP 23 SOUTH, RANGE 31 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 17230	Drawn By: J. M. SMALL		
Date: 11-06-2006	Disk: 17230W JMS	Survey Date: 11-03-2006	Sheet 1 of 1 Sheets

DRILLING PROGRAM

Devon Energy Production Company, LP
Todd 27A Federal 1
Surface Location: 660' FNL & 660' FEL, Unit A, Sec 27 T23S R31E, Eddy, NM
Bottom hole Location: 660' FNL & 660' FEL, Unit A, Sec 27 T23S R31E, Eddy, NM

1. Geologic Name of Surface Formation:

a. Permian

2. Estimated tops of geological markers:

a.	Rustler	575'
b.	Top of Salt	950'
c.	Base of Salt	4100'
d.	Bell Canyon	4350'
e.	Cherry Canyon	5300'
f.	Brushy Canyon	6675'
g.	Bone Spring Lime	8175'
h.	Total Depth	8500'

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

a.	Upper Permian Sands	above 800'	Fresh Water
b.	Bell Canyon	4350'	Oil
c.	Cherry Canyon	5300'	Oil
d.	Brushy Canyon	6675'	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 4350' 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
	30"	0' –40'	20"	NA	NA	Conductor
See COA	17 ½"	0' – 850'	13 3/8"	48#	ST&C	H-40
	11"	0' – 4350'	8 5/8"	32#	ST&C	J-55
	7 7/8"	0' – 8500'	5 ½"	15.5# & 17#	LT&C	J-55

5. **Cement Program:**

a.	20"	Conductor	Cement with ready-mix to surface.
b.	13 3/8"	Surface	Cement to surface with 500 sx Poz (35% Poz, 65% Class C, 6% gel) w/2% CaCl2 + 1/4"#/sx celloflk + 200 sx Class C w/2% CaCl2 and 1/4#/sk celloflk
c.	8 5/8"	Intermediate	Cement to surface with 1600 sx Poz (35% Poz, 65% Class C, 6% gel, 15 % salt) w/ 1/4#/sx celloflk + 200 sx Class C w/2% CaCl2, 1/4#/sx celloflk.
d.	5 ½"	Production	Cement 1st stage w/ 525 sx Silica Lite (Class H) w/ 3% salt, 0.6% FL additive, ¼#/sx celloflk w/ DV tool at ~5500'. Cement 2nd stage w/ 225 sx Poz (35% Poz, 65% Class H, 6% gel) w/ ¼#/sx celloflk + 400 sx Class H w/ 4% gel, 5% salt, ¼#/sx celloflk.

See COA

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

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. The drilling head 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 with the rig pump 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 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.

7. **Proposed Mud Circulation System**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 850'	8.8	34-36	NC	Fresh Water
850' – 4350'	10.0	28	NC	Brine Water
4350' – 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 operation after drilling out the 13 3/8" casing shoe until the 5 1/2" 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 130°.

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 21 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 27A Federal 1
Surface Location: 660' FNL & 660' FEL, Unit A, Sec 27 T23S R31E, Eddy, NM
Bottom hole Location: 660' FNL & 660' FEL, Unit A, Sec 27 T23S R31E, Eddy, NM

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed well are reflected on Exhibit 2. The well was staked by Basin Surveys.
   b. All roads into the location are depicted on Exhibit 3.
   c. Directions to Location: From the Junction of State Hwy 128 and County Rd. 29, proceed north on County Rd. 2.3 miles to lease road. On lease road proceed west winding northwest 1.0 mile to lease road; pn lease road proceed south 1.3 mile to dry hole marker and proposed lease road.

2. **Access Road**
   a. Exhibit #3 shows the existing lease road. Approximately 238.8' of new access road 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, the Todd 27-13 tank battery would be utilized 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. All flow lines will adhere to API standards.
   d. 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 pit is proposed to be unlined unless subsurface conditions 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 be 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, some mesquite bushes and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
b. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is of limited use except for the grazing of livestock and the production of oil and gas.
c. A Cultural Resources Examination will be completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.
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.

Jim Cromer
Operations Engineer Advisor

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

Don Mayberry
Superintendent

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

(405) 228-4464 (office)
(405) 228-4464 (Cellular)

(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: December 28th, 2006

Stephanie A. Ysasaga
Sr. Staff Engineering Technician

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Todd 27A Federal 1
Surface Location: 660' FNL & 660' FEL, Unit A, Sec 27 T23S R31E, Eddy, NM
Bottom hole Location: 660' FNL & 660' FEL, Unit A, Sec 27 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.

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.

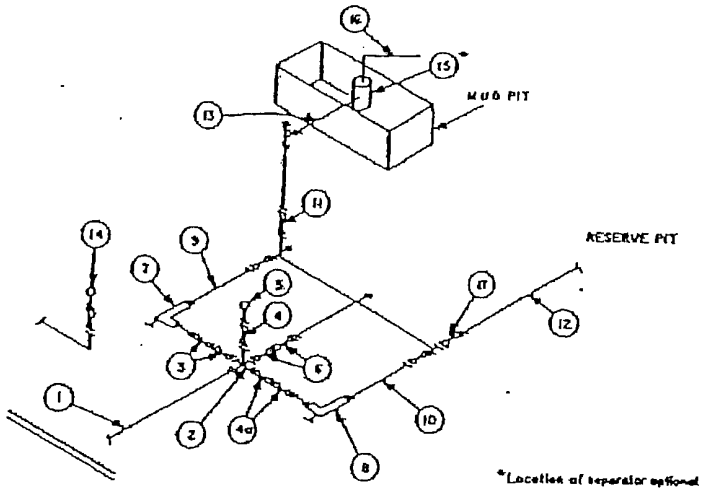
7. Drill stem Testing
   a. Exhausts will be watered
   b. Flare line will be equipped with an electric igniter or a propane pilot light in case gas reaches the surface.
   c. If the location is near to a dwelling a closed DST will be performed.

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.

Exhibit E

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.

MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

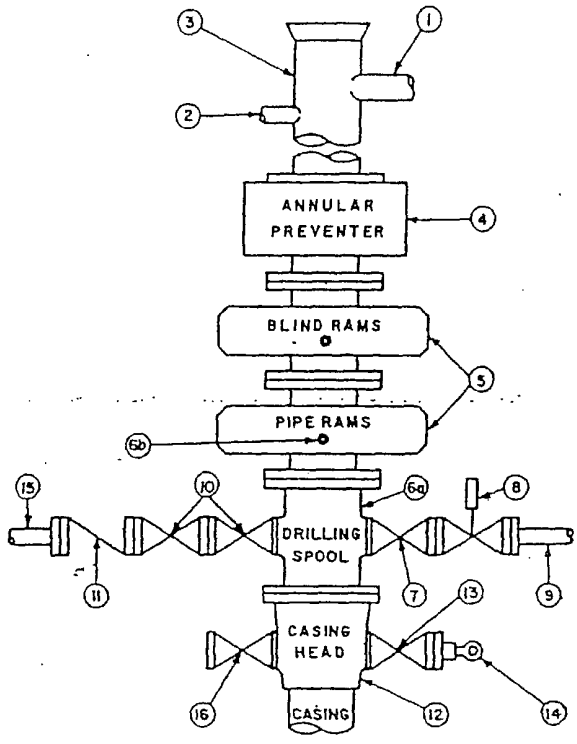
3 MWP

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		
	—— or ——		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate ☐ Plug ☐	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to choke manifold		3"
10	Valves Gate ☐ Plug ☐	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate ☐ Plug ☐	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"	

CONFIGURATION A



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 prevventer 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 choke. 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.

CONDITIONS OF APPROVAL - DRILLING

Well Name & No. 1-Todd 27A Federal
Operator's Name: Devon Energy Production Company, LP
Location: 0660FNL, 0660FEL, Section 27, T-23-S, R-31-E
Lease: NM-0418220-A

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 8-5/8 inch 5-1/2 inch

C. BOP tests

2. **Although Hydrogen Sulfide is not reported in Section 27, it is always a potential hazard. Reported in adjacent sections up to 10,000 ppm in the vapor stream, with more common values between 1200-2450 ppm.**

3 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. The 13-3/8 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite approximately 850 feet and above the salt**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in the Delaware and Bone Spring formations.

Possible water flows in Salado, Castile, Delaware, and Bone Spring formations.

2. The minimum required fill of cement behind the 8-5/8 inch salt protection casing is **circulate cement to the surface. Set between 4250' and 4370' in basal anhydrite or Lamar Limestone. If Delaware Sands are encountered, intermediate casing to be set 25 feet above the sand.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend a minimum of 500 feet into the 8-5/8 inch casing per NMOCD Order No. R-12513. In addition, steps 3-5 of this order must also be met. First stage to circulate.**

4. Whenever a casing string is cemented in the R-111-P Potash Area, cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **13-3/8** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be **3M** psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **8-5/8** inch casing shall be **3M** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- A variance to test the **BOP, BOPE, and 13-3/8 inch surface casing** to the reduced pressure of **1200** psi with the rig pumps is approved.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

Engineer on call phone: 505-706-2779

WWI 011807