

ACEC

7013

ATS-07-378

## OCD-ARTESIA

Form 3160-3  
(April 2004)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007Month Year Lease Serial No.  
MAY 22 2007 NMNM-445946 If Indian, Allottee or Tribe Name  
OCD - ARTESIA, NM1a. 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.

Arenoso 22 Federal 2

36514

2. Name of Operator

Devon Energy Production Company, LP

9. API Well No.

30-015-35631

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

Lusk ; Morrow (Gas)

West

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

At surface

NESE 1980' FSL &amp; 990' FEL

At proposed prod. zone

NWSE 1980' FSL &amp; 1650' FEL

11. Sec., T. R. M. or Blk. and Survey or Area

Lot I Sec 22, T19S R31E

14. Distance in miles and direction from nearest town or post office\*

Approximately 18 miles northwest to Loco Hills, 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

520

17. Spacing Unit dedicated to this well

320

18. Distance from proposed location\*

to nearest well, drilling, completed,  
applied for, on this lease, ft.

19. Proposed Depth

12,800'

20. BLM/BIA Bond No. on file

CO-1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

3547'

22. Approximate date work will start\*

04/15/2007

23. Estimated duration

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)

Stephanie A. Ysasaga

Date

03/26/2007

Title

Sr. Staff Engineering Technician

Approved by (Signature)

/s/ Don Peterson

Name (Printed/Typed)

/s/ Don Peterson

Date

MAY 18 2007

Title

ACTING FIELD MANAGER

Office

CARLSBAD FIELD 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 TWO YEARS

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)

CAPTAIN CONTROLLED WATER BASIN

SEE ATTACHED FOR  
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHEDIf earthen pits are used in  
association with the drilling of this  
well, an OCD pit permit must be  
obtained prior to pit construction.

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 80840	Pool Name Lusk, MORROW (GAS), West
Property Code	Property Name ARENOSO "22" FEDERAL	Well Number 2
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY LP	Elevation 3547'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	22	19 S	31 E		1980	SOUTH	990	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
J	22	19 S	31 E		1980	SOUTH	1650	EAST	EDDY
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<b>OPERATOR CERTIFICATION</b>  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.  Signature _____ Date 03/26/07 Stephanie A. Ysasaga Printed Name _____
	<b>SURVEYOR CERTIFICATION</b>  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.  MARCH 14, 2007 Date Surveyed _____ Signature of Surveyor _____ Professional Surveyor 
	Certificate No. Gary L. Jones 7977
	BASIN SURVEYS

**Additional Operator Remarks:**

Devon Energy Production Company, LP proposes to drill a Morrow well to 12,800' for commercial quantities of oil and gas. If the well is deemed noncommercial, the wellbore will be plugged and abandoned per Federal regulations. Devon Energy Production Co., LP plans to drill the well per the attached Drilling and Surface Use Plan.

**Directions To Location:**

From the mile marker 138 of US Hwy 82, proceed west approx. 200 feet to Co. Rd 222 (Shugart), on Co. Rd 222 go south 11.2 miles to lease road., go east on lease road 0.7 miles turning south for 0.3 miles, turning back east for 0.1 miles to lease road, turn south on lease road for 0.2 miles to proposed lease road.

**Access Road:**

Approximately 1,383' of access road will be required. Archeological survey's will be requested for the pad and access road.

**H2S:**

No H2S is anticipated to be encountered.

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 Name: **Arenoso 22 Federal 2**  
Lease No.: **NMNM-44594**  
Legal Description of Land: **320 acres 22-T19S-R31E**  
**SL: NESE 1980' FSL & 990' FEL**  
**BHL: NWSE 1980' FSL & 1650' FEL**  
Formation(s): **Happy Valley Morrow (Gas)**  
Bond Coverage: **Nationwide**  
BLM Bond File No.: **CO-1104**

Authorized Signature:

  
**Stephanie A. Ysasaga**

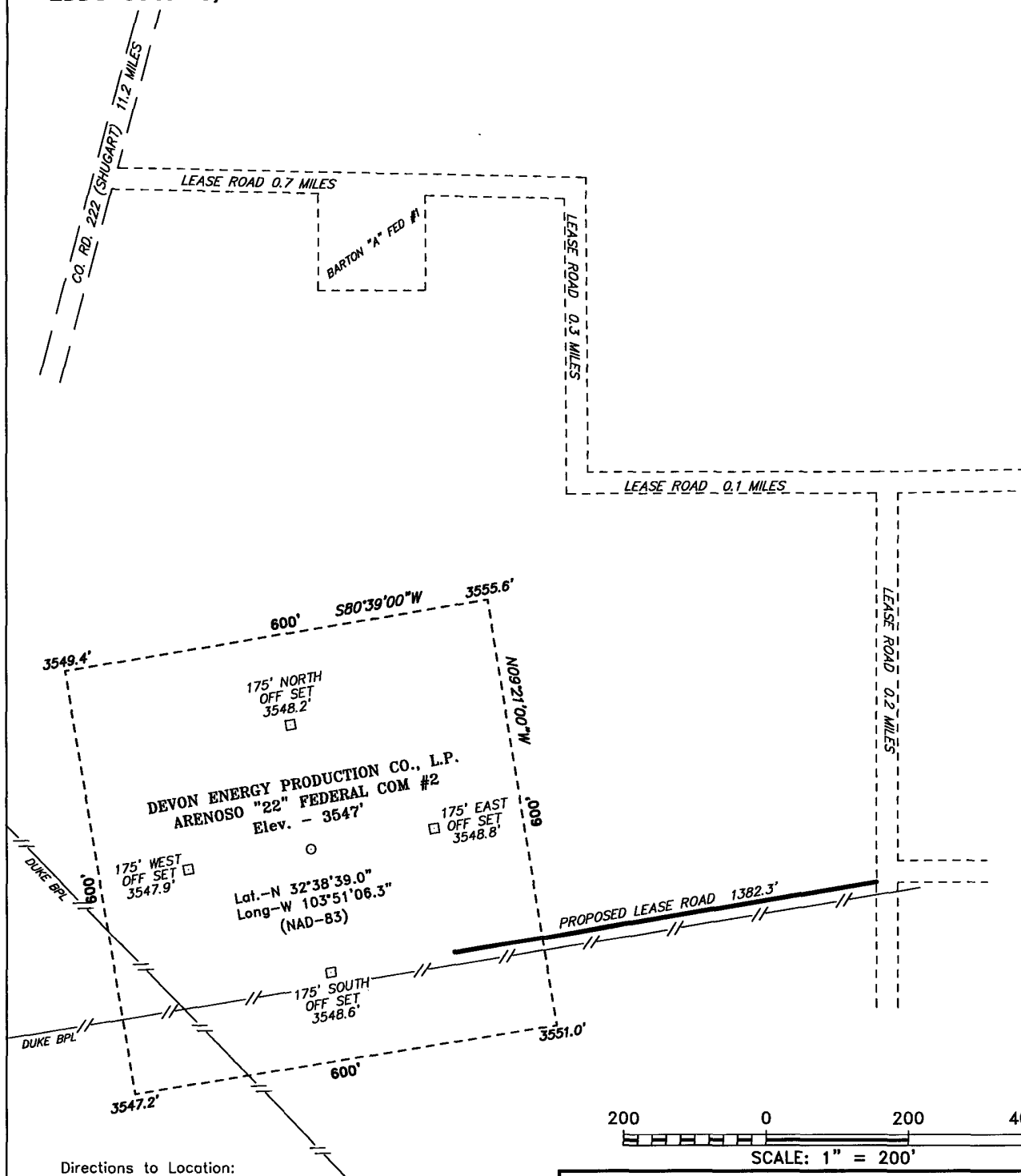
Title:

**Sr. Staff Engineering Technician**

Date:

**03/26/07**

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM MILE MARKER 138 OF US. HWY 82, PROCEED WEST APPROX. 200 FEET TO CO. RD. 222 (SHUGART), ON CO. RD. 222 GO SOUTH 11.2 MILES TO LEASE ROAD, GO EAST ON LEASE ROAD 0.7 MILES TURNING SOUTH FOR 0.3 MILES, TURNING BACK EAST FOR 0.1 MILES TO LEASE ROAD, TURN SOUTH ON LEASE ROAD FOR 0.2 MILES TO PROPOSED LEASE ROAD.

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

W.O. Number: 17856

Drawn By: J. M. SMALL

Date: 03-16-2007

Disk: 17856W JMS

**DEVON ENERGY PROD. CO., L.P.**

REF: ARENOSO "22" FEDERAL COM #2/ WELL PAD TOPO

THE ARENOSO "22" FEDERAL COM No. 2 LOCATED 1980'

FROM THE SOUTH LINE AND 990' FROM THE EAST LINE OF

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST,

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

Survey Date: 03-14-2007

Sheet 1 of 1 Sheets

## DRILLING PROGRAM

Devon Energy Production Company, LP

### **Arenoso 22 Federal 2**

Surface Location: 1980' FSL & 990' FEL, Unit · | Sec 22 T19S R31E, Eddy, NM

Bottom hole Location: 1980' FSL & 1650' FEL, Unit J Sec 22 T19S R31E, Eddy, NM

#### **1. Geologic Name of Surface Formation**

a. Quaternary

#### **2. Estimated tops of geological markers:**

a. Quaternary	19'
b. Rustler Dol	570'
c. Salado Salt	810'
d. Tansil Dolomite	2198'
e. Yates Ss	2304'
f. Seven Rivers	2572'
g. Capitan Ls	2692'
h. Cherry Canyon Ss	4491'
i. Brushy Canyon Ss	5250'
j. 1 <sup>st</sup> Bone Spring Ls	6956'
k. 1 <sup>st</sup> Bone Spring Ss	8248'
l. 2 <sup>nd</sup> Bone Spring Ls	8481'
m. 2 <sup>nd</sup> Bone Spring Ss	8917'
n. 3 <sup>rd</sup> Bone Spring Ls	9360'
o. 3 <sup>rd</sup> Bone Spring Ss	9820'
p. Wolfcamp Ls	10328'
q. Penn Shale	10620'
r. Strawn Ls	11176'
s. Atoka Clastics	11636'
t. Atoka Bank Ls	11794'
u. U Morrow Ls	12011'
v. M Morrow Clastics	12217'
w. L Morrow Marker	12539'
x. L Morrow Ss	12570'
y. Barnett Shale	12650'
z. Total Depth	12800'

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

a. Quaternary	19'	Fresh Water
b. Rustler Dol	570'	Fresh Water
c. Seven Rivers – 3 <sup>rd</sup> Bone Spring Ss	9802'	Oil
d. Wolfcamp Ls	10328'	Gas
e. Strawn Ls – Atoka Clastics	11636'	Gas
f. M Morrow	12217'	Gas

g. L Morrow Ss

12570'

Gas

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 600' and circulating cement back to surface. Fresh water will be protected by setting 9 5/8" casing at 4500' and circulating cement to surface. The Morrow intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing.

## 4. Casing Program:

712

see COA

Hole Size	Interval	OD Csg	Weight	Collar	Grade
17 1/2"	0' - 600'	13 3/8"	48#	ST&C	H-40
12 1/4"	0' - 3900'	9 5/8"	40#	BT&C	J-55
12 1/4"	3900' - 4500'	9 5/8"	40#	BT&C	HCK-55
8 3/4"	0' - 12,800'	5 1/2"	17#	LT&C	HCP-110

## 5. Cement Program:

a. 13 3/8" Surface

Cement to surface with lead Slurry: 300 sacks (35:65) Poz (Fly Ash): Class C Cement + 2% Calcium Chloride + 0.25 lbs/sack Cello Flake + 6% Bentonite. Tail Slurry: 250 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake.

b. 9 5/8" Intermediate

Cement to surface; with 2 Stage Intermediate w/ DV @ 2350'

**Stage 1:** Lead Slurry: 500 sacks (35:65) Poz (Fly Ash): Class C Cement + 3% Sodium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 6% Bentonite + 0.005 gps FP-13L. Tail Slurry: 300 sacks (60:40) Poz (Fly Ash): Class C Cement + 4% bwoc MPA-1 + 5% Sodium Chloride + 0.4% Sodium Metasilicate

**Stage 2:** Lead Slurry: 725 sacks (35:65) Poz (Fly Ash): Class C Cement + 3% Sodium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 6% Bentonite + 0.005 gps FP-13L. Tail Slurry: 100 sacks (60:40) Poz (Fly Ash): Class C Cement + 4% bwoc MPA-1 + 5% Sodium Chloride + 0.4% Sodium Metasilicate

c. 5 1/2" Production

Cement with 2 Stage Long String w/ DV @ 9,000' and TOC at 4000'.

**Stage 1:** Lead Slurry: 550 sacks (35:65) Poz (Fly Ash): Class H Cement + 0.25 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 6% Bentonite + 0.4% FL-52A.

**Stage 2:**

see COA

Tail Slurry: 800 sacks (60:40) Poz (Fly Ash): Class H Cement + 1% Sodium Chloride + 0.75% BA-10 + 0.1% R-3 + 0.25 lbs/sack Cello Flake + 2 lbs/sack Kol Seal + 4% bwoc MPA-1.

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 500' above the 9 5/8" casing shoe.

6. **Pressure Control Equipment:**

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (3M) system) double ram type (5000 psi WP) preventor and a bag-type (Hydril) preventor (5000 psi WP). Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4 1/2" 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 9 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 5000 psi WP rating.

7. **Proposed Mud Circulation System**

see COA

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' - 600'	8.5-9.5	28-35	NC	Fresh Water
600' - 4,500'	10	28	NC	Brine
4,500' - 10,000'	8.4 - 9.8	28-30	NC	Cut Brine
10,000 - 12,800'	9.2-10.2	36-48	6-10cc	Brine/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 Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- 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:**

- 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 H<sub>2</sub>S in this area. If H<sub>2</sub>S 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 5200 psi and Estimated BHT 170°. No H<sub>2</sub>S is expected to be encountered.

**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.

- 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.

Marcos Ortiz  
Operations Engineer Advisor

Don Mayberry  
Superintendent

Devon Energy Production Company, L.P.  
20 North Broadway, Suite 1500

Devon Energy Production Company, L.P.  
Post Office Box 250

Oklahoma City, OK 73102-8260

Artesia, NM 88211-0250

(405) 552-8152 (office)  
(405) 317-0666 (Cellular)

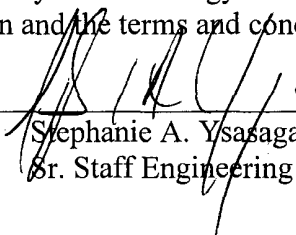
(505) 748-3371 (office)  
(505) 746-4945 (home)

#### 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: March 26<sup>th</sup>, 2007

  
Stephanie A. Ysasaga  
Sr. Staff Engineering Technician

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

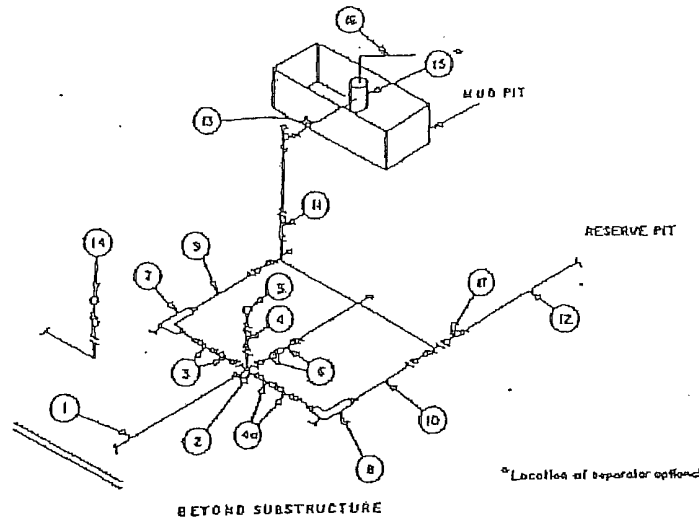
1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
  - a. Characteristics of H2S
  - b. Physical effects and hazards
  - c. Proper use of safety equipment and life support systems.
  - d. Principle and operation of H2S detectors, 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.

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

3 MWP - 5 MWP - 10 MWP

Exhibit E



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		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

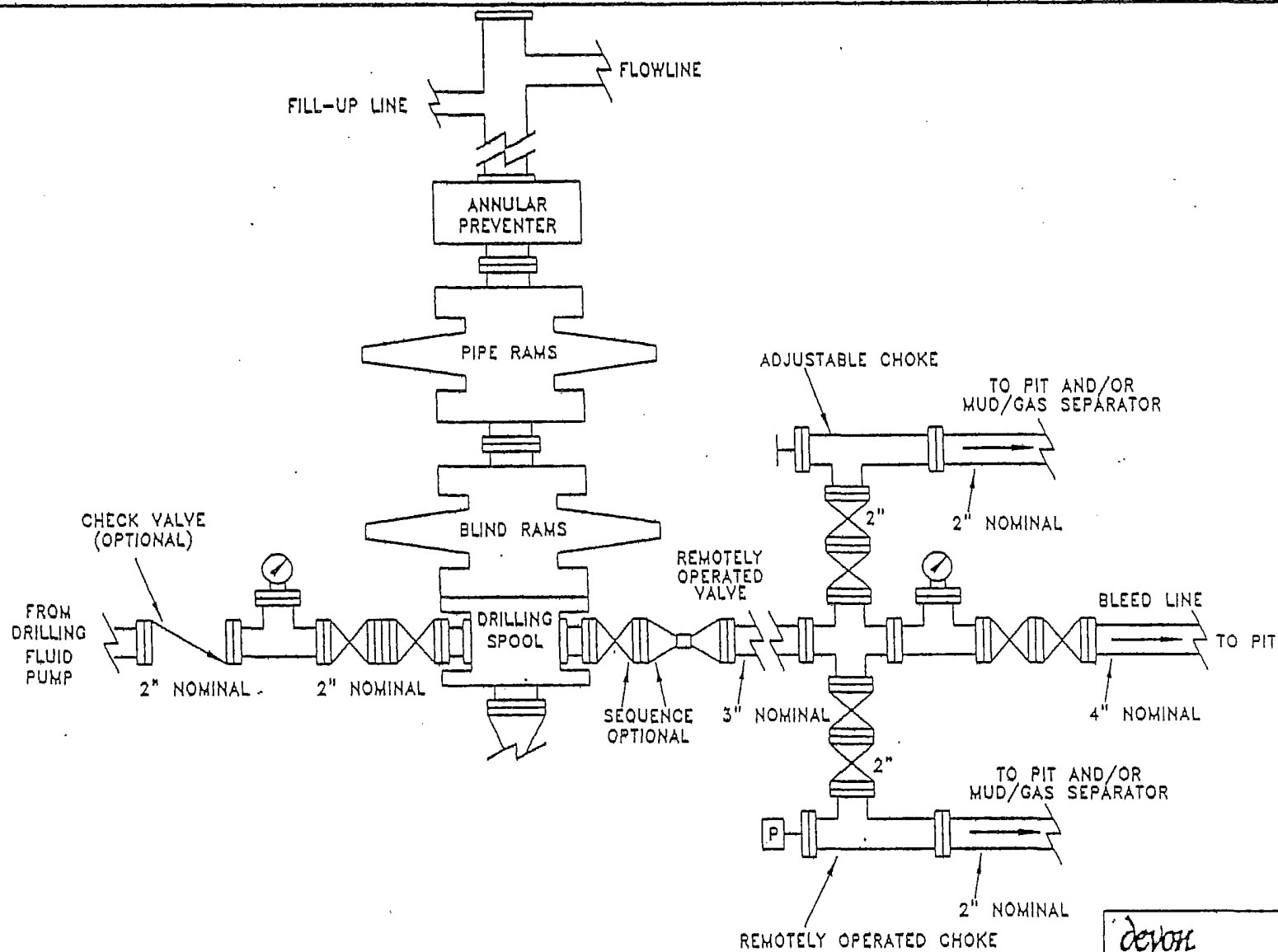
(1) Only one required in Class 3M.

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

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

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- 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.
- 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.
- Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.



devon

EXHIBIT 1

PROPOSED 5-M BOPE  
AND CHOKE ARRANGEMENT

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## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Devon Energy Prod. Co., LP  
Well Name & No. Arenoso 22 Federal # 2  
Location: 1980'FSL, 990'FEL, SEC22, T19S, R31E, Eddy County, NM  
BHL: 1980'FSL, 1650'FEL, SEC22, T19S, R31E, Eddy County, NM  
Lease: NM-44594

### I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness:

1. Spudding well
2. Setting and/or Cementing of all casing strings
3. BOPE tests

- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822

B. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan is N/A.

C. 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.

D. 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.

E. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### II. CASING:

A. The 13.375 inch surface casing shall be set at 712 feet and cement circulated to the surface.

1. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the 9.625 inch intermediate casing is circulate cement to the surface. If circulation is lost in the Capitan Reef, while drilling the well bore @ approximately 2600', the operator will switch to a fresh water based mud to complete the drilling of the well bore for this casing string. If cement does not circulate see A.1 thru 4.

C. The minimum required fill of cement behind the 5.5 inch production casing is cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string. If circulation is lost while drilling the well bore for the intermediate casing string, cement on the 5.5" casing will be circulate to 200 feet above the most shallow lost circulation interval on the 9.625" casing well bore.

D. If hard band drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **III. PRESSURE CONTROL:**

**A.** All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53.

**B.** Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 psi.**

**C.** Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **9.625** inch casing shoe shall be **5000 psi.**

**D.** The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. BOP/BOPE must be tested by an independent service within 500 feet of the top of the Wolfcamp Formation. This test does not exclude the test prior to drilling out the casing shoe as per onshore order No. 2.
6. A variance to test the BOP and BOPE nipped up on the **13.375 inch casing** to the reduced pressure of **1200** psi with the rig pumps is approved.

### **IV. DRILLING MUD:**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.
4. Fresh water based mud will be used to drill to 712 feet.

### **V. Hazards:**

1. Our geologist has indicated that there is potential for flows in the Artesia and Salado groups.
2. Our geologist has indicated that there is potential for lost circulation in the Artesia and Salado groups as well as the Capitan Reef.
3. Our geologist has indicated that there is potential for abnormal pressure in the Wolfcamp, Strawn, Atoka and Morrow formations.

**Engineering may be contacted at 505-706-2779 for variances if necessary.**

**FWright 3/28/07**