

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. LC-032511-F
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME ---
2. NAME OF OPERATOR ARCO Oil and Gas Company		7. UNIT AGREEMENT NAME South Justis Unit
3. ADDRESS OF OPERATOR P.O. Box 1610, Midland, Texas 79702 Phone, 915-688-5672		8. FARM OR LEASE NAME South Justis Unit 'B'
4. LOCATION OF WELL (Report clearly and in accordance with any State requirements.) At surface 900' FNL & 1650' FWL (Unit Letter C) At proposed Prod. zone Approximately the same		9. WELL NO. 110
13. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE 4.0 miles east of Jal, New Mexico		10. FIELD AND POOL, OR WILDCAT Justis Blinbry Tubb Drinkard
15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. line, if any) 330'	16. NO. OF ACRES IN LEASE 5360	11. SEC., T., M., OR BLK. AND SURVEY OR AREA 11-T25S-R37E
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 850'	19. PROPOSED DEPTH 6,200'	12. COUNTY Lea
21. ELEVATIONS (Show whether GR or KB) 3122' GR		13. STATE NM
23. PROPOSED CASING AND CEMENTING PROGRAM		17. NO. OF ACRES ASSIGNED TO THIS WELL 40
22. APPROX. DATE WORK WILL START Spud 3/94		20. ROTARY OR CABLE TOOLS Rotary

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT ^{ft³}
20"	13-3/8"	48.0#	40'	50 cu ft
12-1/4"	8-5/8"	24.0#	1000'	825 cu ft
7-7/8"	4-1/2"	10.5#	6200'	3,200 cu ft

Subject well is planned as a 6200' MD (6200' TVD) straight well. 3M psi BOPE will be used from 1000' to TD. Attachments are as follows:

1. Certified Location Plat
2. Drilling Plan with Attachments 1-3
3. Surface Use Plan with Attachments 3-9

Previously submitted by AOGC to BLM:

1. Archaeological Survey of The South Justis Waterflood Project
2. Preliminary Project Report South Justis Unit
3. Unit Agreement South Justis Unit

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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 Johnny Shible TITLE DRILLING TEAM LEADER DATE 10/16/93
(This space for Federal or State Use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY Scott Powers TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Approval Subject to
General Requirements and
Special Conditions

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly 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.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator ARCO OIL AND GAS COMPANY			Lease South Justis Unit "B"		Well No 110																																								
Unit Letter C	Section 11	Township 25 S	Range 37 E	County Lea																																									
Actual Footage Location of Well: 900 feet from the North line and 1650 feet from the West line Ground level Elev. 3122' Producing Formation Blinberry-Tubb-Drinkard Pool Justis Dedicated Acreage: 40 Acres																																													
<p>1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.</p> <p>2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).</p> <p>3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.? <input type="checkbox"/> Yes <input type="checkbox"/> No If answer is "yes" type of consolidation _____ If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.</p>																																													
<table border="1"><tr><td colspan="2">1650'</td><td>900'</td><td>B 11</td><td>11</td></tr><tr><td colspan="2"></td><td>O</td><td>B 110</td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td></tr></table>						1650'		900'	B 11	11			O	B 110																															
1650'		900'	B 11	11																																									
		O	B 110																																										
<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature <u>Johnny Shields</u> Printed Name <u>Johnny Shields</u> Position <u>Drilling Team Leader</u> Company <u>ARCO Oil & Gas Company</u> Date <u>10-13-93</u></p> <p>SURVEYOR CERTIFICATION</p> <p>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 knowledge and belief.</p> <p>Date Surveyed <u>Sept. 24, 1993</u> Signature & Seal of Professional Surveyor <u>[Signature]</u> Certificate No. <u>648</u></p>																																													

DRILLING PLAN

Attach to BLM Form 3160-3
ARCO Oil and Gas Company
Well: South Justis Unit B-110
900' FNL & 1650' FWL
Section 11-T25S-R37E
Lea County, New Mexico

1. Surface Geological Formation

Ogallala Formation of late Tertiary age.

2. Estimated Tops of Geological Markers

<u>Formation</u>	<u>TVD</u>
Salt	1000'
Yates	2275'
Queen	2975'
Grayburg	3100'
San Andres	3550'
Glorietta	4625'
Blinbry	5000'
Tubb	5675'
Drinkard	5875'

3. Estimated Tops of Possible Water, Oil, Gas or Minerals:

Sands above 1000'	Water *
Yates	Gas**
Blinebry	Oil or Gas**
Tubb	Oil or Gas**
Drinkard	Oil or Gas**

* Groundwater will be protected by 8-5/8" surface casing cemented to surface.

** Productive horizons will be protected by 4-1/2" production casing cemented to surface.

4. Pressure Control Equipment

<u>Interval, TVD</u>	<u>Pressure Control Equipment</u>
0' - 1000'	No pressure control required
1000' - 6200'	11", 3M psi double ram preventer with 3M psi annular preventer.

Exhibits 1, 2, and 3 show the BOP stack arrangement, the choke manifold arrangements and the BOP specifications, respectively. The BOPE will be hydraulically tested per BLM requirements outlined by Onshore Oil and Gas Order No. 2. Pipe rams and blind rams will be functioned on each trip out of the hole. The annular preventer will be functioned once a week. All BOPE checks and tests will be witnessed by ARCO's representative and will be noted on the IADC daily drilling report. Accessories to BOPE will include an upper kelly cock, lower kelly cock, and floor safety valve all with pressure rating equivalent to the BOP stack.

5. H2S Contingency Plan

Exhibit "10" shows the H2S Contingency Plan as a guideline for all company and contractor personnel in the field who may be exposed to H2S. It explains the emergency procedure, the equipment requirement (i.e. H2S detector, rescue equipment, etc.) and the proper evacuation procedure.

6. Proposed Casing and Cementing Program

	<u>Hole Size</u>	<u>Interval, MD</u>	<u>Casing Size</u>	<u>Weight & Grade</u>
Conductor	20"	0 - 40'	13-3/8"	48.0# H-40
Surface	12-1/4"	0 - 1000'	8-5/8"	24.0# J-55
Production	7-7/8"	1000' - 6200'	4-1/2"	10.5# J-55

Cement Program: (Actual volumes will be based on caliper log when available)

Conductor - Cement to surface with redimix.

Surface - Cemented to surface with total of ± 825 cu ft as follows:

Lead Slurry - ± 300 sks Pacesetter Lite 65/35/6 C/Poz/Gel + 2% CaCl₂ + 1/4 pps Cello-Seal
Tail Slurry - ± 200 sks Class "C" + 2% CaCl₂ + 1/4 pps Cello-Seal

Production - Cement to surface with total of ± 3200 cu ft as follows:

Option 1: If no loss circulation occurs or loss is controlled.

Lead Slurry - ± 1175 sks Super C 44/20/20 C/Poz/CSE + 0.5% Thrifty Lite 1/4 pps Cello-Seal

Tail Slurry - ± 300 sks Cl "C" + 12 pps CSE + 1 pps WL-1P + 0.3% CF-2 + 1/4 pps Cello-Seal + 3 pps Hi-Seal

Option 2: If loss circulation is severe then a DV Tool will be set at $\pm 3250'$

Stage 1 - Lead Slurry - ± 400 sks Pacesetter Lite 65/35/6 C/Poz/Gel 3% salt

Tail Slurry - ± 300 sks Cl "H" + 8 pps CSE + 0.6% CF-14 + 0.35% Thrifty Lite

Stage 2 - Lead Slurry - ± 900 sks Pacesetter Lite 65/35/6 C/Poz/Gel + 3% salt

Tail Slurry - ± 100 sks Cl "C" Neat

7. Mud Program

<u>Depth</u>	<u>Mud Type</u>	<u>Weight ppg</u>	<u>Funnel Viscosity</u>	<u>Water Loss</u>
0 - 1000'	Spud Mud	8.4 - 8.9	29-32	NC
1000' - 4850'	SBW	± 10.0	29-32	NC
4850' - 6200'	SWG	± 10.0	32-34	<15

8. Auxiliary Equipment

Upper Kelly Cock, Lower Kelly Cock, and Full Opening Stabbing Valve

9. **Testing, Coring and Logging Program**

A. Drill Stem Tests - None planned.

B. Coring - None planned.

C. Logging - No mud logging planned

D. Electric Logs

Open Hole

Interval: TD - 4500' with GR-CAL to surface casing on one run

GR-Spectralog/Compensated z-Densilog/Sidewall Epithermal Neutron/Caliper

GR/Dual Laterolog/Micro Laterolog/Caliper

Cased Hole

Temperature Survey (if cement not circulated on Production Csg)

10. **Anticipated Abnormal Temperature, Pressure, or Hazards**

Possible lost circulation at $\pm 975'$ in anhydrite section. Seepage and lost circulation is expected starting in the Queen Formation and continuing through the Glorietta (3000'-5000').

11. **Anticipated Starting Date and Duration of Operations**

Pending favorable weather and permit approval, construction work on this location is planned to begin in January, 1994. Construction work will require 4 days, move-in and rig up rotary tools, 1 day, drill and complete, 21 days. It is planned to spud the well in March, 1994.

**EXHIBIT 1
BOP ARRANGEMENT
ARCO OIL & GAS CO.
SOUTH JUSTIS UNIT WELLS**

