DRILLING PLAN

Attachment to BLM Form 3160-3
ARCO Permian
Well: Barclay Federal #31
660'FNL, 660'FEL
Section 1-T23S-R31E
Eddy County, New Mexico

1. Surface Geological Formation

Quarternery Formation

2. Estimated Tops of Geological Markers

Formation	TVD
Rustler	865'
Castile	1200'
Lamar Shale	4540'
Bell Canyon	4575'
Cherry Canyon	5650'
Brushy Canyon	7000'
Bone Spring	8425'

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

Sands above 800'	Water
Cherry & Brushy Canyon	Oil or Gas

4. Pressure Control Equipment

Interval, TVD	Pressure Control Equipment
0'-860'	No pressure control required
860'-TD	11", 3M psi double ram preventer with 3M psi annual 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. 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. Proposed Casing and Cementing Program

	Hole Size	Interval M.D.	Casing Size	Weight & Grade
Surface	17-1/2"	0'-860'	13-3/8"	48.0# H-40
Intermediate	11"	0-4600'	8-5/8"	32.0# J-55
Production	7-7/8"	0-8450'	5-1/2"	15.5# J-55

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

Surface - Cement to surface with total of +/- 1213 cu ft as follows:
Lead Slurry - 500 sks 35:65 Poz: C + 2% $CaCl_2$ + 1/4 pps Cello-Seal
Tail Slurry - 200 sks Class "C" + 2% $CaCl_2$ + 1/4 pps Cello-Seal

Intermediate - Cement to surface with a total of +/- 2545 cu ft as follows:
Lead Slurry - 1100 sks 35:65 Poz: C + 1/4 pps Cello-Seal + 3% Salt
Tail Slurry - 200 sks Class "C" + 2% $CaCl_2$ + 1/4 pps Cello-Seal

Production - Cement to Int Csg. with a total of +/- 1730 cu ft as follows:
1st Stage: Lead Slurry - 500 sks 35:65 Class "H" Poz + 1/4 pps Cello-Seal + 0.5% FL52
Tail Slurry - 400 sks Class "H" + 12% BR-90 + 0.4% FL52 + 3% salt + .2% CD-32 + 1/4 pps Cello-Seal

6. Mud Program

Depth	Mud Type	Weight ppg	Funnel Viscosity	Water Loss
0'-860'	Spud Mud	8.4-8.9	29-34	NC
860'-4600'	Brine	10.0-10.2	28-30	NC
4600'-8300'	FW	8.4-8.8	28-30	NC
8300;-8450'	FW LSND	8.6-9.0	32-34	≤15 cc

7. Auxiliary Equipment

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

8. Testing, Coring, and Logging Program

A. Drill Stem Tests - None planned.
B. Coring - None planned.
C. Logging - Mud logging planned from 4000' to TD
D. Electric Logs

Open Hole:	DLL/MLL, CNL/LDT, GR:	Shoe of 8-5/8" csg to TD
Cased Hole:	GR/CNL	Surf. to shoe of 8-5/8" csg
	GR/CCL	TD to top cement in prod. csg.

9. Anticipated Abnormal Temperature, Pressure, or Hazards

Possible water flow from +/- 3500' to 4200'. Seepage is expected starting in the Cherry Canyon formation and continuing to TD (5650'-8450').

10. Anticipated Starting Date and Duration of Operations

As soon as possible.

SURFACE USE PLAN

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ARCO Permian
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660'FNL, 660'FEL
Section 1-T23S, R31E
Eddy County, New Mexico

1. Directions to Location/Existing Roads

From Jal, New Mexico go West +/- 22 miles on Highway 128 to Red Road. Go North 5.20 miles and turn right on lease road. Go .08 miles East turn left on new lease road. Go North .1 miles. Exhibits "4" and "5" are the Vicinity Map and the Location Verification Map.

A. The proposed development wellsite is staked as shown on the certified location plat attached.

B. Most of the existing roads will not require any improvement or repair. Any existing sections of road that needs improvement or repair will be fixed to a condition equal to that of the good sections of the existing road. All roads will be maintained in a condition equal to that which existed prior to the start of the construction.

2. Planned Access Roads

A. Approximately 2000' of new access road will be required.

B. New access roads will have a 12' wide travel lane and be surfaced with 6" compacted caliche.

C. Turnouts: None

D. Culverts: None

E. Cuts and fills: No major road cuts or fills will be necessary.

3. Location of Existing Wells

A. The existing wells within a one mile radius of this location are shown on Exhibit "6".

4. Location of Existing or Proposed Facilities

A. Existing Facilities - No facilities are currently existing for this well.

B. New Facilities Proposed - If a successful Delaware producer is completed, surface facilities will consist of a treater and collection tanks for oil and water.

5. Location and Type of Water Supply

Fresh and brine water used in drilling and completion operations will be purchased from independent trucking companies located in Jal or Hobbs, New Mexico. The water will be hauled over existing and new roads to the location.

6. Source of Construction Materials

Caliche for the road and well pad construction will be purchased from nearby land owned by J. C. Mills, P. O. Box 190, Abernathy, TX 79311 managed by his grandson Stacey Mills. The caliche will be hauled over existing and new roads to the location..

7. Methods of Handling Waste Disposal

A. Drill cuttings will handled in the reserve pit and buried during reclamation operations.

B. Trash, waste paper, garbage and junk will be contained in a fenced trash trailer to prevent scattering by the wind and hauled to a municipal sanitary landfill. All sacked drilling mud will be picked up by the supplier. The drilling contractor will haul away any chemicals that they use while drilling.

C. Toilet facilities will be provided for human waste. Sewage disposal facilities will be in accordance with State and Local Regulations.

D. Drilling fluids will be handled as follows: The free water will be either hauled to the reserve pit of the next drilling well for re-use or hauled to a permitted SWD. If any mud is hauled away it will be disposed of at an approved mud disposal site. Remaining drilling fluids will be allowed to evaporate in the reserve pit until dry enough for reclamation.

E. Any fluids produced during swab testing the well while the pulling unit is on location will be collected in a test tank. Produced water will be hauled to a permitted SWD. Oil produced will remain in the test tank until sold and hauled from the site.

8. Auxiliary Facilities

No new facilities will be built during drilling of this well. A trailer will be used as an office and temporary living quarters for wellsite supervision.

9. Wellsite Layout

A. Exhibit "7" shows the proposed wellsite layout and dimensions. Major rig components and reserve pits are shown.

B. No significant cuts or fills will be required.

C. The reserve pits will be plastic lined with minimum 6 mil double x-laminated plastic. The liner will overlap the pit dikes and be anchored down. The reserve pit will be fenced on three sides during drilling operations. After drilling operations have ceased the fourth side of the pit will be fenced.

10. Plans for Reclamation of the Surface

A. In a timely manner, after finishing the drilling and/or completion operations all equipment and other material not needed for production operations will be removed. The location will be cleared of all trash and debris then any ruts, etc. will be filled. The cellar will be filled around the wellhead.

B. Any pits containing fluids will be fenced until they are filled. The NMOCD pit netting rules will be followed. The reserve pits will be reclaimed by deep burying the drill cuttings. The pit area will be leveled and contoured to conform to the surrounding area.

A stockpile of topsoil from the location construction will be evenly distributed over the disturbed area. Re-vegetation procedures will comply with BLM standards.

C. Upon abandonment of the well, surface restoration will be in accordance with the surface owner requirements and will be accomplished as expediently as possible.

11. Surface Ownership

The surface for the wellsite location is on BLM surface and minerals and Leased by J. C. Mills, P. O. Box 190, Abernathy, TX 79311.

12. Additional Information

A. Topography: Relatively flat grassland.

B. Vegetation includes mesquite, catclaw, creosote, broom snakeweed, various cacti, shin oak, sand sage, narrowleaf yucca and mixed grasses.

C. The soil is a sandy loam type.

D. Primary use of the land is livestock grazing and accessing producing wells.

E. There are no nearby dwellings.

F. An archaelogical block survey has been completed; a copy of which will be sent to your office.

G. The selected dirt contractor will be furnished with an approved copy of the Surface Use Plan and any additional stipulations prior to beginning any work.

13. Operator's Representatives

J.E. Shields
ARCO Permian
P. O. Box 1610
Midland, Texas 79702
(915)688-5574

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar will the conditions which currently 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 ARCO Permian and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Johnny Shields — 2/10/00

Johnny Shields
ARCO Permian Drilling Manager

Date

BLOWOUT PREVENTION EQUIPMENT SPECIFICATIONS

1. All BOP equipment shall be fluid and/or mechanically operated.

2. BOP's and all fittings will be in good working condition.

3. Equipment through which the bit must pass shall be at least as large as the casing size being drilled.

4. The nipple above the BOP shall be at least the same size as the last casing set.

5. The upper kelly cock with handle and lower kelly cock shall be rated at the BOP working pressure.

6. A floor safety valve (full opening) or drill string BOP with appropriate pressure ratings shall be available on the rig floor with connections or subs to fit any tool joint in the string.

7. The minimum size choke line shall be 3 inches nominal diameter, with a minimum size for vent lines downstream of chokes of 2 inches nominal, and vent lines which by-pass shall be a minimum of 3 inches nominal and as straight as possible.

8. All valves, fittings and lines between the closing unit and the blowout preventer stack should be of steel construction with rated working pressure at least equal to working pressure rating of the stack. Lines shall be bundled and protected from damage.

9. Minimum size for kill line is 2 inches nominal.

10. Ram type preventers shall be equipped with extension hand wheels or hydraulic locks.