

## N. M. Oil Cons. Division

11 S. 1ST ST.

ALBUQUERQUE, NM 87102

SUBMIT IN 1 DATE\*

(Other instructions on reverse side)

FORM APPROVED

OMB NO. 1004-0136

Expires: February 28, 1995

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT5-13-97 JF  
5-7-97 ROM

5. LEASE DESIGNATION AND SERIAL NO.

NM 22080

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

20860

8. FARM OR LEASE NAME, WELL NO.

BARCLAY FEDERAL

2

9. API WELL NO.

30-015-29683

10. FIELD AND POOL, OR WILDCAT

LIVINGSTON RIDGE (DEL) S.

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

12-T23S-R31E

12. COUNTY OR PARISH

EDDY

13. STATE

NM

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

14. TYPE OF WORK

DRILL ☒DEEPEN ☐

15. TYPE OF WELL

OIL  
WELL ☒GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☒MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

ARCO Permian

990

3. ADDRESS AND TELEPHONE NO.

P.O. BOX 1610, MIDLAND, TX 79702

915 688-5570

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

At surface

660' FSL, 1980' FEL

At proposed prod. zone 1780'

SAME

Unit 0

OIL CON. DIV.

JUN 18 1997

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

21 MILES EAST FROM LOVING, NM

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

660

16. NO. OF ACRES IN LEASE

1280.81

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,

OR APPLIED FOR, ON THIS LEASE, FT.

5442

19. PROPOSED DEPTH

8600

20. ROTARY OR CABLE TOOLS

ROTARY

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

3500 GR

22. APPROX. DATE WORK WILL START\*

SPUD 5/97

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 STS C	860	775 Sx <del>WIRELINE</del> CIRCULATE
11	8 5/8 K-55	32 STS C	4600	1800 Sx <del>WIRELINE</del> CIRCULATE
7 7/8	5 1/2 J-55	15.5, 17 LTS C	8600	480 Sx

8600'

Subject well is planned as a 6800' straight hole.  
3,000 psi BOPE will be used from 860' to TD.

Attachments are as follows:

1. Certified Location Plat
2. Drilling Plan with attachments
3. Surface Use Plan with attachments

RECEIVED

MAY 07 '97

BOW  
ROSWELL, NM

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

Charles W. Kutzler

TITLE

REGULATORY COMPLIANCE

DATE

05-06-97

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds 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

H. H. J. L. L.

TITLE

H. H. J. L. L.

DATE

5/11/97

\*See Instructions On Reverse Side

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 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, N.M. 87504-2088**

## OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code	Pool Name
			LIVINGSTON RIDGE (DELAWARE)
Property Code	Property Name		Well Number
	BARCLAY FEDERAL		2
OGRID No.	Operator Name		Elevation
000990	ARCO PERMIAN		3496

### Surface Location

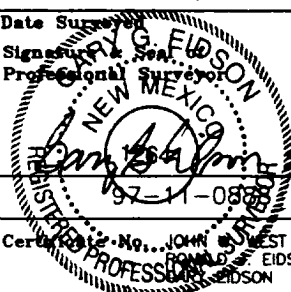
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	12	23 S	31 E		660	SOUTH	1780	EAST	EDDY

## 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.

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>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</i>	
<u>Charles W. Knight Jr.</u> Signature	
<u>CHARLES W. KNIGHT, JR.</u> Printed Name	
<u>REGULATORY AGENT</u> Title	
<u>5/29/97</u> Date	
<b>SURVEYOR CERTIFICATION</b>	
<i>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.</i>	
<u>MAY 22, 1997</u> Date Surveyed	
<u>Charles W. Knight Jr.</u> Signature Professional Surveyor	<u>DMCC</u>
	
<u>Charles W. Knight Jr.</u> Certified by Mr. JOHN A. WEST Professional Surveyor	<u>676</u> 3239 12641

# EXHIBIT 1

## DRILLING OPERATIONS

CLASS -1: NORMAL PRESSURE < 10PPG

OPTION - 2: MMS STANDARD; SINGLE SIZE DRILL STRING

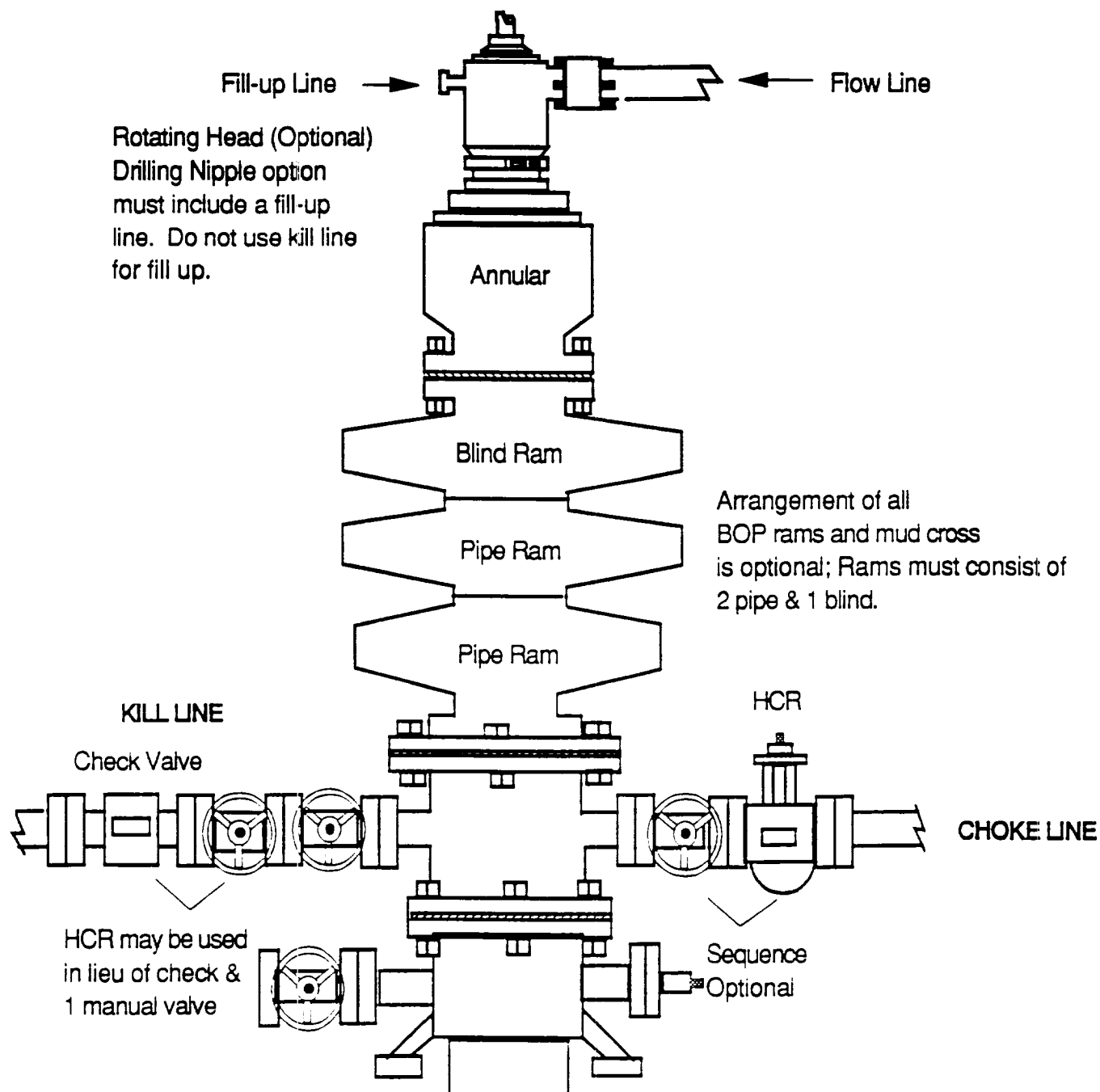
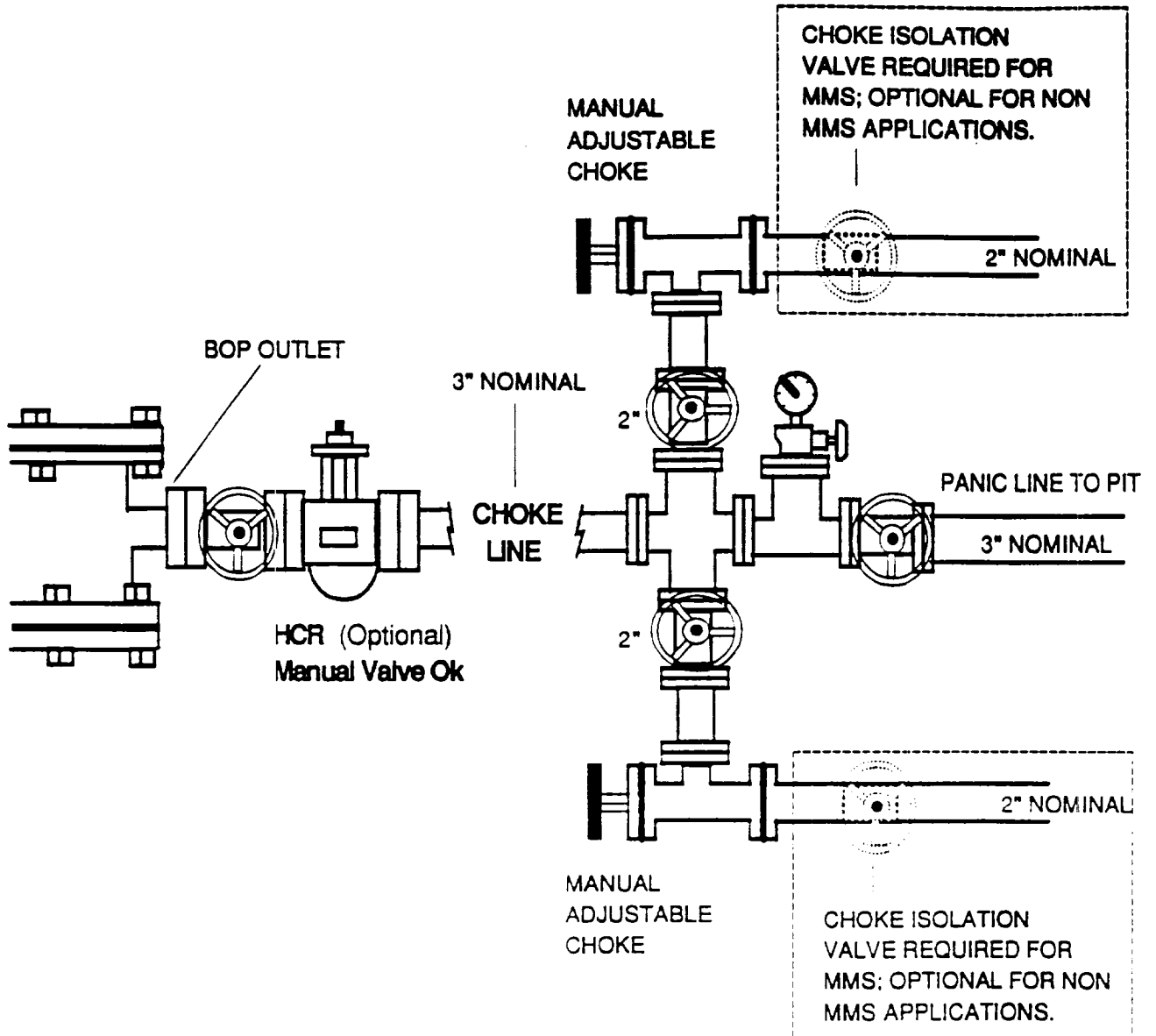


EXHIBIT 2

**DRILLING OPERATIONS  
CHOKE MANIFOLD  
2M AND 3M SERVICE**



## 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"	860' - 4600'	9 5/8"	32.0# J-55
Production	7 7/8"	4600' - 8600'	5-1/2"	15.5# & 17.0# J-55 LT 1 C 7 900' 15-5 ppf 1600' 17 ppf

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

Surface - Cement to surface with total of  $\pm 1360$  cu ft as follows:

Lead Slurry - 575 sks 35:65 Poz: C + 2%  $\text{CaCl}_2$  + 6% Gel + 1/4 pps Cello-Seal + 10 pps Gilsonite

Tail Slurry - 200 sks Class "C" + 2%  $\text{CaCl}_2$  + 1/4 pps Cello-Seal

Intermediate - Cement to surface with total of  $\pm 3572$  cu ft as follows:

Lead Slurry - 1600 sks 35:65 Poz: C + 2%  $\text{CaCl}_2$  + 6% Gel + 1/4 pps Cello-Seal

Tail Slurry - 200 sks Class "C" + 2%  $\text{CaCl}_2$  + 1/4 pps Cello-Seal

Production - Cement to 6500' with a total of  $\pm 875$  cu ft as follows:

Lead Slurry - 155 sks 35:65 Class "H" Poz + 6% Gel + 5% salt + .25 pps Cello-Seal

Tail Slurry - 325 sks Class "H" + 12 pps BA-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'-8400'	FW	8.4-8.8	28-30	NC
8400' - 8600'	FW LSND	8.6-9.0	32-34	<10

## 7. Auxiliary Equipment

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

## 8. Testing, Coring and Logging Program

- Drill Stem Tests - None Planned.
- Coring - None planned.
- 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	Surface 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  $\pm 3500'$  to  $4200'$ . Seepage is expected starting in the Cherry Canyon Formation and continuing to TD ( $5650'$ - $8600'$ ).

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

Pending favorable weather and permit approval, construction work on this location is planned to begin in May, 1997. 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 May, 1997.

## EXHIBIT 3

### 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.

**TITLE PAGE/ABSTRACT/  
NEGATIVE SITE REPORT  
ROSWELL DISTRICT**

**BLM/ RDO 1/95**

1. BLM Report No.	2. (ACCEPTED) (REJECTED)	3. NMCRIS No. 57026
4. Title of Report (Project Title): Archaeological Survey of ARCO-PERMIANS proposed Access Road (100' X 850'; 1.95 acres) to connect the Barclay Federal Well No.s 2, 3, and 4, located within a 1,280 acre tract of land; located in Section 13, T23S, R31E, NMPM, Eddy County, NM		5. Project Date(s) May 22, 1997
		6. Report Date - May 22, 1997
7. Consultant Name & Address: Direct Charge: David Wilcox Name: Desert West Archaeological Services Address: 102 N. Main, Carlsbad, NM 88220 Authors Name: David Wilcox field personnel names - James Hollen, Staff Archaeologist, Phone (505 887-7646)		8. Permit No. 123-2920-97-K
		9. Consultant Report No. DWAS 97-17 MY
10. Sponsor Name and Address: Indiv. Responsible: Arco-Permian Name: Bob Lange Address: P.O. Box 50203, Midland, TX. Phone: (915) 688-5762		11. For BLM Use only.
		12 ACREAGE: Total No. of acres surveyed 1.51 acres For Surface Ownership: Federal
<p>13. Location &amp; Area: (Maps Attached if negative survey)</p> <p>a. State - New Mexico</p> <p>b. County - Eddy</p> <p>c. BLM District: Roswell Resource Area: Carlsbad</p> <p>d. Nearest City or town: Carlsbad, NM</p> <p>e. Location: T23S, R31E, Section 13, NMPM, Eddy County, NM SE¼ NW¼ NE¼; NE¼ NW¼ NE¼;</p> <p>f. 7.5' Map Name(s) and Code Number(s): Bootleg Ridge, NM (1984)(32103-C6)</p> <p>g. Area Block Impact: N/A Surveyed: N/A Linear Impact: Unknown; within a 100' wide centerline staked corridor Surveyed: Access Road (100' X 850'; 1.95 acres)</p>		

**RECEIVED**  
MAY 22 1997  
BUREAU OF LAND MANAGEMENT  
CARLSBAD RESOURCE AREA



14. a. Records Search: BLM and ARMS prefield literature searches conducted by Chris Owens on May 15, 1997. These record searches revealed no previously recorded sites within a .25 mile radius of the project area.

Location: BLM and ARMS

Date: 5-15-1997

List by L.A# All sites within .25 miles of the project: N/A

(These sites within 500' are to be shown on the project map)

b. Description of undertaking:

Class III pedestrian survey

c. Environmental Setting (NRCS soil designation; vegetative community; etc.)

Vegetation -ohin oak, mesquite, yucca, sage, creosote, chinchweed, snakeweed, prickly pear, Mormon tea, sand burr, little-leaf horsebrush, devil claw, walking stick and pencil cholla, Russian thistle, abundant assorted grasses, wildflowers, forbs, and edaphic plants.

Topography -The proposed project area consists of low, moderate and high relief, stabilized to slightly active dunal plains, complexes, coalesced dunal basins and subsided dunal basins or catchments with mesquite stabilized dunal hummocks rising 1-1.5 meters above deflated surfaces and exposed Paleosol Horizons. Deflated surfaces contain abundant caliche gravel deposits as well as siliceous gravels of the Dockum Group.

Soils -range from mostly: Kermik-Berino Association: Sandy, deep soils from wind-worked mixed sand deposits, to Pyote-Majamar Association: gently undulating and rolling, deep, sandy soils, to some occurrence of Simone-Tonuco Association: nearly level and gently undulating, loamy and sandy soils that are shallow to indurated caliche.

d. Field Methods:

Transect Intervals: straight and zig-zag transects, spaced not greater than 15 meters apart.

Crew Size: 1 archaeologist

Time in Field: approximately 1 hour.

Collections: n/a

15. Cultural Resource Findings:

a. Identification and description: No cultural resources were encountered during the archaeological investigation.

16. Management Summary (Recommendations): Archaeological clearance for ARCO-PERMIAN'S proposed Access Road (100' X 850'; 1.85 acres) to connect the Barclay Federal Well No.s 2, 3, and 4, located within a 1,280 acre tract of land; is recommended as staked. If cultural resources are encountered during construction and development activities, the BLM and DWAS should be notified immediately. Final Archaeological clearance is granted by the BLM.

I confirm that the information provided above is correct and accurate and meets all appreciable BLM standards.

Responsible Archaeologist

*James R. Holter*

Signature

Date

5-22-97