

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN REPLICATION  
(Other instructions on  
reverse side)

Budget Bureau No. 42-B442

30-015-22812

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL  
WELL ☒

GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

Atlantic Richfield Company

3. ADDRESS OF OPERATOR

P. O. Box 1710, Hobbs, New Mexico 88240

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

At surface

1050' FNL & 100' FEL (Unit letter A)

At proposed prod. zone

as above

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

Approx 9 miles east of Artesia, New Mexico

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

16. NO. OF ACRES IN LEASE

19. PROPOSED DEPTH

6225'

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS

Rotary

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

3533.2' GR

22. APPROX. DATE WORK WILL START\*

2/1/79

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11"	8-5/8" OD	24# K-55	1000'	750 sx, circ to surf
7-7/8"	5-1/2" OD	15.5# K-55	6225'	1425 sx, circ to surf

Propose to drill a development well in the Empire Abo Pressure Maintenance Project to more economically recover remaining reserves.

Authority to drill above non-standard location by Approval of OGC Administrative Order NSL-999.

Blowout Preventer Program attached.

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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

*[Signature]*

TITLE

Dist. Drlg. Supt.

DATE

1/17/79

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

2-5-79

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side



NMOCC COPY

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GEOLOGICAL SURVEY  
P. O. Drawer U  
Artesia, New Mexico 88210

**FEB 6 1979**

**O. C. C.  
ARTESIA, OFFICE**

**FEB 13 1979**

Atlantic Richfield Company  
P. O. Box 1710  
Hobbs, New Mexico 88240

ATLANTIC RICHFIELD COMPANY Empire Abo Unit "M" Well No. 123 1050 FNL 100 FEL Sec. 10, T18S, R27E Eddy County Lease No. NM-025604
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Above Data Required on Well Sign
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Gentlemen:

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 6,225 feet to test the Abo formation is hereby approved subject to compliance with the OIL AND GAS OPERATIONS REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL LEASES, dated July 1, 1978.
2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the SURFACE USE PLAN and this approval including the GENERAL REQUIREMENTS.
3. Submit a Daily Report of Operations from spud date until the Well Completion report (form 9-330) is filed. The progress report should be not less than 8" x 5" in size and each page should identify the well.
4. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Requirements. The color used should simulate sandstone brown (Federal Standard Color #595A, color 20318 or 30318).

Sincerely yours,

(Orig. Sgd.) ALBERT R. STALL

Albert R. Stall  
Acting District Engineer

**N MEXICO OIL CONSERVATION COMMISS**  
**WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form O-102  
 Supersedes O-128  
 Effective 1-1-65

All distances must be from the outer boundaries of the Section

Owner <b>Atlantic Richfield Co.</b>			Lease <b>Empire Abo Unit M</b>		Well No. <b>123</b>
Section <b>A</b>	Range <b>10</b>	Township <b>18-S</b>	Range <b>27-E</b>	County <b>Eddy</b>	
Distance from the North line and 100 feet from the East line <b>1050</b> feet from the North line and <b>100</b> feet from the East line					
Surface Elev. <b>3533.2</b>	Producing Formation <b>Abo Reef</b>		Field <b>Empire Abo</b>		Dedicated Acreage <b>40</b>

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
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).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes    ☐ No    If answer is "yes," type of consolidation Unitization

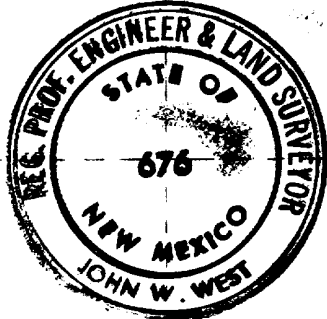
If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

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 interests, has been approved by the Commission.

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**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name *John W. West*  
 Position Dist. Drlg. Supt.  
 Company Atlantic Richfield Company  
 Date 1/17/79

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.

Date Surveyed October 31, 1978

Registered Professional Engineer and/or Land Surveyor

*John W. West*

Certificate No. John W. West 676  
Ronald J. Eidson 3239

330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

To supplement USGS Form 9-331C "Application for Permit to Drill, Deepen or Plugback", the following additional information is submitted to comply with USGS Order NTL-6.

Operator: Atlantic Richfield Company  
Lease & Well No: Empire Abo Unit "M" #123  
Location: Unit Letter A  
Section 10-18S-27E, Eddy County, N.M.  
Lease, New Mexico NM-025604  
Development well X Exploratory well \_\_\_\_\_

1. See Well Location and Acreage Dedication Plat Form C-102.
2. See Form 9-331C for elevation above sea level of unprepared location.
3. The geologic name of the surface formation is:  
Kimbrough Stegall association
4. The type of drilling tools and associated equipment to be utilized will be: Rotary.
5. The proposed drilling depth will be 6225'.
6. The estimated tops of important geologic markers are:  
Empire Yates 7Rivers Queen + 323'  
Artesia Queen Grayburg SA + 1793'  
Abo Reef + 5964'
7. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are:  
Santa Rosa Water Formation + 263'  
Empire Yates 7Rivers Queen + 323'  
Artesia Queen Grayburg SA + 1793'  
Abo Reef + 5964'
8. The proposed casing program including the size, grade and weight-per-foot of each string has been indicated on Form 9-331C. All strings of casing will be New X Used \_\_\_\_\_.
9. See Form 9-331C for amount of cmt.

The surface casing will be cemented to surface w/Cl H Reg-Fill cmt cont'g 2% CaCl followed by Cl C cmt cont'g 2% CaCl.

The production casing will be cemented in 2 stages using 20 BFW, 500 gals Chem-Wash, 10 BFW, 250 sx Lite wt cmt cont'g 10# 20/40 sd, 5# 100 mesh sd & 5# Gilsonite/sk for 1st stage. 2nd stage will be cmt'd w/10 BFW, 950 sx Lite cmt, 8# salt/sk & 100 sx Cl C cmt cont'g 8# salt/sk & circ to surface.

10. The pressure control diagram is attached to Form 331C. The following additional information of the pressure control equipment is as follows:  
8-5/8" OD Csg: Size: 10" 600 series  
Pressure Ratings: 3000# WP, 6000# T  
Testing Procedure: Pressure up to 1500# before drilling out of casing.  
Testing Frequency: Upon installation, daily and on all trips.

5-1/2" OD Csg: Size: 6" 900 series

Pressure Ratings: 3000# WP, 6000# T  
Testing Procedures: Pressure up to 1500# before drilling out of casing.  
Testing Frequency: Upon installation, daily and on all trips.

11. The type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling and the quantities and types of mud and weighting material to be maintained will be as follows:

0	-	1000'	Spud Mud
1000	-	5850'	Fresh brackish water
5850	-	6225'	Salt Gel mud, 8.8#/gal, 30,000-40,000 salinity, 10 WL.

12. The testing, logging and coring programs will be:

Drill Stem Test

Logs

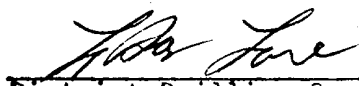
Coring

None

GR-DLL w/RXO  
GR-CNL-FDC

None

13. There are no abnormal pressures or temperatures expected to be encountered.
14. The anticipated starting date will be 2/1/79 and completed approx 2/20/79.
15. The auxiliary equipment to be used will consist of: Kelly cocks & a sub on floor w/full opening valve to be used when needed. No mud logging will be performed.

  
District Drilling Supt.

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U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

Atlantic Richfield Company  
Well No. "M" 123 - Empire Abo Unit  
Sec 10-18S-27E  
Sandoval County, New Mexico  
Artesia, New Mexico NM-025604  
Development Well

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operation so that a complete appraisal can be made of the environmental effects associated with the operation.

Existing Roads:

A. Exhibit "A" is a portion of a map with highways showing the location of the proposed well as staked. From Artesia go 9 mi east on U.S. Hwy 82, turn south off hwy 82 on AMOCO Gasoline Plant black top road 2.9 mi, continue south on existing caliche road .9 mi, turn west on existing road approx .1 mile, turn south to location, location staked, flagged & visible from road.

B. Exhibit "B" is a plat showing all existing roads within a one mile radius of the wellsite and the planned access road.

Planned Access Roads:

A. New road will be 12' wide and 120' long. This new road is labeled on Exhibit "B" color coded brown. The well location stake is flagged and visible from existing road.

B. Turnouts: None

C. Culverts: None

D. Cuts & fills: 1' fill on north, 1' cut on south side of well location.

E. Gates, Cattleguards:

Location of Existing wells:

A. Existing wells within a one mile radius are shown on Exhibit "B".

Location of Existing and/or Proposed Facilities:

A. Location of the existing tank battery and flowlines are shown on Exhibit "C". The gas injection and salt water disposal lines are buried. The flow lines are not buried.

**5. Location & Type of Water Supply:**

- A. Water for drilling will be used from a brackish water well within the Empire Abo Unit area located in Sec 6-18S-29E and transported by pipeline to wellsite. The water line will be temporary, will not cause surface damage and will be removed soon after drilling is completed.

**6. Source of Construction Materials:**

- A. Road and well pad construction materials will be furnished by a contractor. Any caliche permits or royalties to be paid will be responsibility of Contractor. Contractor source of caliche will be from an existing pit located in SE/4, NW/4 Sec 12-18S-27, Eddy County, N.M.

**7. Methods of Handling Waste Disposal:**

- A. Drill cuttings will be disposed of in the drilling pits.
- B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.
- C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.
- D. Current laws & regulations pertaining to the disposal of human waste will be complied with.
- E. Trash, waste paper, garbage and junk will be buried in a separate trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind. Location of trash pits is shown on Exhibit "D".
- F. All trash and debris will be buried or removed from the wellsite within 30 days after finishing drilling and/or completion operations.

**8. Ancillary Facilities: none**

**9. Wellsite Layout:**

- A. Exhibit "D" shows the relative location and dimensions of the well pad, mud pits, reserve pit, trash pit & location of major rig components.
- B. Only minor levelling of the wellsite will be required. No significant cuts will be necessary.
- C. The reserve pit will be plastic lined.
- D. The pad and pit area has been staked and flagged.

**10. Plans for Restoration of the Surface:**

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the wellsite in an aesthetically pleasing a condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. After abandonment of the well, surface restoration will be in accordance with the BLM and accomplished as expeditiously as possible.

**11. Other Information:**

- A. Topography: Land surface is rolling hills.
- B. Soil: Soil is a sandy clay loam and caliche.
- C. Flora & Fauna: The vegetative cover is generally cockle burs, needle grass, rag weeds, grease bush, cat claw, native grasses. The fauna consists of coyotes, jack rabbits, cotton tails, skunks, rattlesnakes, rodents, hawks, quail, dove and song birds.
- D. Ponds & Streams: None
- E. Residences and other structures: None
- F. Land Use: Grazing and hunting in season. Oil & gas production
- G. Surface Ownership: Wellsite is on BLM surface.

**12. Operator's Representative:**

The field representative responsible for assuring compliance with the approved surface use and operations plan are as follows:

Name: LeRoy D. Lane  
Address: Box 1710, Hobbs, New Mexico 88240  
  
Office Phone: (505) 393-7163  
Home Phone: (505) 393-7972



**13. Certification:**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which 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 Atlantic Richfield Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

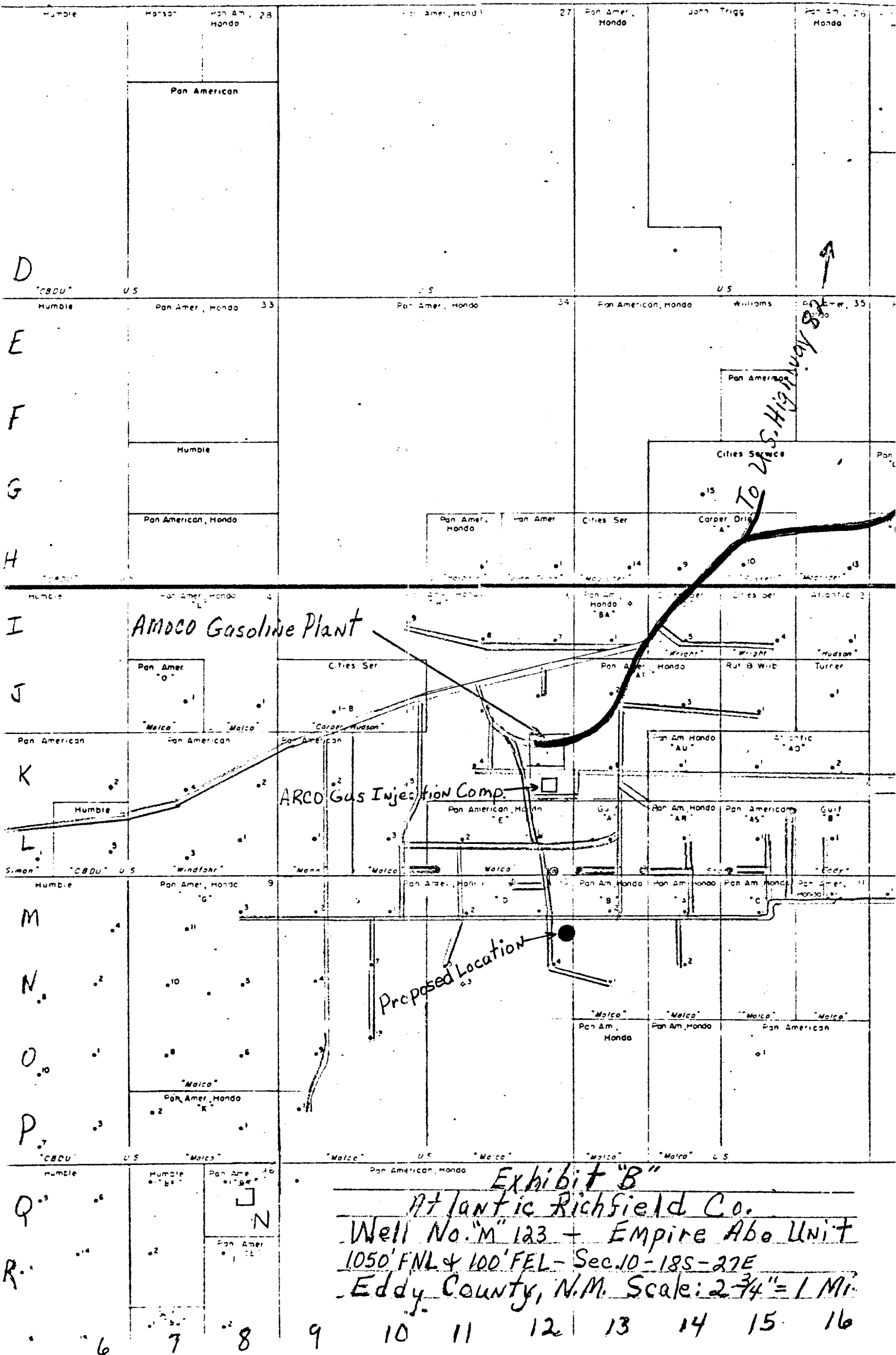
1-18-79

Date

*F. B. [unclear]*

District Drilling Supt.

R 27 E



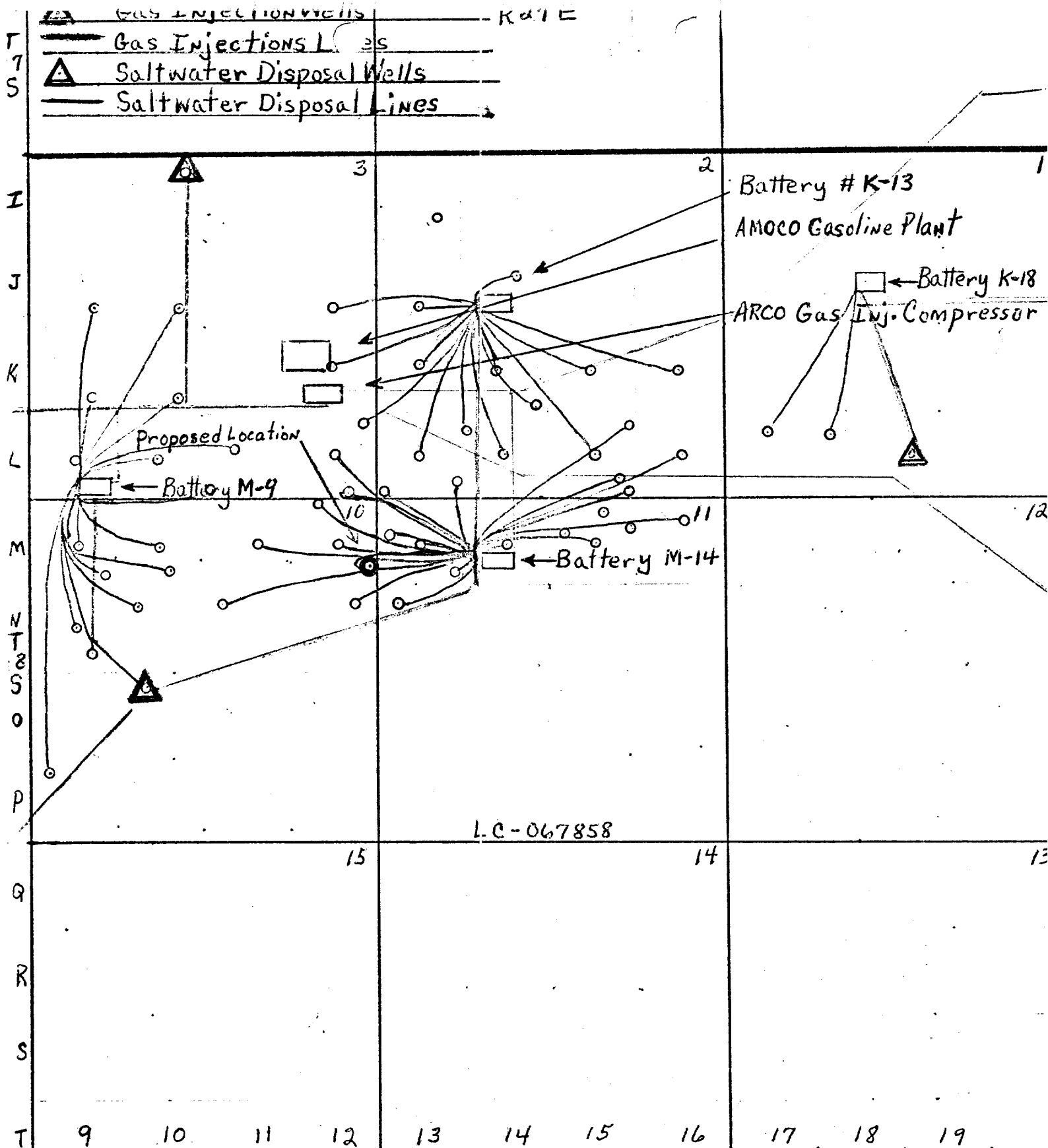
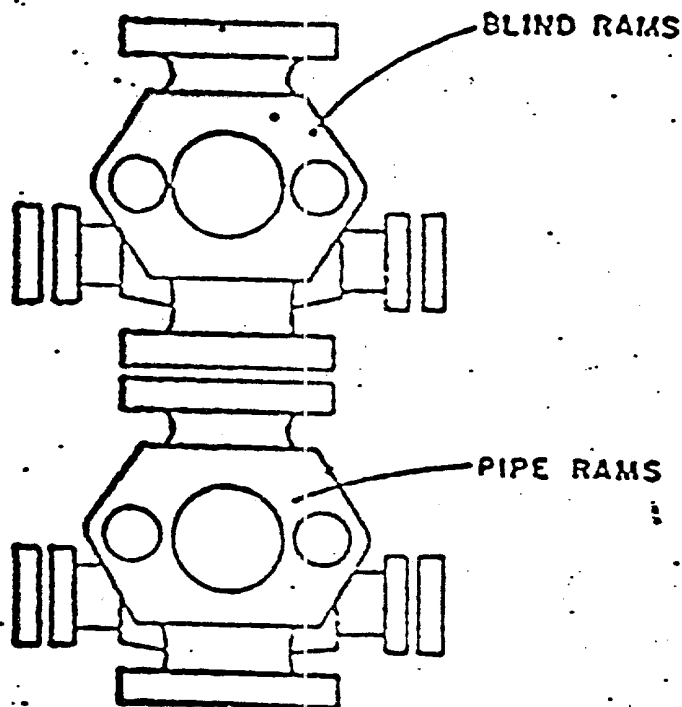


Exhibit "C"

Atlantic Richfield Company  
 Well No. "M" 123 - Empire Abo Unit  
 1050' FNL & 100' FEL Sec. 10-18S-27E  
 Eddy Co., New Mexico - Scale 2-3/4" = 1 Mile

[illegible]



ATLANTIC RICHFIELD COMPANY  
Blow Out Preventer Program

Lease Name Empire Abo Unit "M"

Well No. 123

Location 1050' FNL & 100' FEL  
Sec 10-18S-27E, Eddy County

BOP to be tested before installed on well and will be maintained in good working condition during drilling. All wellhead fittings to be of sufficient pressure to operate in a safe manner.