

Form 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

5. Lease Designation and Serial No.

FED NM 0472258 22207

6. If Indian, Allottee or Tribe Name

NA

SUBMIT IN TRIPLICATE

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other Gas Storage

2. Name of Operator

El Paso Natural Gas Co., (J.W.Mulloy Assoc, Inc. - Agent)

3. Address and Telephone No.

1110 N. Big Spring St., Midland, Tx 79701 (915-687-0323)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1980' FNL & 1980' FEL Unit G

Sec 27 T-25-S R-24-E

7. If Unit or CA, Agreement Designation

Washington Ranch  
Storage Area

8. Well Name and No.

O Federal No. 2

9. API Well No.

30-015-20635

10. Field and Pool, or Exploratory Area

Washington Ranch Mor

11. County or Parish, State

Eddy, NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

- ☒ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other

- ☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

SEE ATTACHED

RECEIVED  
Aug 2 12 16 PM '95  
CARTER  
ARLH

14. I hereby certify that the foregoing is true and correct

Signed

J.W. Mulloy

Title Agent

Date 7-20-95

(This space for Federal or State office use)

Approved by Shannon J. Shaw

Title

PETROLEUM ENGINEER

Date 8/29/95

Conditions of approval, if any:

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.

\*See Instruction on Reverse Side

July 31, 1995

El Paso Natural Gas Co.  
Recommended Plugging Procedure  
Federal "O" Well #2  
Washington Ranch Gas Storage Area  
Eddy Co, New Mexico

The well was originally drilled as the Government "M" Well No 2 by Cities Oil Company and completed as a gas well June 2, 1972. The well later became the property of El Paso Natural Gas Company and since that time has been utilized as an observation well for their Washington Ranch Gas Storage Project.

The attached Schematic (Fig #1) shows the condition of the well during the period of time it was used as an observation well and at the time the recent work-over commenced. The attached daily report is a detailed account of the effort made to recover the fish in this well and to repair the casing failure. Also included is an estimated accumulative cost of the operation.

A review of Fig #1 indicates that the casing had failed prior to commencement of their work-over, but the 2 7/8" tubing was intact. This is evidenced by the report of 3-31-95 because when the tubing was pressured to 1400 psi and there was no evidence of communication with the annulus.

The proposed plugging procedure is as follows and is illustrated on the included schematics:

1. Run 2 7/8" tubing to  $\pm$  1500'.
2. Pump 200 sx slurry of designed cement. Close in and monitor the 8 5/8" - 5 1/2" and 5 1/2" - 2 7/8" annulus.
3. Pull 2 7/8" tbg up to  $\pm$  800' and then run back to original depth, allowing time for slurry to thicken.
4. Pump 100 sx slurry of designed cement. Close in and monitor 8 5/8" - 5 1/2" and 5 1/2" - 2 3/8" annulus. Pull 2 7/8" tubing up to  $\pm$  800' then run to original depth, allowing time for slurry to thicken. Continue this operation as many times as necessary until a squeeze pressure is obtained.  
( As pumping continues the separate zones will be filled with cement and will be squeezed. This operation is shown in the schematics Fig #2 thru #5. )

5. Spot 100 sx cement plug @  $\pm$  1644', or as deep as possible.
6. POH w/2 7/8" tbg.
7. Run log to determine the cement top behind the 5 1/2" casing.
8. Perforate 5 1/2" casing just above the cement top.
9. Break circulation to surface and circulate cement to surface.
10. Close 8 5/8" - 5 1/2" annulus and pressure to  $\pm$  500 psi. Release pressure & spot 100' plug in 5 1/2" casing just
- \* above squeeze perforations.
11. Set surface plug, install marker and clear location.

(The schematic in Fig #6 illustrates the condition of the bore hole after final plugging operations. The schematic shown in Fig #7 shows the theoretical conditions that would exist if the well had been abandoned in to normal manner. The recommended procedure is an improvement because individual zones are actually squeezed off and not simply separated by plugs.)

J.W. MULLOY ASSOCIATES, INC.

Johnny Mulloy

JWM/bh

→ \*NOTE: Sufficient cement must be used to provide 100' cmt. plug across 8 5/8" csg shoe in 8 5/8" x 5 1/2" annulus and inside of 5 1/2" csg, or a separate plug should be placed across the 8 5/8" csg. shoe. In either case, this plug must be tagged to verify its position.

SJS

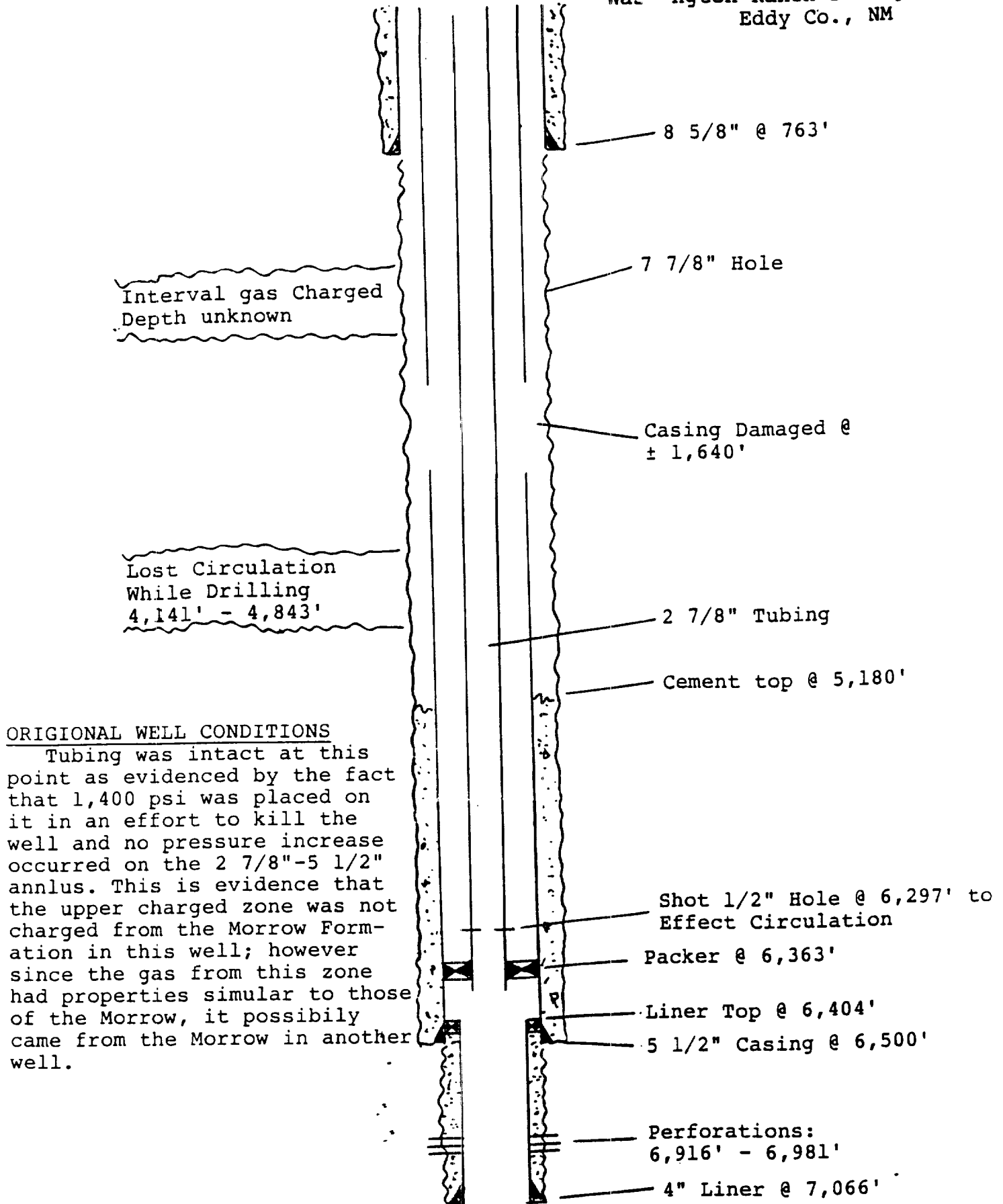


FIGURE #1. Well conditions on March 3, 1995, when workover commenced.

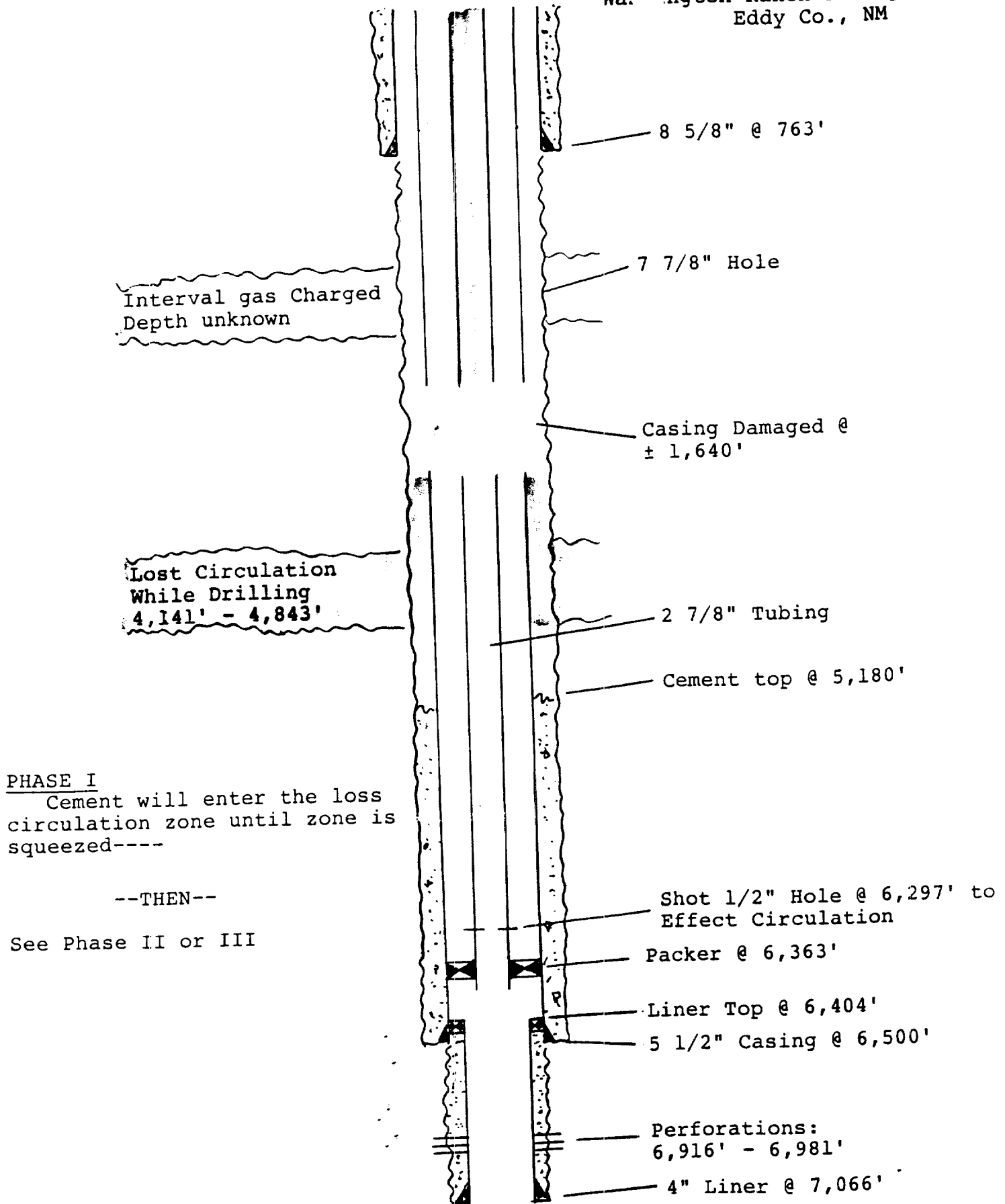


FIGURE #2. Well conditions when loss circulation  
zone is squeezed.

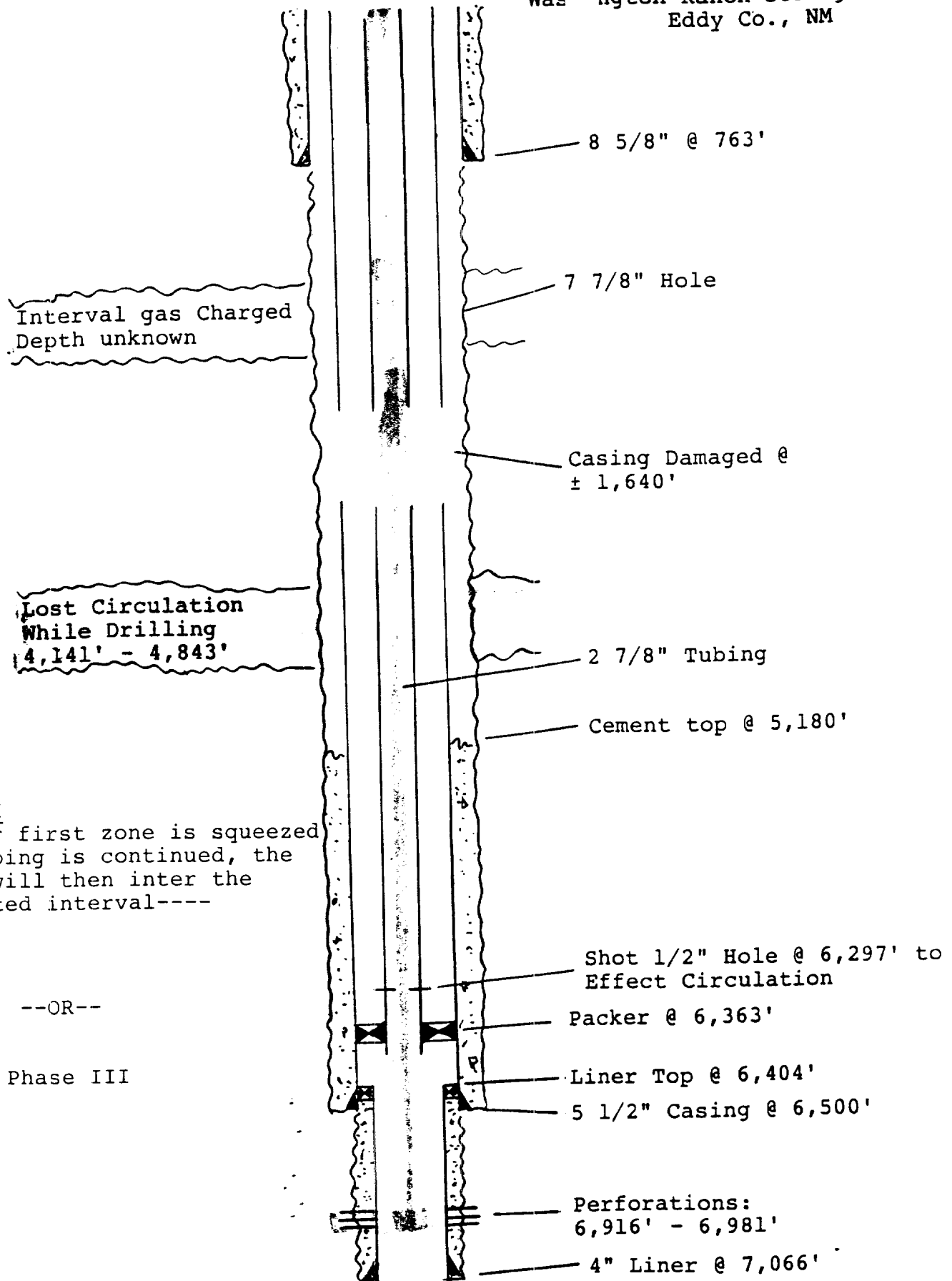


FIGURE #3. Well conditions w/initial zone squeezed and perforations squeezed.

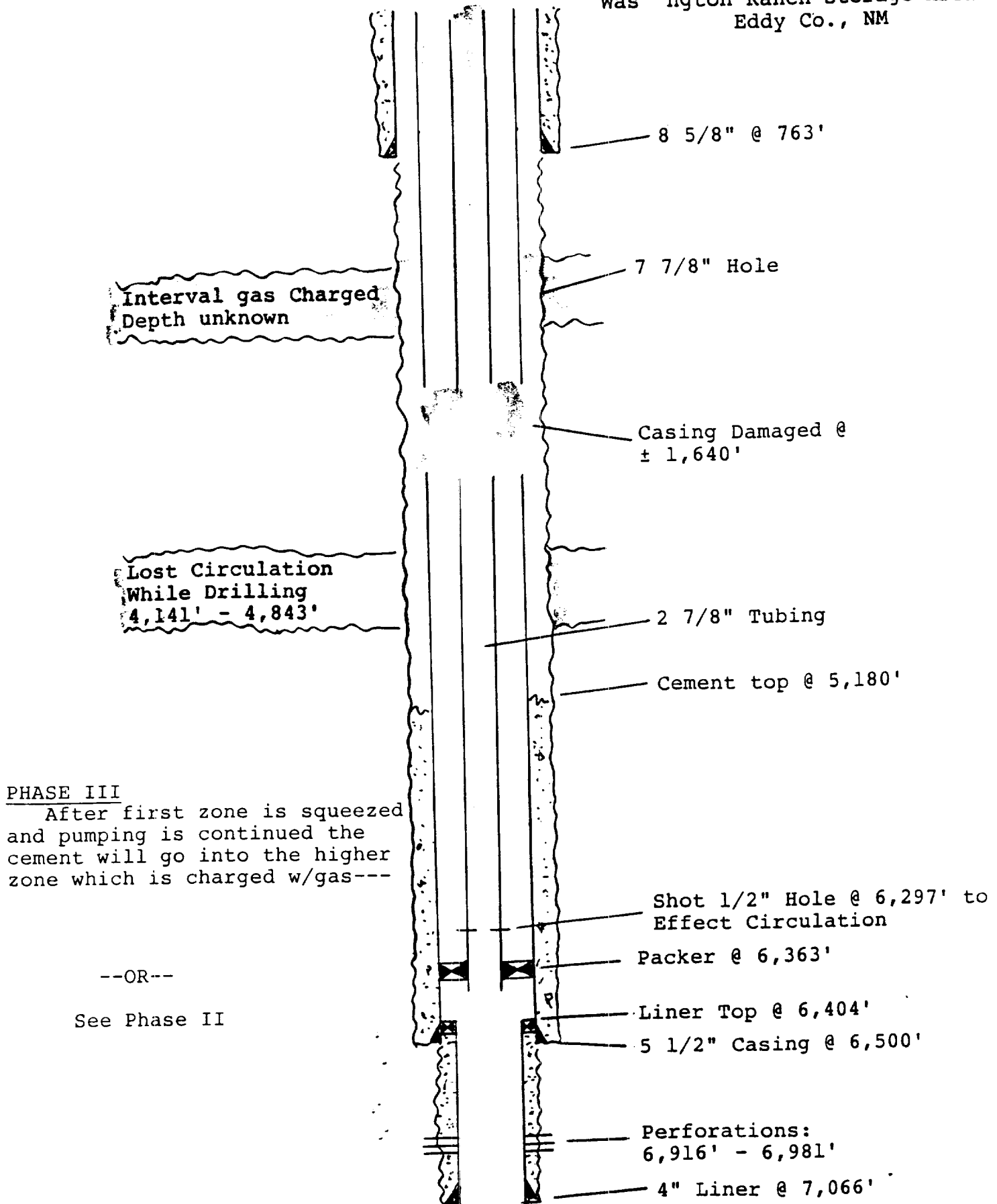
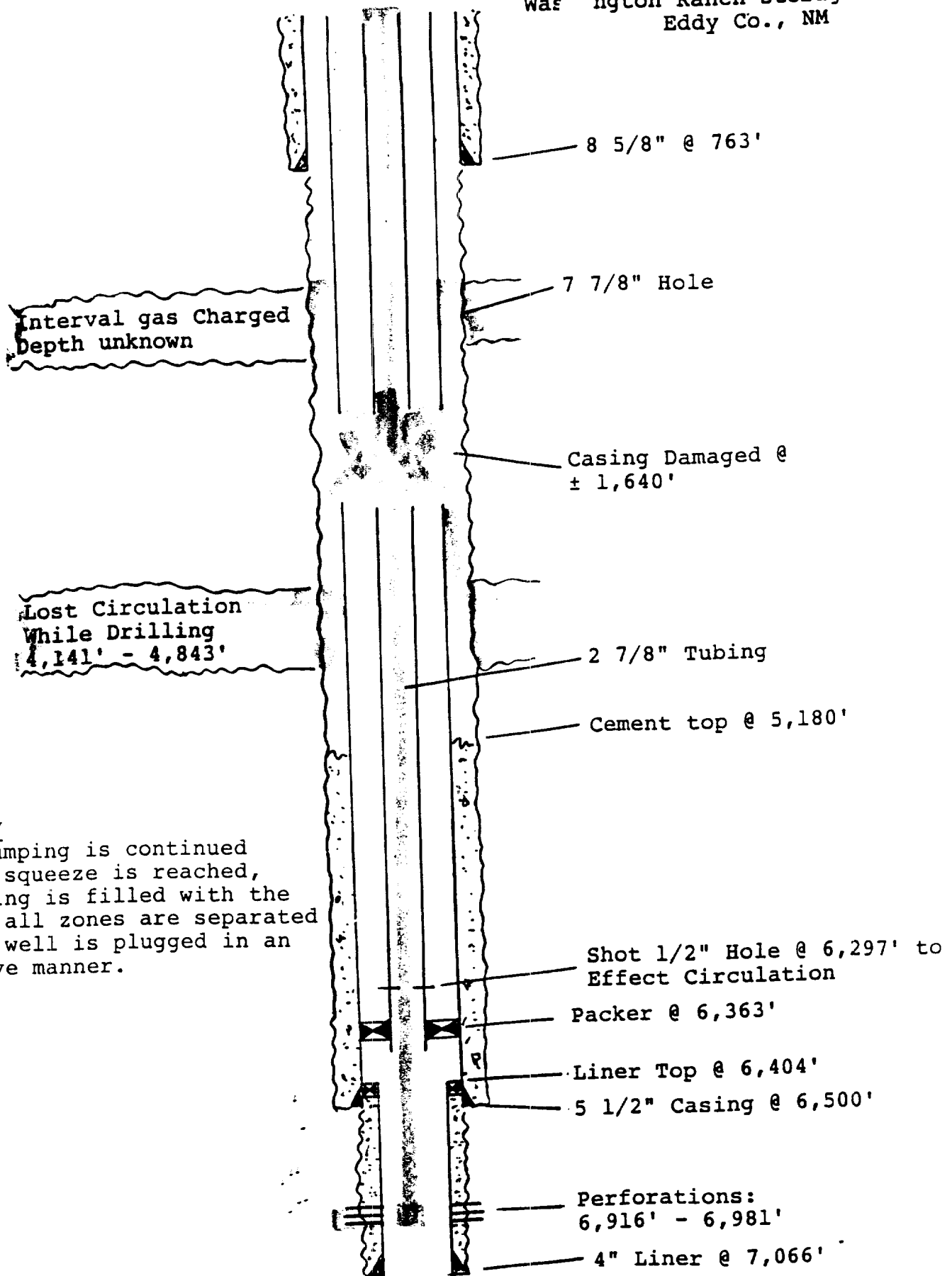


FIGURE #4. Well conditions w/initial zone and charged zone squeezed.



#### PHASE IV

If pumping is continued until a squeeze is reached, everything is filled with the cement, all zones are separated and the well is plugged in an effective manner.

FIGURE #5. Well conditions w/all zones squeezed.



Surface plug

100' Plug

Interval gas Charged  
Depth unknown

100' Plug

Lost Circulation  
While Drilling  
4,141' - 4,843'

PHASE V

Final well conditions after  
all zones squeezed and upper  
section of hole plugged in a  
conventional manner.

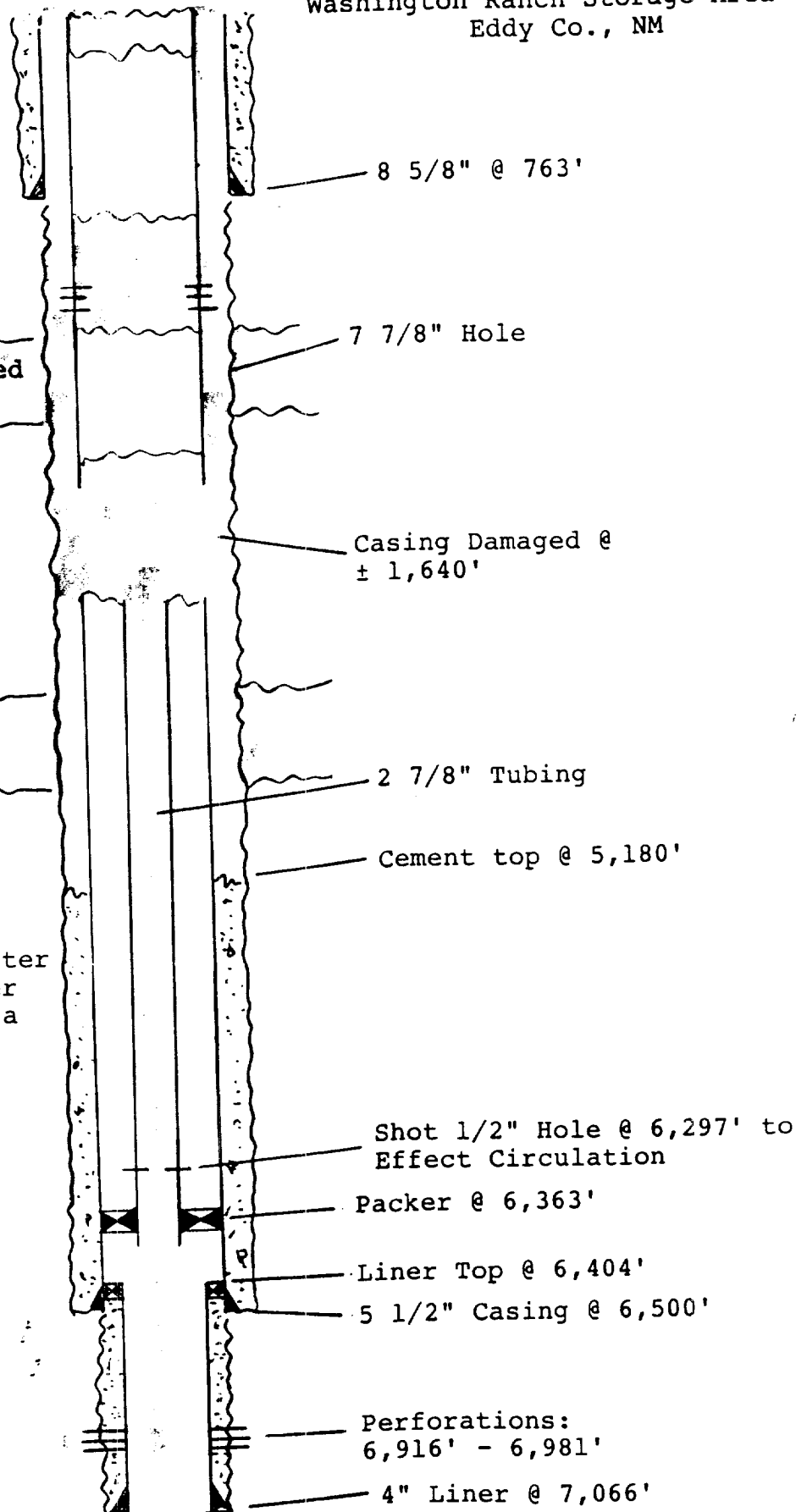


FIGURE #6. Well conditions after complete plugging operation.

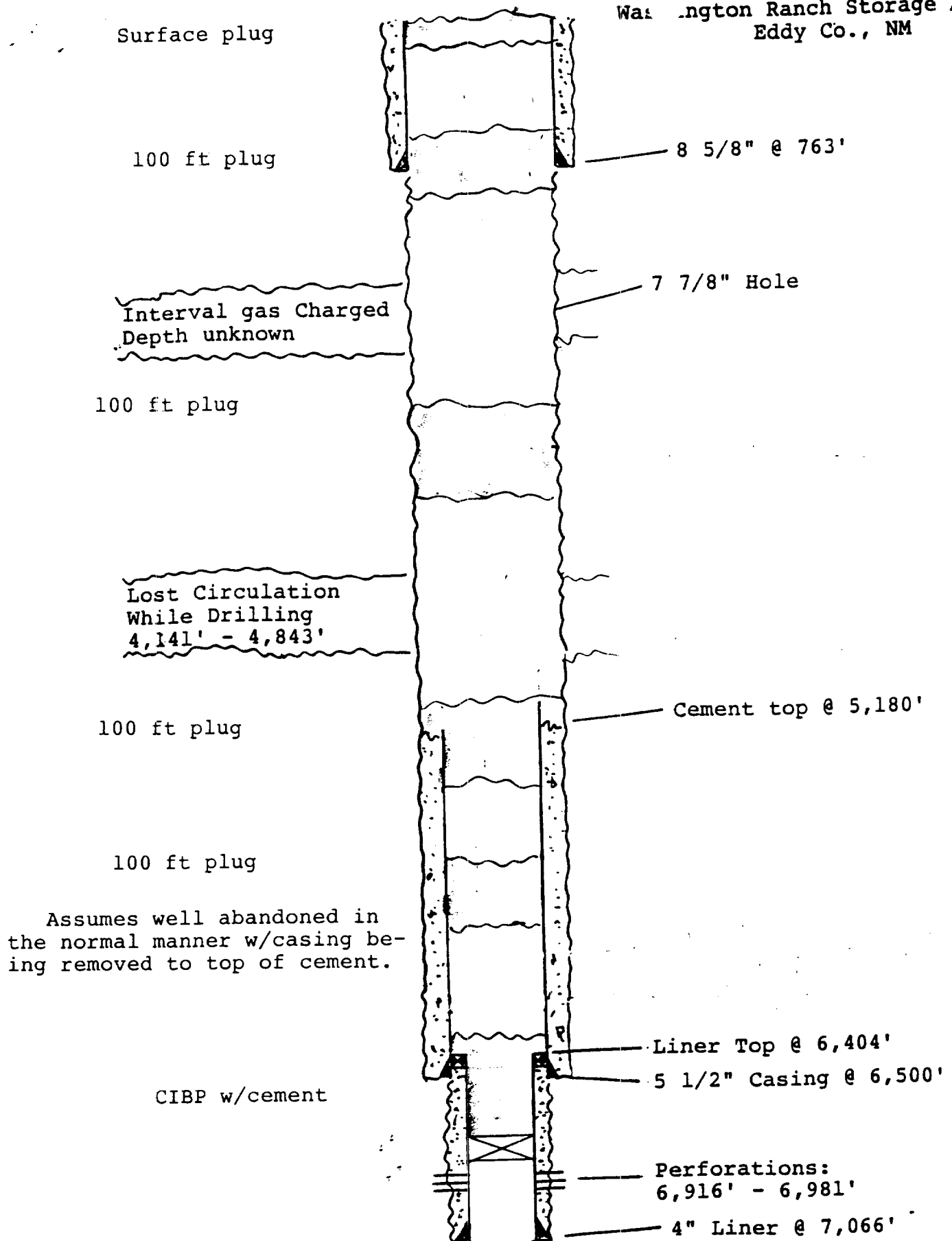


FIGURE #7. Theoretical well conditions if plugged  
in conventional manner.