STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		✓
FILE		✓
U.S.G.S.		
LAND OFFICE		
OPERATOR		

OIL CONSERVATION DIVIS... I

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-7

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No. B-2071

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [X] GAS WELL [ ] OTHER-

RECEIVED BY
JUN 17 1987
O. C. D.
ARTESIA, OFFICE

7. Unit Agreement Name

2. Name of Operator: ARCO Oil and Gas Company

8. Farm or Lease Name: Empire Abo Unit "H"

3. Address of Operator: P.O. Box 1610, Midland, Texas 79702

9. Well No. 23

4. Location of Well: UNIT LETTER 0, 660 FEET FROM THE South LINE AND 1938.57 FEET FROM THE East LINE, SECTION 31 TOWNSHIP 17S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Empire Abo

15. Elevation (Show whether DF, RT, GR, etc.) 3695 KB

12. County: Eddy

16. **Check Appropriate Box To Indicate Nature of Notice, Report or Other Data**

NOTICE OF INTENTION TO:

- PERFORM REMEDIAL WORK [X]
- TEMPORARILY ABANDON [ ]
- PULL OR ALTER CASING [ ]
- PLUG AND ABANDON [ ]
- CHANGE PLANS [ ]
- OTHER [ ]

SUBSEQUENT REPORT OF:

- REMEDIAL WORK [ ]
- COMMENCE DRILLING OPNS. [ ]
- CASING TEST AND CEMENT JOB [ ]
- ALTERING CASING [ ]
- PLUG AND ABANDONMENT [ ]
- OTHER [ ]

17. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

Propose to repair casing leak as follows:

1. Press test 2-3/8 x 5-1/2 annulus to 500#.
2. POH w/CA.
3. Run CBL.
4. Set RBP.
5. Perf 5-1/2 casing.
6. Set CR above perfs and est PIR.
7. Circ cmt to surf via 5-1/2 x 8-5/8 annulus.
8. DO CR & cmt. Press test to 500#.
9. Retr RBP.
10. RIH w/CA.
11. Return to production.

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

SIGNED Ken W Gosnell TITLE Engr. Tech. 915-688-5672 DATE 6-12-87

APPROVED BY Mike Williams TITLE OIL AND GAS INSPECTOR DATE JUN 19 1987

CONDITIONS OF APPROVAL, IF ANY:

... time to witness Remedial Work

WORKOVER PROCEDURE

DATE: April 22, 1987

WELL NO. & TYPE OF JOB: Empire Abo Unit #H-23 - Repair Surface Csg Leak

DRILLED & COMPLETED: 1960 LAST WO: 1985

FIELD: Empire Abo COUNTY: Eddy PREPARED BY: J. D. Swanson

TD: 6,093' PBD: 6,076' DATUM: _____ DIST RKB TO THF: NA

TUBINGHEAD: MAKE unknown SIZE NA PRESSURE RATING NA

CASING INFORMATION:	SIZE	WEIGHT	GRADE	SET @	SX CMT	TOC
SURFACE:	8-5/8"	22.7#	J-55	1200'	550	surface
INTERMEDIATE:						
PRODUCTION:	5-1/2"	14#	J-55	6093'	750	2700'(calc)*

*assuming 1.5 ft3/sx yield, 9" hole, and 20% excess

LINER: SIZE_____ WEIGHT_____ GRADE_____ TOP_____ BOTTOM_____ TOC_____

PRESENT PERFORATIONS & FORMATION: _____

Abo Perforations - 5910'-5960' & 6023'-6060' @ 2SPF

TUBING DATA: SIZE 2-3/8" WT. 4.7# GRADE J-55 THD. 8rd BTMD @ 5809'
NO. OF JTS. 189 MISC. see attached wellbore schematic

PACKER & MISC.: Baker R-3 "Lok-Set" packer set at 5809' GL

WELL HISTORY

The subject well was drilled and completed in 1960 by Pan Am Petroleum Corporation. The Abo formation was perforated (5910'-5960' and 6023'-6060' @ 2SPF) and produced. In 1973, ARCO took over operatorship of the subject well. A workover was performed in 1985 and the current completion assembly (see attached wellbore schematic) was run in the hole. In December of 1986, the 8-5/8" surface casing had 150 psi surface pressure. An attempt was made to bleed off this pressure, however after bleeding back approximately 2 bbls of fluid, the annulus still had a slight blow. It is expected that this pressure is caused by the San Andres or Greyburg formation at ±1400'-1800'. Current production is approximately 18 BOPD with 615 MCFPD. The purpose of this procedure is to repair the surface casing leak and put the well back on production.

PROCEDURE

1. Prior to moving in CU, bleed off 8-5/8" x 5-1/2" annulus into frac tank. Leave annulus open overnight to ensure annulus is dead prior to commencing workover operations.

2. MI & RU CU. Pressure test 2-3/8" x 5-1/2" annulus to 500 psi. Pump 9.0 ppg BW down tubing and kill well.

2. ND Tubinghead. NU BOPE.

   NOTE: If 5-1/2" x 2-3/8" annulus does not test, a RBP and Packer will be utilized to isolate the 5-1/2" casing leak(s). An alternate procedure will then be supplied to complete the well repair.

3. TOH with 2-3/8" tubing and packer.

4. RU and run CBL/VDL/CCL/GR from ±3500' to ±500' above the TOC to identify a clean section of free pipe to perforate (see step 5 of this procedure). Set RBP on WL ±100' below the proposed perforation depth (see step 5 of this procedure). Pressure test RBP to 500 psi. Dump ±2 sxs sand on top of RBP.

5. Bleed off 8-5/8" x 5-1/2" annulus if required. Perforate 5-1/2" casing at the lowest clean section of free pipe as determined from the CBL with a 3-1/8" casing gun (2' @ 4SPF). RD wireline company.

6. PU Guiberson Retrievable Cement Retainer on 2-3/8" tubing and TIH to ±200' above the 2' of perforations. Set cement retainer and pressure test tubing to 3000 psi. Establish circulation up 5-1/2" x 8-5/8" annulus.

7. RU and circulate Class "H" cement with 2% CaCl2 up 8-5/8" x 5-1/2" annulus (estimated volume requirement - 600 sxs mixed at 16.0 ppg, yield 1.11 ft^3/sx to fill annulus from 2500' to surface). Displace cement to ±150' above perforations with 9.0 ppg BW. Maintain 500 psi on tubing-casing annulus throughout job. SI backside. PU, open by-pass, and reverse circulate tubing volume. WOC minimum of 6 hours. TOH with tubing and retainer.

8. PU 4-3/4" bit and 4-3" DCs and TIH to TOC. Drill out cement. Pressure test to 500 psi. If casing holds, TIH and wash sand off RBP. Circulate hole clean. TOH and LD DCs.

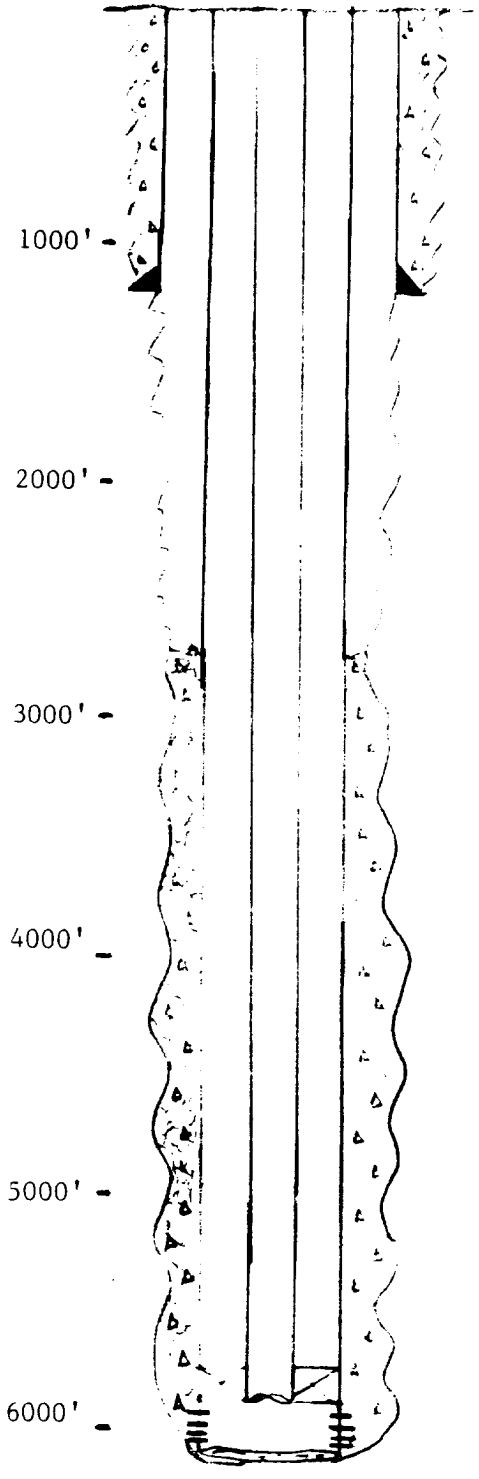
9. RIH with retrieving head on 2-3/8" tubing and retrieve RBP.

10. PU and RIH with completion assembly (NOTE: consult production department to insure they want the same completion assembly in the hole). Circulate annulus with 9.0 ppg BW with 10 gals/100 bbls Chemlink C-193 corrosion inhibitor. Set packer and test backside to 500 psi.

11. ND BOPE. NU Tree. Kick well off. TOTPS.

General Purpose Worksheet

Subject	Empire Abo Unit Well No. H-23	Page No.	Of
File	Current Wellbore Schematic	By J.D. Swanson	Date 4-21-87



Well Location: 660' FSL & 1939' FEL
Section 31-T17S-R28E
Eddy County, New Mexico

8-5/8", 22.7# Surface Casing set at 1200'
Cemented to Surface with 550 sxs Cement

Current Completion Assembly
189 jts 2-3/8", 4.7#, J-55, EUE-8rd tubing
2-3/8" SN
2-3/8" Baker R-3 "Lok-Set" Packer set at 5809' (from GL) with 19,000# compression

Production Tubular Properties

	5-1/2" Casing *	2-3/8" Tubing **
I.D. (in.)	5.012	1.995
Drift (in.)	4.887	1.901
Burst Rating (psi)	4270	8100
Collapse Rating (psi)	3120	7700
Capacity (bbl/ft)	0.02441	0.00387
Displacement (bbl/ft)	NA	0.00167

*Note: 5-1/2" Production Casing was tested to 500 psi in 1985.

**Note: 2-3/8" Tubing was internally pressure tested to 4000 psi on last TIH in November, 1985.

Abo Perforations 5910-5960' and 6023-6060' at 2 SPF
PBD at 6076'.
5-1/2", 14#, J-55, LTC Production casing set at 6093'
Cemented with 750 sxs, estimated TOC @ 2700'