CHANGE ZONES ABANDON\*

(other) Stimulate

14-20-603-2037 6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Upper Gallup Sand

5. LEASE

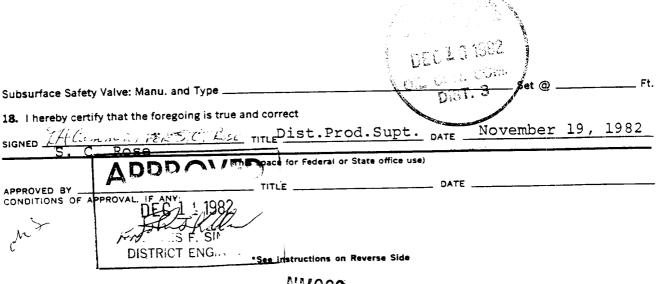
UNITE	DS	HAIL	.5
DEPARTMENT	OF	THE	INTERIOR
GEOLOGI	CAL	SUF	RVEY

GEOEDGICAE SORVE	Navajo			
SUNDRY NOTICES AND REPORTS ON WELLS	7. UNIT AGREEMENT NAME Horseshoe Gallup Unit			
Do not use this form for proposals to drill or to deepen or plug back to a different eservoir. Use Form 9-331-C for such proposals.)	8. FARM OR LEASE NAME Horseshoe Gallup Unit			
1. oil gas cother gas well other	9. WELL NO. 288			
2. NAME OF OPERATOR ARCO Oil and Gas Co., Div. of Atlantic Richfield Company	10. FIELD OR WILDCAT NAME Horseshoe Gallup			
3. ADDRESS OF OPERATOR 707 - 17th Street, P.O. Box 5540, Denver, Colo. 80217	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA			
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) Unit "A", AT SURFACE: (NE NE) 200' FNL & 200' FEL,	Sec. 25-31N-17W  12. COUNTY OR PARISH: 13. STATE  San Juan New Mexico  14. API NO.			
AT TOP PROD. INTERVAL: Appx. same Sec. 25 AT TOTAL DEPTH: Appx. same				
16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA	30-045-21924  15. ELEVATIONS (SHOW DF, KDB, AND WD)  15. US\$ 490.00Ril SURVEY			
REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF RECEIVE	OIL AND GAS OPERATIONS RECEIVED			
SHOOT OR ACIDIZE  REPAIR WELL  PULL OR ALTER CASING   TO THE TOTAL	(NOTE: deport results of multiple completion or zone change on Form 9-330.)			
MULTIPLE COMPLETE U. S. GEOLOGICAL U. S. GEOLOGICAL CHANGE ZONES	A. W GRAND JUNCTION COLUMNO			

17. 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.)\* ARCO Oil and Gas Co. desires to re-perforate and acidize the Lower Gallup perforations in the subject well; and attempt additional

completion by perforating and fracing the Upper Gallup Sand. Attached is the planned Workover Procedure and a GR-Compensated Formation Density Log, showing the proposed re-perforations in the Lower Gallup and the proposed perforations in the Upper Gallup Sand.

present Lower Gallup perfs and additionally complete



# Workover Procedure:

- MIRU. Pull rods, pump and tbg. Note if scale is present. Clean out hole to PBTD w/casing scraper.
- 2. RIH w/casing perforating gun and perf opposite Lower Gallup f/1532-42' ELM w/2 0.5" JET SPF (20 shots) Use premium quality deep penetrating charges.
- 3. If moderate scale is noted, run tbg and spot 500 gal 15% HCl. POH w/tbg. Displace acid into perfs. Do not overdisplace. Acid to contain surfactant and iron sequestering agent. If scale does not seem to be a problem proceed to Step 5.
- 4. Wait one hour, then swab acid back.
- 5. Mix 1 drum of S-271 scale inhibitor with 40 bbls of water and displace into perforations 1520-42' w/125 bbls of water.
- 6. Set retrievable bridge plug @ ± 1460' w/wireline. Pressure test plug and csg to 2000 psi.
- 7. RIH w/csg perforating gun and perf opposite Upper Gallup f/1410-32' w/2 0.5" Jet SPF (44 shots).
- 8. RIH w/tbg and spot 500 gal 15% HCl. Acid to contain surfactant. Pull tbg and rig up to frac down 5-1/2 csg.
- 9. Breakdown Upper Gallup formation with 1000-2000 gallons of pre-pad of slickwater, establishing a rate of 20 BPM. Shut-down for 2-minutes to obtain ISIP.
- 10. Frac down 5-1/2" casing at 20 BPM at approximately 1000 psi using 8000 gal low-residue cross-linked 20#/1000 gal gel and 21,200 pounds 10/20 sand. Frac fluid to contain 2% KCl, 2 gal/1000 gal non-emulsifier, and appropriate breakers.

### Remarks:

- a. Internal yield for 5-1/2" 14# J-55 csg is 4270 psig and capacity is 1.025 gal/ft.
- b. Bacteriacide to be added to tank water at .25 gal/1000 gal prior to treatment.
- c. HHP = .0245x1000x20=490.
- d. Service Company to test fluid gelling and gel breaker agents prior to treatment.
- e. Do not overflush

#### Fluid Schedule

Gals	Bbls	Prop	Prop Conc	Prop Wt.	Fluid
2,000	48	Pad		,	Low Residue Cross Linked Gel
700 800 900 1,800 1,800	17 19 21 43 43	10/20 10/20 10/20 10/20 10/20	1 ppg 2 ppg 3 ppg 4 ppg 5 ppg	700# 1600# 2700# 7200# 9000#	" " " " " " " " " " " " " " " " " " " "
$\frac{1,275}{9,275}$	2 <del>3 0</del> 2 <del>6 8</del>	Flush		21,200#	2% KCl Water

- 11. Allow sufficient time for gel to break. Clean out sand to bridge plug.
- 12. Retrieve bridge plug.
- 13. Run pumping equipment, put well on test. (Upper and Lower Gallup commingled production).

## Well Data:

Location: 200' FNL, 200' FEL, Section 25-31N-17W

San Juan County, New Mexico

Elevation: GL-5749' KB-5759'

Log measured from KB

Casing: 5-1/2" 14# K-55 set @ 1608' KB, cemented w/150

sx BJ-lite and 75 sx CL 'B'

Perfs: 1520-32' ELM(Lower Gallup)

Tubing: 1 Jt 2-7/8" EUE 8rd 6.5# J-55 14.00
1 SN 2-7/8" EUE 8rd J-55 1.10
47 Jts 2-7/8" EUE 8rd 6.5# J-55 1468.90
1 Jt Sub 2-7/8" EUE 8rd J-55 4.00
1488.00

RKB to tbg head collar  $\frac{9.00}{1497.00}$ 

TD: 1608'

PBTD: 1566'

