COPY TO (

Budget Bureau 42-R358.2.
Approval expires 12-31-52.

Form 9-331a
(Feb. 1951)

APPROVED
JAN 9 195
DISTRICT ENGINEER

Land Office Las Cruces
Lease No. 028793 (a)
Unit Burch "A"

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NOTED
JAN 9 1952
KNAUF

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			
Notice of Intention to Reconvert Gas Injection Well to Producing Well			X

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Loco Hills, New Mexico, December 31, 1951

Well No. 14-A is located 660 ft. from ~~N~~ [✓ S] line and 1980 ft. from [✓ E] ~~W~~ line of sec. 18

SW¼ SE¼ Sec. 18 (¼ Sec. and Sec. No.) — 17-S (Twp.) — 30-E (Range) — NMPM (Meridian)

Grayburg-Jackson (Field) — Eddy (County or Subdivision) — New Mexico (State or Territory)

The elevation of the derrick floor above sea level is .... ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

On February 28, 1951, with the prior approval of the District Engineer's Office, Burch No. 14-A was converted from a producing well to a gas injection well.

About July 1, 1951, after injecting a total of 39,409 MCF of gas into Burch No. 14-A over a period of four months, Burch No. 7-A, a direct south offset, showed definite indications of gas channeling as shown by the following observations.

1. Formation gas produced from Burch No. 7-A increased from 56 MCF per day as measured on December 4, 1950, prior to commencing injection, to an average of 353 MCF per day during a three day test on July 11, 12 and 13, 1951.

(Continued on Sheet -2-)

U. S. GEOLOGICAL SURVEY
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ARTESIA, NEW MEXICO

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company GENERAL AMERICAN OIL COMPANY OF TEXAS

Address Box 416, Loco Hills, New Mexico

By R J Heard
R. J. Heard,
Title Field Superintendent

(Gas Channeling Observations, continued)

2. Burch No. 7-A, which had been producing on gas-lift, started flowing naturally some four months after commencing injection.
3. Production decline rate for Burch No. 7-A increased from a rate of 2½% per month for the period June, 1950, to December, 1950, to 4% per month for the period December, 1950, to July, 1951.

Subsequent tests conclusively proved that gas was channeling from Burch No. 14-A injection well to Burch No. 7-A. These were as follows:

1. Burch No. 14-A was temporarily shut in for fourteen days from July 17 to 31, 1951, during which time produced formation gas from Burch No. 7-A gradually decreased from 359 MCF per day to 307 MCF per day.
2. Upon recommencing gas injection at a reduced rate in Burch No. 14-A, produced formation gas volumes from Burch No. 7-A gradually increased to 331 MCF average per day for the first nine days of September, 1951.
3. On November 14, 1951, Burch No. 14-A was once again shut in and on November 19, 1951, well was started blowing down to atmosphere. On December 12, 1951, after 2,372 MCF of gas had been blown back out of Burch No. 14-A, Burch No. 7-A ceased to flow naturally.

In an effort to decrease this channeling and its apparent adverse effects upon the production rate of Burch No. 7-A, the following steps were undertaken.

1. Injection rates were cut as much as 50% in Burch No. 14-A. RESULT: The slight decrease in channeled gas to Burch No. 7-A as noted above.
2. On August 6, 1951, 5 barrels of fresh water were pumped into Burch No. 14-A. RESULT: None noted.
3. On September 3, 1951, 18 barrels of fresh water were pumped into Burch No. 14-A. RESULTS: None noted.

To date a total of 76,770 MCF of residue gas has been returned to the Grayburg-Jackson reservoir through Burch No. 14-A well.

From the foregoing it would appear that permeabilities in at least this portion of the reservoir are very erratic and are, thus, certainly not conducive to successful repressuring due to the difficulty in controlling gas channeling. For this reson it is proposed that the use of Burch No. 14-A as an injection well be discontinued and that this hole be reconverted to a producing oil well.