



COMPANY SUNRAY MID-CONTINENT OIL COMPANY DATE ON 4/18/56 FILE NO. RP-3-251  
WELL FEDERAL C-1 DATE OFF 4/18/56 ENGRS. GAH, LJB  
FIELD BISTI FORMATION GALLUP ELEV. 6196' DF  
COUNTY SAN JUAN STATE NEW. MEX. DRUG. FLD. WATER BASE MUD CORES DIAMOND  
LOCATION 660' NW SEC 6-T25N-R12W REMARKS SAMPLED BY CLI ENGINEER.

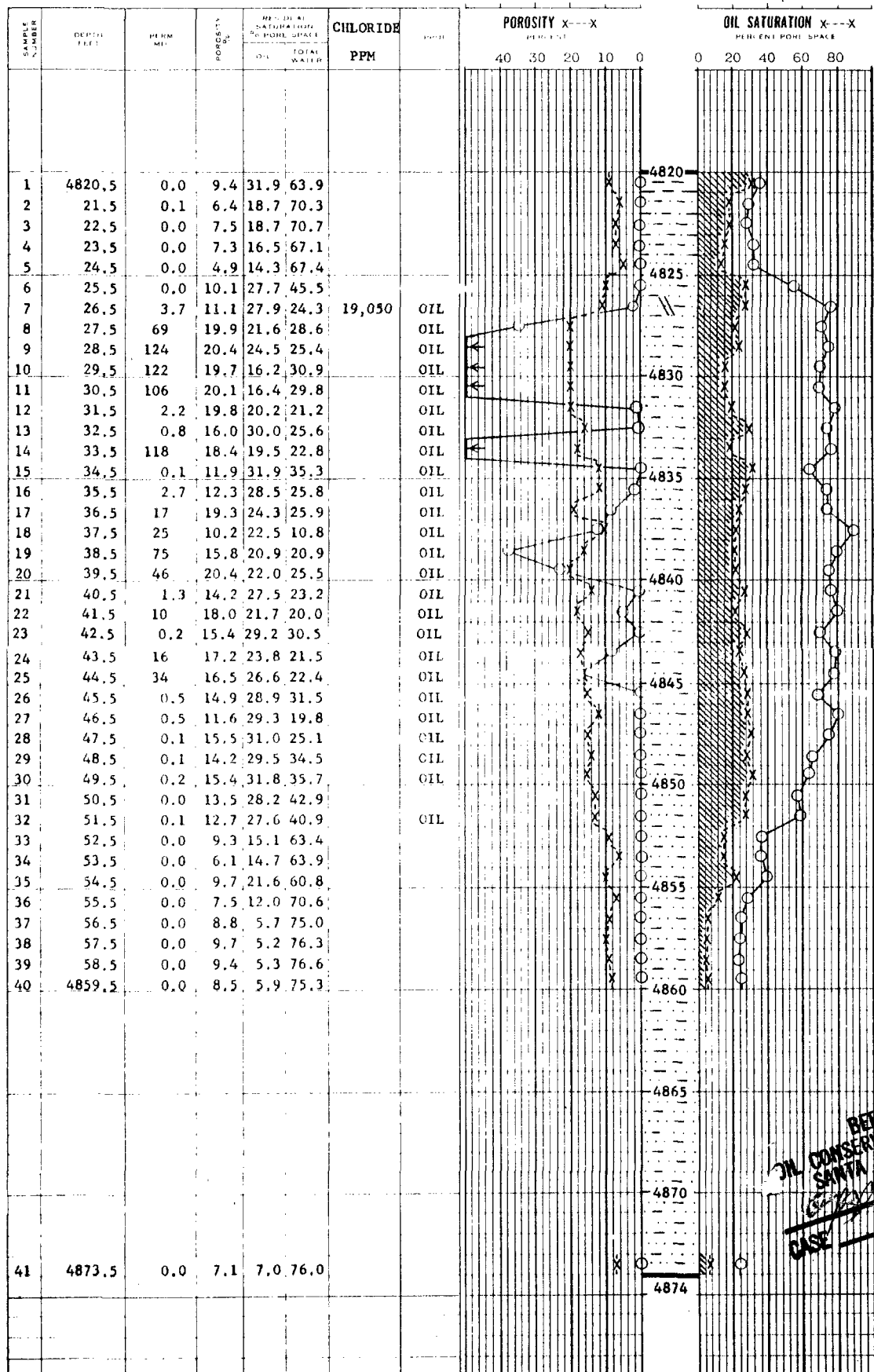


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VERTICAL FRACTURES: //

## COMPLETION COREGRAPH

## TABULAR DATA and INTERPRETATION



AVERAGE RESERVOIR AND FLUID CHARACTERISTICS  
BISTI (LOWER GALLUP) OIL POOL  
SAN JUAN COUNTY, NEW MEXICO

|                                                |                |
|------------------------------------------------|----------------|
| No. Wells Cored                                | 20             |
| Porosity, %                                    | 14.43          |
| Permeability, md.                              | 9.05           |
| Connate water, %                               | 24.5           |
| Solution gas at bubble point, cu. ft./bbl.     | 406            |
| Formation volume factor at bubble point        | 1.261          |
| Viscosity at bubble point, cp                  | 0.830          |
| Reservoir temp., °F                            | 145            |
| Gravity of oil, °API                           | 38             |
| Color of oil                                   | Greenish Brown |
| Bubble point pressure                          | 1207           |
| Original reservoir pressure at + 1300' psia    | 1438           |
| Bottom-hole pressure at + 1300', April, 1957   | 1319           |
| Cumulative oil production, bbls.               | 783,502        |
| Original stock tank oil in place, bbls./ac.ft. | 670            |

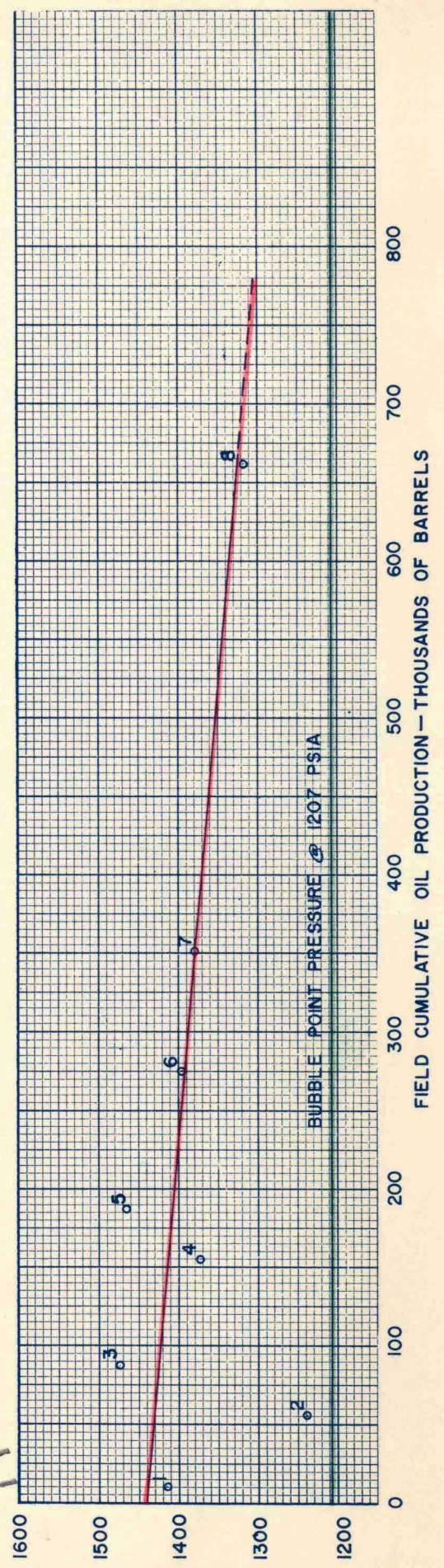
BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
EXHIBIT No. 7  
CASE 7

**BOTTOM HOLE PRESSURE DATA**  
**BISTI LOWER GALLUP OIL POOL**  
**San Juan County, N.M.**

| POINT<br>NUMBER<br>ON GRAPH | DESCRIPTION                               | DATE<br>TESTED  | PRESSURE<br>PSIA     |
|-----------------------------|-------------------------------------------|-----------------|----------------------|
| 1                           | AVERAGE OF EL PASO-KELLY<br>STATE 2 & 3   | FEBRUARY, 1956  | 1418<br>1409<br>1413 |
| 2                           | AVERAGE OF EL PASO-KELLY<br>STATE 3 & 5   | MAY, 1956       | 1289<br>1189<br>1239 |
| 3                           | AMERADA'S J. WHITE 1                      | JUNE, 1956      | 1473                 |
| 4                           | SMC - N.M. FED. C3                        | JULY, 1956      | 1370                 |
| 5                           | EL PASO-KELLY STATE 6                     | JULY, 1956      | 1464                 |
| 6                           | EL PASO-KELLY STATE 1                     | SEPTEMBER, 1956 | 1394                 |
| 7                           | FIELD AVERAGE FOR 23<br>BOMB TESTED WELLS | NOVEMBER, 1956  | 1383                 |
| 8                           | FIELD AVERAGE FOR 20<br>BOMB TESTED WELLS | APRIL, 1957     | 1319                 |

NOTE: ALL PRESSURES RECORDED BY PRESSURE BOMB AT DATUM + 1300 FEET

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
CASE 1280 EXHIBIT No. 8



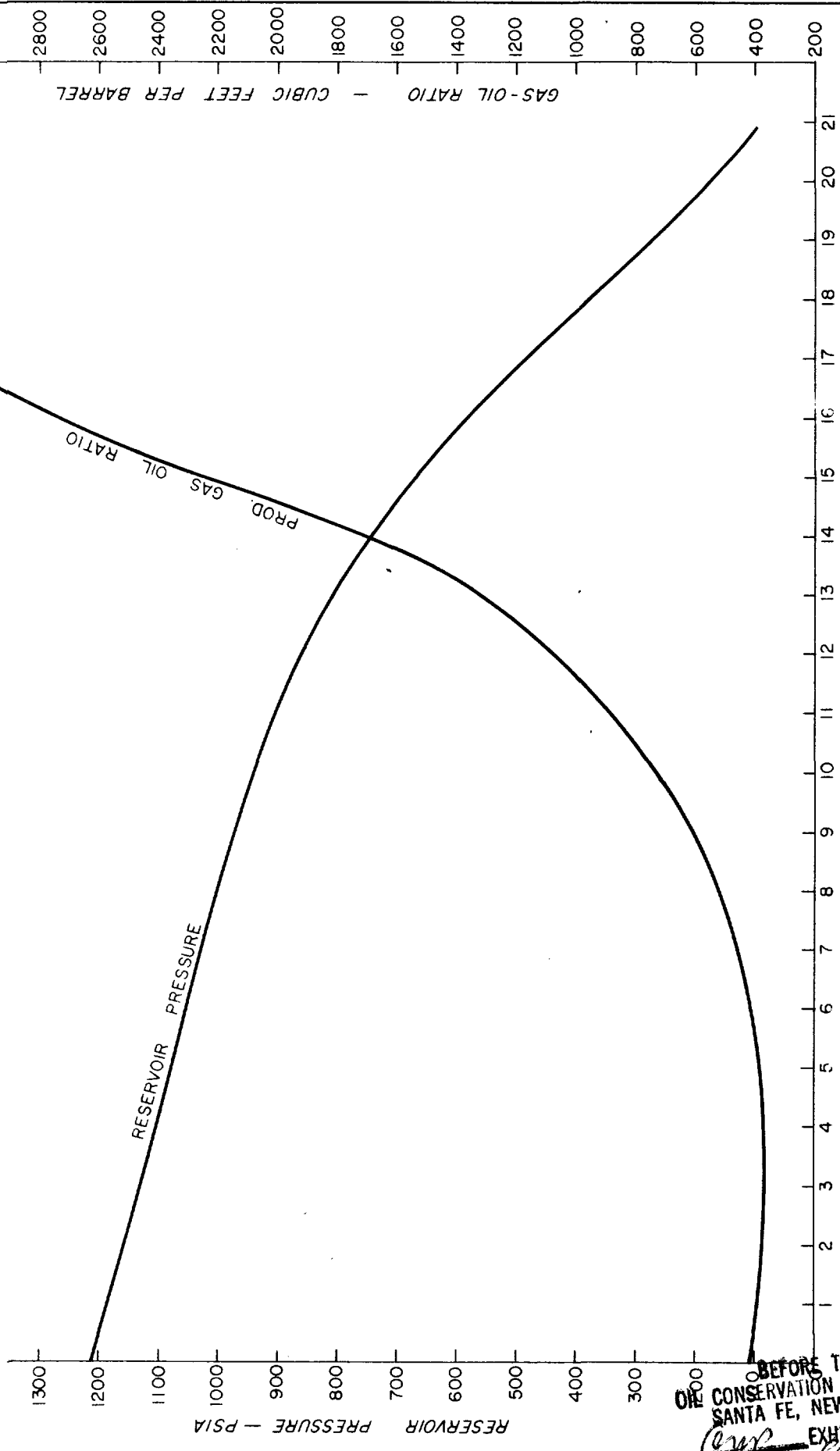
FIELD PRODUCTION DATA  
BISTI (LOWER GALLUP) OIL POOL  
SAN JUAN COUNTY, NEW MEXICO

| Year<br>and<br>Month | Number<br>of Wells<br>Produced | Oil Prod.<br>Bbls./Mo. | Cum. Oil<br>Prod.<br>Bbls. | Gas Prod.*<br>MCF/Mo. | Cum. Gas<br>Prod.<br>MCF | Avg. Daily<br>Oil Prod.<br>Bbls./day | Avg. Daily<br>Gas Prod.<br>MCF/day | Avg. GOR<br>Ft. <sup>3</sup> /Bbl |
|----------------------|--------------------------------|------------------------|----------------------------|-----------------------|--------------------------|--------------------------------------|------------------------------------|-----------------------------------|
| <u>1955</u>          |                                |                        |                            |                       |                          |                                      |                                    |                                   |
| Dec.                 | 1                              | 2,319                  | 2,319                      | 1,280                 | 1,280                    |                                      |                                    |                                   |
| <u>1956</u>          |                                |                        |                            |                       |                          |                                      |                                    |                                   |
| Jan.                 | 2                              | 4,493                  | 6,812                      | 2,918                 | 4,198                    | 145                                  | 94                                 | 649                               |
| Feb.                 | 4                              | 5,755                  | 12,567                     | 4,104                 | 8,302                    | 198                                  | 142                                | 715                               |
| Mar.                 | 5                              | 19,519                 | 32,086                     | 9,355                 | 17,657                   | 630                                  | 302                                | 479                               |
| Apr.                 | 12                             | 23,580                 | 55,666                     | 18,370                | 36,027                   | 786                                  | 612                                | 779                               |
| May                  | 16                             | 32,269                 | 87,935                     | 18,319                | 54,346                   | 1,041                                | 591                                | 567                               |
| June                 | 26                             | 35,220                 | 123,155                    | 17,265                | 71,611                   | 1,174                                | 576                                | 490                               |
| July                 | 39                             | 69,921                 | 193,076                    | 40,657                | 112,268                  | 2,256                                | 1,312                              | 582                               |
| Aug.                 | 49                             | 57,883                 | 250,959                    | 35,805                | 148,073                  | 1,867                                | 1,155                              | 619                               |
| Sept.                | 47                             | 60,278                 | 311,237                    | 44,662                | 192,735                  | 2,009                                | 1,489                              | 741                               |
| Oct.                 | 45                             | 42,032                 | 353,269                    | 29,788                | 222,523                  | 1,356                                | 961                                | 709                               |
| Nov.                 | 49                             | 33,351                 | 386,620                    | 21,042                | 243,565                  | 1,112                                | 701                                | 631                               |
| Dec.                 | 51                             | 31,205                 | 417,825                    | 17,820                | 261,385                  | 1,007                                | 575                                | 571                               |
| <u>1957</u>          |                                |                        |                            |                       |                          |                                      |                                    |                                   |
| Jan.                 | 44                             | 35,005                 | 452,830                    | 14,339                | 275,724                  | 1,129                                | 463                                | 410                               |
| Feb.                 | 50                             | 70,885                 | 523,715                    | 36,911                | 312,635                  | 2,532                                | 1,318                              | 521                               |
| Mar.                 | 58                             | 111,079                | 634,794                    | 59,801                | 372,436                  | 3,583                                | 1,929                              | 538                               |
| Apr.                 | 60                             | 99,377                 | 734,171                    | 50,863                | 423,299                  | 3,313                                | 1,695                              | 512                               |
| May                  | 72                             | 49,331                 | 783,502                    | 28,154                | 451,453                  | 1,591                                | 908                                | 571                               |

Source: New Mexico Oil and Gas Committee; Engineering Reports  
\* Gas production was estimated for producing oil wells which did not show a gas volume in the report.

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
EXHIBIT NO. 9

SOLUTION GAS DRIVE PERFORMANCE CURVE (BELOW BUBBLE POINT)  
 BISTI LOWER GALLUP OIL POOL  
 SAN JUAN COUNTY, NEW MEXICO



BEFORE THE  
 OIL CONSERVATION COMMISSION  
 SANTA FE, NEW MEXICO  
 EXHIBIT No. 10  
 CASE 1280

R-13-W

R-12-W

36

Phillips et al

Sunray Mid-Cont. All W.L.  
S-30675

31

T  
26  
N

18

160 ACRE PILOT AREA

8

1

2

Hospah

U.S.A. #078056

Brit. Amer.

81

1

1

T  
25  
N

6

Marye

70

6

PILOT AREA  
BISTI LOWER GALLUP OIL POOL  
SAN JUAN COUNTY  
NEW MEXICO

LEGEND

● OIL WELL

⊙ LPG GAS INJECTION WELL

(LOC- 3.5' FROM W/L & 3.5' FROM N/L - SEC. 6)

---- PILOT AREA

SUNRAY MID-CONTINENT OIL CO.

SCALE 1"=1000'

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

EXHIBIT No. 11

CASE

1280

SUNRAY MID-CONTINENT OIL COMPANY

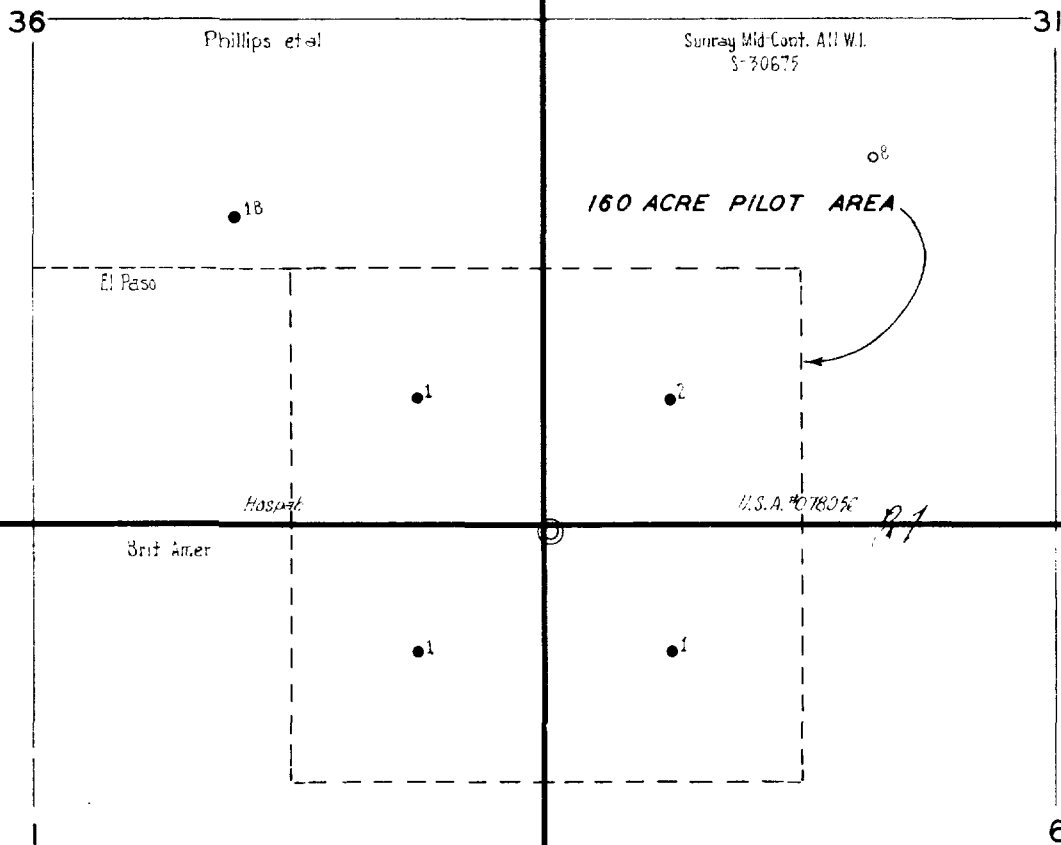
EXHIBIT NO. 11 DOCKET NO. 1280

A8-32

R-13-W

R-12-W

T  
26  
N



T  
25  
N

LEGEND

- OIL WELL
- ⊙ LPG GAS INJECTION WELL
- PILOT AREA

PILOT AREA  
BISTI FIELD  
SAN JUAN COUNTY  
NEW MEXICO

SUNRAY MID-CONTINENT OIL CO.  
SCALE 1"=1000'

EXHIBIT "A"