



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Box 829  
Carlsbad, New Mexico

January 31, 1961

Mr. R. H. Blackman, Jr.  
Resident Counsel  
Potash Company of America  
P. O. Box 31  
Carlsbad, New Mexico

Dear Mr. Blackman:

Recently you requested the opinion of this office as to whether or not an oil test proposed to be drilled by Cities Service Petroleum Company in the SW $\frac{1}{4}$ SE $\frac{1}{4}$  Section 18, T. 20 S., R. 34 E., N.M.P.M., New Mexico, would penetrate commercial quality potash ore if drilled.

The records of this office show that the proposed oil test is located well within the potash orebody as delineated by the Geological Survey to cutoff limits of 4-feet of 14% K<sub>2</sub>O for minimum commercial mineralization.

Please feel free to use this opinion concerning the proposed oil test location in any manner you wish.

Very truly yours,

*R. S. Fulton*

R. S. Fulton  
Regional Mining Supervisor

RSF:nb

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
*Potash Co* EXHIBIT No. 2  
CASE 2183



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Box 829  
Carlsbad, New Mexico

February 7, 1961

Potash Company of America  
P. O. Box 31  
Carlsbad, New Mexico

Gentlemen:

Recently you requested that this office compile tonnage and value data relative to recoverable potash ore under the following fixed conditions:

1. Ore 4 feet thick of 14%  $K_2O$  grade.
2. Mining extraction of 45%
3. Milling efficiency of 90%.
4. Average price of 35 cents per unit of  $K_2O$ .

You also requested that similar data be compiled for a 200-foot radius ore pillar left to protect a producing oil well. Recoverable values are determined by using the following formula:

Recoverable value per acre =  $2,724.5 \times$  thickness of ore in feet  $\times$  grade of ore in %  $K_2O \times$  mining extraction  $\times$  mill efficiency  $\times$  units of  $K_2O$  per ton  $\times$  price per unit of  $K_2O$ . The constant, 2,724.5, reflects the ore tonnage contained in one acre-foot, using 15 cubic feet = 1 ton. Following are the values determined:

|                                                      | <u>Recoverable</u><br><u>Value Per Ton</u> | <u>Recoverable</u><br><u>Tons Per Acre</u> | <u>Recoverable</u><br><u>Value Per Acre</u> |
|------------------------------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------------------|
| Total Mining (extraction<br>45% mill efficiency 90%) | \$ 4.41                                    | 4,900.5                                    | \$ 21,611.10                                |

The following reflects the tonnage, and recoverable potash value in a 200-foot radius pillar:

|                                           |      |                |
|-------------------------------------------|------|----------------|
| Tons of ore in pillar                     | =    | 31,416         |
| Recoverable value per ton                 | =    | \$ <u>4.41</u> |
| Total value of ore in pillar              | = \$ | 138,544.56     |
| Recoverable value of ore in pillar        | = \$ | 62,345.05      |
| (at 45% extraction, if could be<br>mined) |      |                |

RECEIVED THE  
CHIEF OF MINES  
BUREAU OF MINE  
EXHIBIT NO. 3  
CASE 518213

Very truly yours,

*R. S. Fulton*

R. S. Fulton  
Regional Mining Supervisor



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Box 829  
Carlsbad, New Mexico

February 2, 1961

Potash Company of America  
P. O. Box 31  
Carlsbad, New Mexico

Gentlemen:

Recently you requested that this office compile tonnage and value data relative to recoverable potash ore under the following fixed conditions:

1. Ore 4 feet thick of 14% K<sub>2</sub>O grade.
2. Mining extraction of 45%.
3. Milling efficiency of 90%.
4. Average price of 35 cents per unit of K<sub>2</sub>O.

You also requested that similar data be compiled for a 200-foot radius ore pillar left to protect a producing oil well. Recoverable values are determined by using the following formula:

Recoverable value per acre = 2,722.5 x thickness of ore in feet x grade of ore in % K<sub>2</sub>O x mining extraction x mill efficiency x units of K<sub>2</sub>O per ton x price per unit of K<sub>2</sub>O. The constant, 2,722.5, reflects the ore tonnage contained in one acre-foot, using 16 cubic feet = 1 ton. Following are the values determined:

|                                                      | <u>Recoverable</u><br><u>Value Per Ton</u> | <u>Recoverable</u><br><u>Tons Per Acre</u> | <u>Recoverable</u><br><u>Value Per Acre</u> |
|------------------------------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------------------|
| Total Mining (extraction<br>45% mill efficiency 90%) | \$ 4.41                                    | 4,900.5                                    | \$ 21,611.10                                |

The following reflects the tonnage, and recoverable potash value in a 200-foot radius pillar:

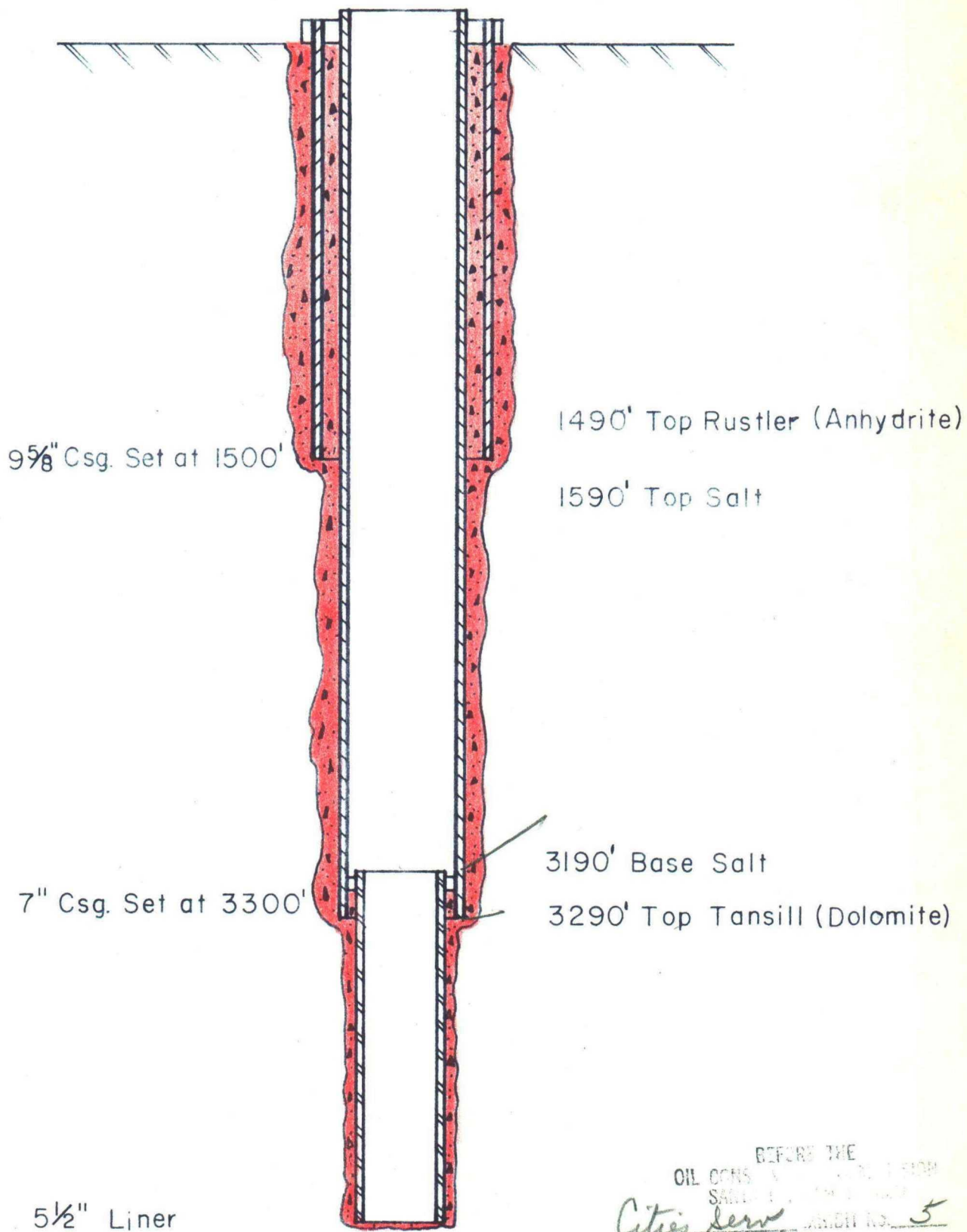
|                                                                                 |      |            |
|---------------------------------------------------------------------------------|------|------------|
| Tons of ore in pillar                                                           | =    | 31,416     |
| Recoverable value per ton                                                       | =    | \$ 4.41    |
| Total value of ore in pillar                                                    | = \$ | 138,544.56 |
| Recoverable value of ore in pillar<br>(at 45% extraction, if could be<br>mined) | = \$ | 62,345.05  |

BEFORE THE  
OIL CONS. & DEV. COMMISSION  
SANTA FE, NEW MEXICO  
*Potash Co.* EXHIBIT No. 3  
CASE 2182-3

Very truly yours,

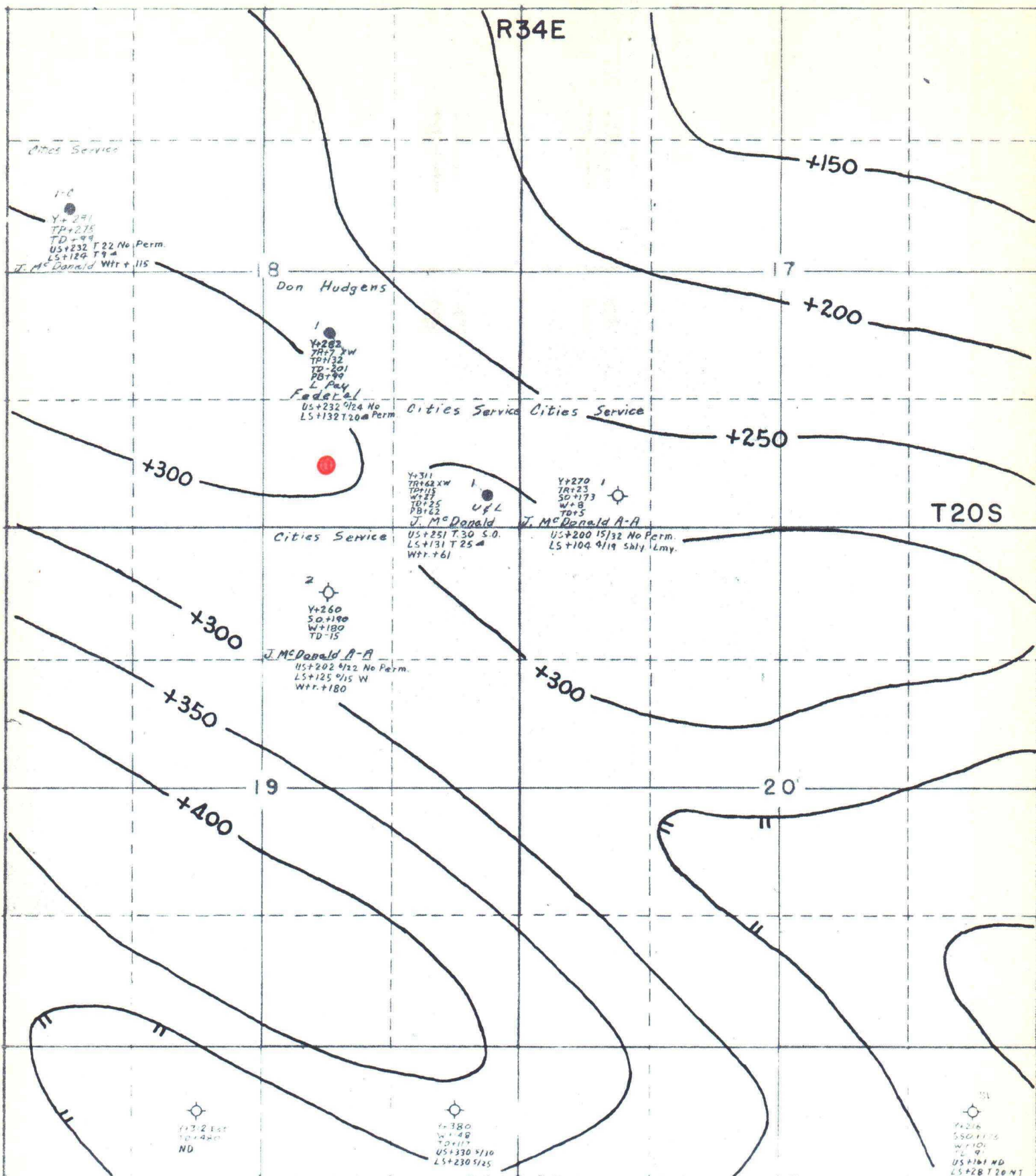
*R. S. Fulton*

R. S. Fulton  
Regional Mining Supervisor



BEFORE THE  
OIL CONS. & PROD. COM. OF N.M.  
SALV. & RECL. DIV.  
*Cities Service* LEASE NO. 5  
CASE 2182-3

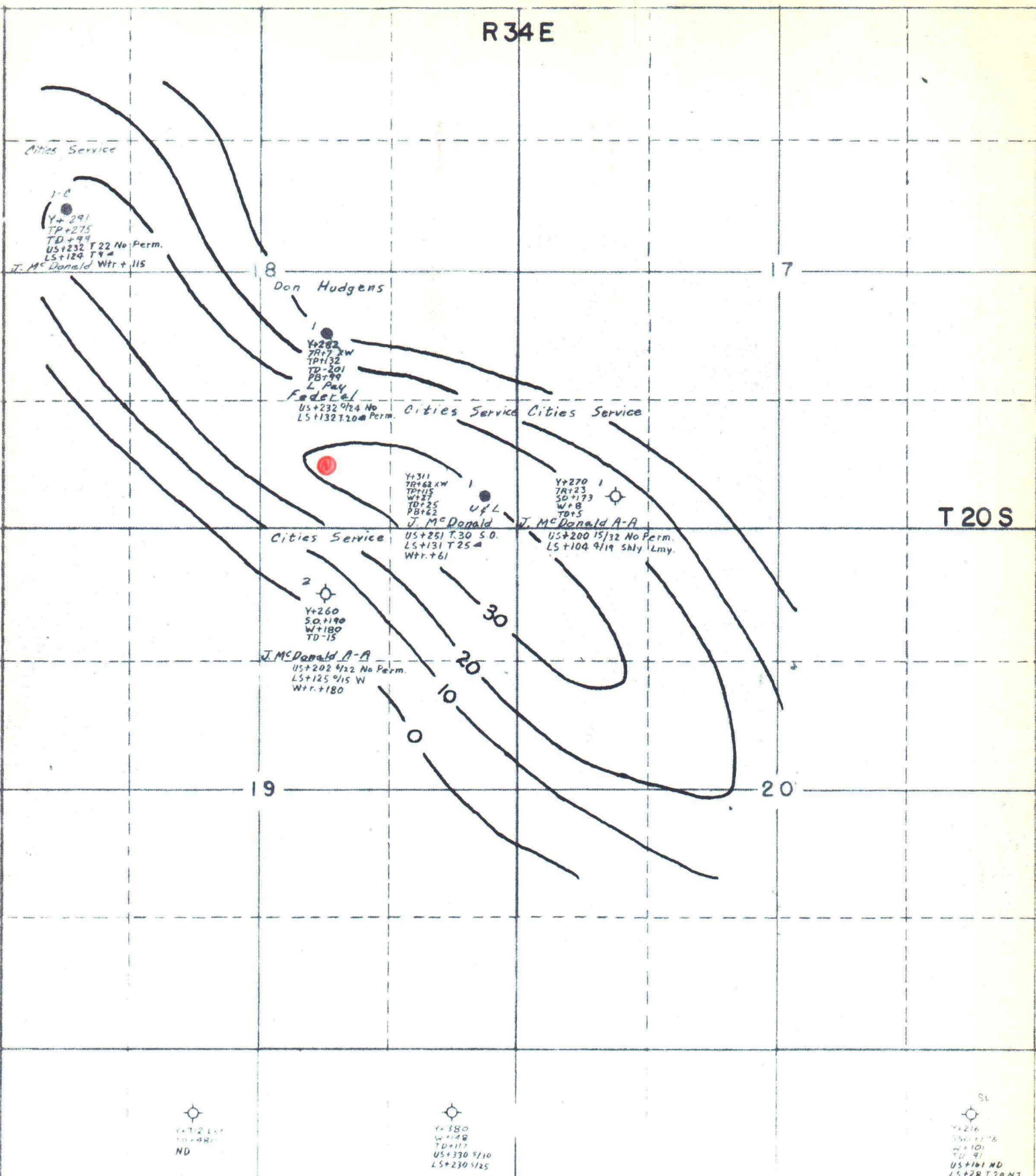
**Cities Service Petroleum Company**  
North Lynch Pool, Lea County, N.M.  
Proposed Casing Program



Cities Service Petroleum Company  
 North Lynch Pool, Lea County, N.M.  
 Structure Map - Top of Yates

BEFORE THE  
 OIL CONSERVATION COMMISSION  
 SANTA FE, NEW MEXICO  
 Cities Service EXHIBIT No. 6  
 CASE 2182-3

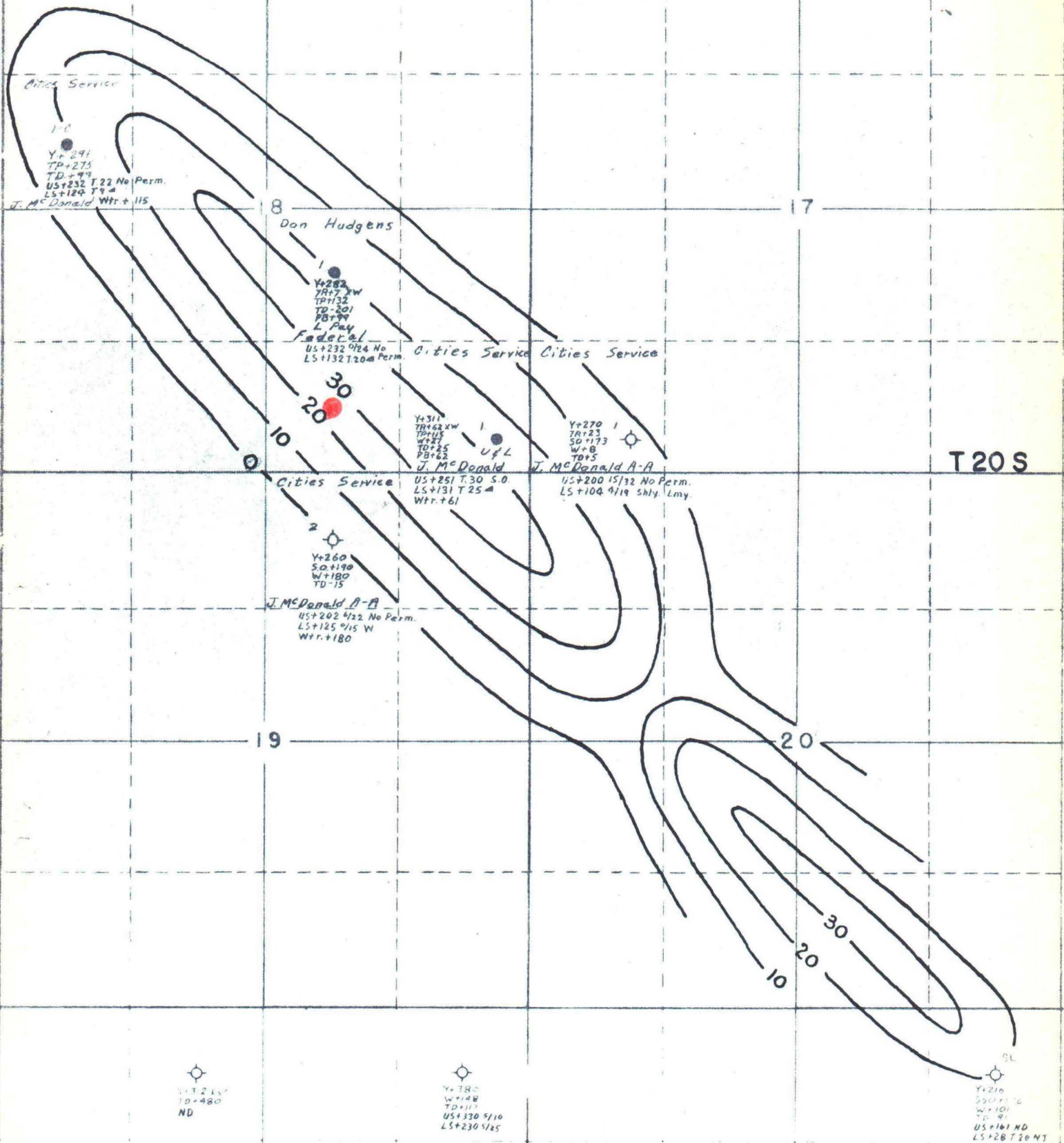
R34E



Cities Service Petroleum Company  
 North Lynch Pool, Lea County, N. M.  
 Upper Yates Pay Thickness C.I. = 10'

BEFORE THE  
 OIL CONSERVATION COMMISSION  
 SANTA FE, NEW MEXICO  
 Cities Service EXHIBIT No. 7  
 CASE 2182-3

R34E



Cities Service Petroleum Company

North Lynch Pool, Lea County, N. M.

Lower Yates Pay Thickness C.I. = 10'

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

Cities Serv. No. 8  
CASE 2182-3