SEC. COR. 7 | 8 / 18 | 17

N. 1/4 Cor. Sec. 17, T 29 N., R 14 W., N.M.P.M.

SEC. COR. 8 | 9 / 17 | 16

S 89°57' W 660.6 653

NEW HIGHWAY NO. 550

13.36 AC.±
CARL E. SCHMITT

14.21 AC.±
D. M. CHAVEZ JR.

693.3 SOUTH 912.35 SOUTH 970.6 S 0° 22' W

N 86°40' W 647.88

OLD HIGHWAY NO. 550

S 86°40' E 1127

AUSTIN W. PHILLIPS
9.88 AC.±

AUSTIN W. PHILLIPS
39.34 AC.±

9.41 AC.±

AUSTIN W. PHILLIPS

Center of Sec. 17

WEST 1296.58

10.56 AC.±

29.44 AC.

20.00 AC.

117.53 ACRES

50.45 AC

21.70 AC.

20.87 AC.

9.00 AC

SAN JUAN RIVER

FLOOD PLAIN

EDGE OF WATER

High Bank

Low Bank

Water Edge

N 55° 50' W 552.8

N 72° 39' W 695.45

N 72° 00' W 1850.61

N 67° 43' W 632.05

N 79° 02' W 1157.3

N 64° 06' W 1016.60

N 86° 45' W 421.5

S 79° 15' W 545

N 52° 03' W 888

N 39° 17' W 289

N 80° 15' W 206.2

S 58° 34' W 400

S 43° 28' W 998.8

S 81° 49' W 211.5

N 85° 09' E 276.85

S 88° 46' E 1434.0

S 55° 45' E 1063.9

N 88° 06' W 290.73

N 35° 52' W 377.73

330-0

1415-

1089

1258

520

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

James P. Leese

JAMES P. LEESE
REG. LAND SURVEYOR
N. MEX. REG. NO. 1463

SURVEY OF LEASES
FOR
HUMBLE OIL & REFINING CO.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. ____
CASE NO. ____

Case 2297

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

SECTION A.

DATE _____

OPERATOR _____ LEASE _____

WELL NO. _____ UNIT LETTER _____ SECTION _____ TOWNSHIP _____ RANGE _____ NMPM

LOCATED _____ FEET FROM _____ LINE, _____ FEET FROM _____ LINE

COUNTY _____ G. L. ELEVATION _____ DEDICATED ACREAGE _____ ACRES

NAME OF PRODUCING FORMATION _____ POOL _____

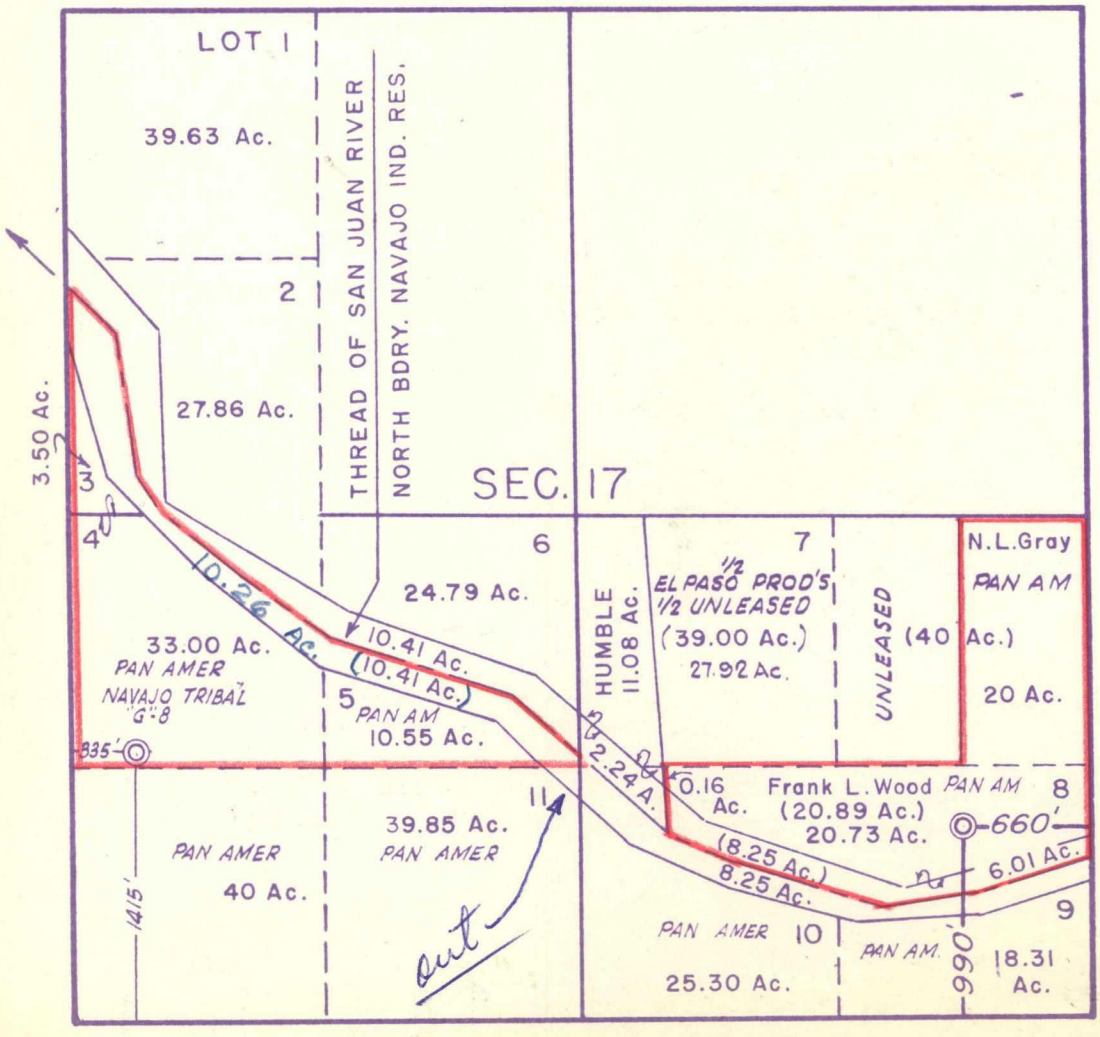
1. IS THE OPERATOR THE ONLY OWNER* IN THE DEDICATED ACREAGE OUTLINED ON THE PLAT BELOW? YES _____ NO _____

2. IF THE ANSWER TO QUESTION ONE IS "NO," HAVE THE INTERESTS OF ALL THE OWNERS BEEN CONSOLIDATED BY COMMUNITIZATION AGREEMENT OR OTHERWISE? YES _____ NO _____ IF ANSWER IS "YES," TYPE OF CONSOLIDATION _____

3. IF THE ANSWER TO QUESTION TWO IS "NO," LIST ALL THE OWNERS AND THEIR RESPECTIVE INTERESTS BELOW:

OWNER	LAND DESCRIPTION

SECTION B. SCALE 1"=1000'



THIS IS TO CERTIFY THAT THE INFORMATION IN SECTION A ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

(OPERATOR)

(REPRESENTATIVE)

(ADDRESS)

THIS IS TO CERTIFY THAT THE WELL LOCATION SHOWN ON THE PLAT IN SECTION B WAS PLOTTED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE SURVEYED _____

FOUR STATES ENGINEERING CO.

FARMINGTON, NEW MEXICO

REGISTERED ENGINEER OR LAND SURVEYOR

CERTIFICATE NO. _____

SURVEY INFORMATION WITHIN THE NAVAJO INDIAN RESERVATION

The following is reproduced for your information from a study previously made of the matter in response to a former inquiry:

This office can furnish accurate information for only that portion of the Reservation in New Mexico. Information regarding the Arizona surveys may be obtained by addressing the Office Cadastral Engineer for Arizona, Arizona State Office, Main Post Office Building, Phoenix.

There is enclosed a diagram which shows the extent of surveys made within the Navajo Reservation which are referred to the New Mexico Principal Meridian, New Mexico, and which are now the only official surveys within that area, since surveys under the Navajo Meridian were cancelled.

The lines surveyed within Townships 17 through 20 North, (including the portion of the Fifth Standard Parallel North), were by A. Parker Warner, Cadastral Engineer, in 1931. Costs of survey were paid from the appropriation, "Surveying and Allotting Indian Reservations, 1932". There are 20 plats showing these surveys.

The Sixth Standard Parallel North and boundaries of Ts. 25, 26, 27 and 28 N., R. 19 W. (exclusive of Seventh Standard Parallel North), were surveyed by Harold R. Vogel and Jack C. Means, Cadastral Engineers, in 1955. The field work is completed. Field notes and plats have not been received for filing. Costs of survey were paid from a contribution advanced by the Humble, Tide Water, Stanolind, Continental-Gulf, and Murphy-Texas Pacific Oil Companies.

The Seventh Standard Parallel North, as far west as the Treaty East Boundary of the Reservation, was surveyed by Deputy Surveyor Fitch in 1877. Ts. 29 N., Rs. 14 and 15 W., and R. 16 W., east of the Treaty East Boundary, were surveyed by deputy surveyors in 1881 and 1882. The Reservation was later extended by Executive Order (survey of boundaries originally by John G. Evans in 1884), and the east boundary found to pass through T. 29 N., R. 14 W., about one mile west of its east boundary to the San Juan River, which then forms the boundary to its intersection with the Treaty East Boundary. Information in recent years is that the original marks of the 1877, 1881 and 1882 surveys are deteriorated, but that a reasonable percentage can be identified.

Boundaries and subdivision shown for T. 29 N., R. 16 W., lying west of the Treaty East Boundary, and Ts. 29 and 30 N., Rs. 17 and 18 W., were surveyed by Clayton R. Burt in 1913 under an appropriation for surveying Indian Reservations. During this survey he also restored the Treaty East Boundary from the Seventh Standard to the Colorado-New Mexico Boundary.

The boundaries of Ts. 29 and 30 N., Rs. 19, 20, and 21 W., (not previously mentioned, and excluding the Arizona-New Mexico Boundary), and of Ts. 31 and 32 N., R. 21 W., (again excluding the Arizona-New Mexico, and the Colorado-New Mexico Boundaries), were surveyed by Hugh B. Crawford, Cadastral Engineer, in 1951. Costs of survey were paid from funds advanced by the Office of Indian Affairs.

The Colorado-New Mexico Boundary has been resurveyed by Arthur D. Kidder, Commissioner, for the United States Supreme Court. Field notes or plats of this survey are not available here, but the plat of T. 32 N., R. 21 W., does reflect the survey information for its north boundary. The Arizona-New Mexico boundary has been resurveyed from its north end to slightly below the Seventh Standard Parallel North. This restoration was made in connection with Arizona surveys, but the information is shown on the New Mexico plats, Ts. 29 to 32 N., R. 21 W.

The boundaries of the Navajo Treaty Reservation, and some township surveys referred to its east boundary as a meridian, and to its south boundary as a base, were surveyed by E. N. Darling in 1869 and 1870. Correspondence in the files shows that these surveys received consideration in 1931, in conferences with employees and officials of the Bureau of Indian Affairs, the General Land Office, and members of the Navajo Tribal Council. The result of these conferences disclosed that no disposals had been made of land under the Darling Surveys, and that the physical evidence of the surveys was almost entirely gone. Accordingly, on May 12, 1931, Commissioner Rhoads, of Indian Affairs, advised Commissioner Moore, of the General Land Office, of the desirability of abandoning these surveys. The intent at that time was to complete surveys within the Reservation by a continuing program, referring those in New Mexico to the New Mexico Principal Meridian, and those in Arizona to the Gila and Salt River Meridian. Upon further study, the Commissioner of the General Land Office cancelled those surveys referred to the Navajo Base and Meridian on June 17, 1936 (in New Mexico, only).

There are at present 42 plats in our file which show current information on townships within the reservation, and for its south boundary. In addition, there are 5 additional plats for the 1881-1882 surveys in T. 29 N., which have been superseded or for which information is available on those in the 42 mentioned. Completing information of the resurvey of the east boundary of the reservation requires an additional 8 sheets of plats of townships in R. 13 W., outside the reservation. An approved plan of survey for the area lying between the Sixth and Seventh Standard Parallels is on file. Photostats of these are available at $1.00 per sheet, remittance to be made payable to the Bureau of Land Management.

Surveys within the Reservation can not be made under the current appropriation available to the Bureau of Land Management. They can be made from funds advanced by the Office of Indian Affairs, or from contributions by individuals or companies, upon proper arrangements with the Area Administrator, Bureau of Land Management, Denver Federal Center, Denver, Colorado.

CASE 2297
EXHIBIT 2-a
EL PASO NATURAL GAS PRODUCTS

BASIC RESERVOIR DATA FOR CHA CHA - GALLUP POOL, SAN JUAN COUNTY, NEW MEXICO

Original Oil in Place = $\frac{\text{7758 (Ac-Ft) (Porosity) (1-Water Sat.)}}{\text{Oil Vol. Factor}}$

Where; Porosity = 14.7%
Water Sat. = 35.0%
Oil Vol. Factor = 1.392

Therefore, O. O. I. P. = $\frac{(7758)\ (1)\ (0.147)\ (0.65)}{1.392}$ = 532.53 bbl/ac-ft

Ultimate Primary Recovery = 13.7% x 532.53 = 72.9 bbl/ac-ft

Ultimate Primary plus Secondary Recovery = 38.3% x 532.53 = 203.8 bbl/ac-ft

CASE 2297
EXHIBIT 2-b
EL PASO NATURAL GAS PRODUCTS

ECONOMICS OF PRIMARY RESERVE FOR AN AVERAGE 80-ACRE WELL, PROPOSED NORTHWEST CHA CHA - GALLUP UNIT, SAN JUAN COUNTY, NEW MEXICO

Gross Oil Reserve = 72.9 bbl/ac-ft x 80 acres x 6.52 feet
Gross Oil Reserve = 38,025 bbl

Net W.I. Oil Reserve = 33,272 bbl

Value of W. I. Oil @ $2.50 = $83,180

Less Operating Cost *	=	$ 8,460
Less Well Development Cost	=	$ 60,000
Less Pumping Equipment Cost	=	$ 8,500
Profit to W. I. Owner on Oil	=	$ 6,220
Value of Casinghead Gas	=	$ 6,064
Total Profit	=	$ 12,284

* $150 per well per month x 56.4 months

CASE 2297
EXHIBIT 2-C
EL PASO NATURAL GAS PRODUCTS

5

ECONOMICS OF PAN AMERICAN - WOOD # 1 WELL
WITH AN ALLOCATION OF 46.74 ACRES

	PRIMARY	PRIMARY PLUS SECONDARY
Productive acre-feet	234	234
Gross oil reserve, bbl	17,059	47,689
Net W. I. Oil reserve, bbl	14,927	41,728
Value of W. I. oil @ $2.50	$37,318	$104,320
Less operating costs *	$ 8,460	$ 27,180
Less well development cost	$60,000	$ 60,000
Less pumping equipment	$ 8,500	$ 11,237
Less secondary equipment	--	$ 7,900
Profit to W. I. owner on oil	$-39,642	$- 1,997
Value of casinghead gas	$ 2,720	$ 2,332
Total profit	$-36,922 ✓	$+ 335 ✓

* Primary = $150 per well month x 56.4 months
Secondary = Primary plus $300 per well month x 62.4 months

CASE 2297
EXHIBIT 2-A
EL PASO NATURAL GAS PRODUCTS

ECONOMICS OF PAN AMERICAN - WOOD # 1 WELL
WITH AN ALLOCATION OF ALL OF THE SOUTHEAST QUARTER OF
SECTION 17 NORTH OF THE RIVER (Approximately 104 Acres)

	PRIMARY	PRIMARY PLUS SECONDARY
Productive acre-feet	552	552
Gross oil reserve, bbl	40,241	112,498
Net W. I. oil reserve, bbl	35,211	98,436
Value of W. I. oil @ $2.50	$ 88,028	$ 246,090
Less operating costs	$ 8,460	$ 27,180
Less well development cost	$ 60,000	$ 60,000
Less pumping equipment	$ 8,500	$ 11,237
Less secondary equipment	--	$ 7,900
Profit to W. I. owner on oil	$ 11,068	$ 139,773
Value of casinghead gas	$ 6,417	$ 5,502
Total profit	$ 17,485 ✓	$ 145,275 ✓