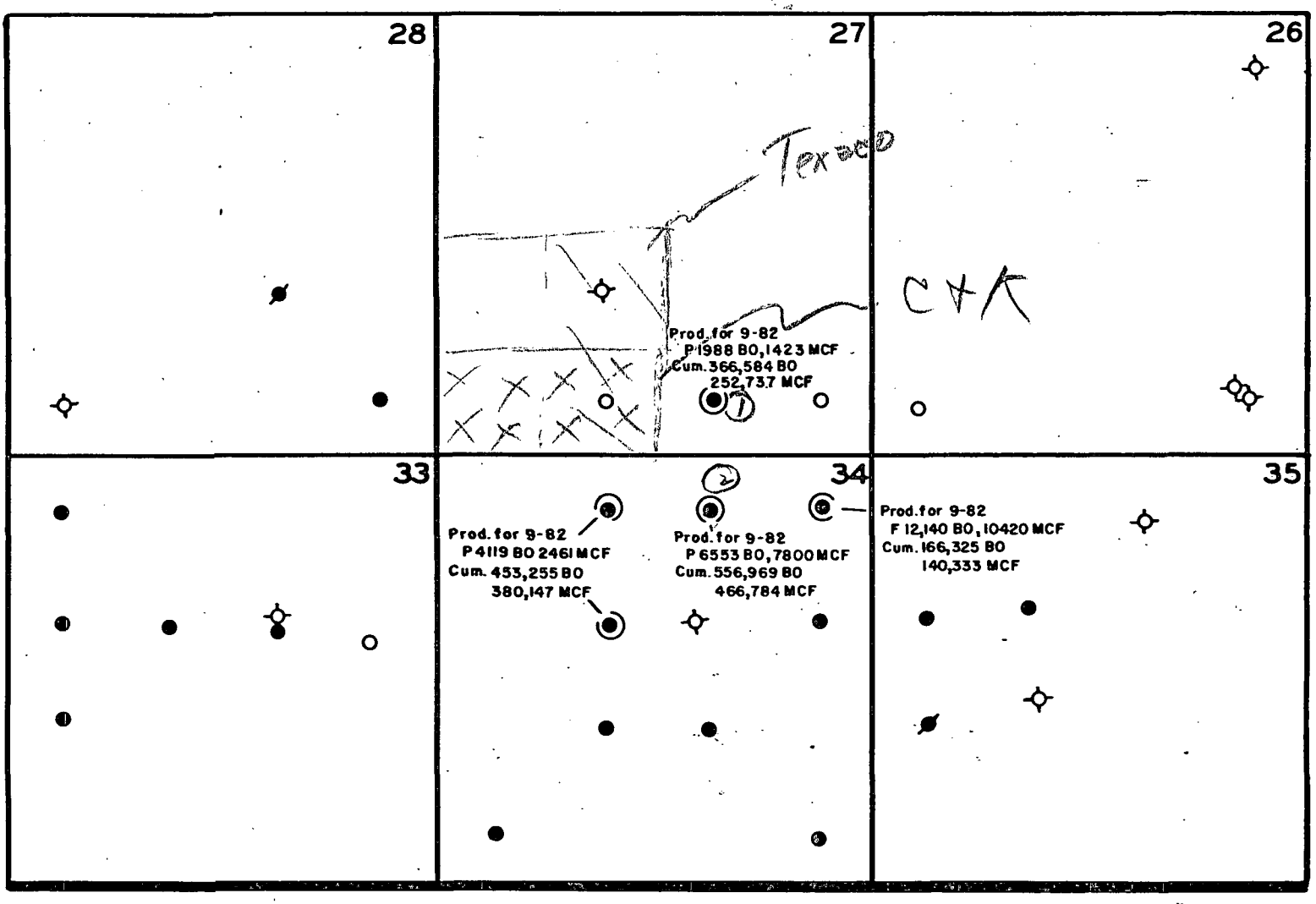
T. 16 S. - R. 37 E.



PRODUCTION MAP

Cum. as of 10-1-82

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 7730 Exhibit No. 15
Submitted by C & K
Hearing Date

CASEY (STRAWN) FIELD
CALCULATIONS

MINIMUM DRAINAGE AREA

The volumetric equation for ultimate recovery is:

$$\text{ULTIMATE RECOVERY} = \frac{7758 \times A \times H \times \emptyset \times (1-S_W) \times \text{R.F.}}{B_O}$$

Solved for drainage area:

$$\text{ACRES (drainage)} = \frac{\text{Ultimate Recovery} \times B_O}{7758 \times H \times \emptyset \times (1-S_W) \times \text{R.F.}}$$

From log calculations, literature and fluid properties:

	Ø (%) min-max	H (ft.) min-max	S_W (%) min-max	R.F. (%) min-max	Ult. Rec. (MBO) min - max	B_O (bbl/bbl) min - max
West Knowles No. 4	6 - 13	21 - 59	12 - 30	12 - 25	665 - 865	1.4 - 1.6
Shipp '27' No. 1	6 - 8	12 - 55	7 - 22	12 - 25	400 - 470	1.4 - 1.6
Shipp '34' A No. 1	10 - 14	22 - 24	35 - 70	12 - 25	262 - 380	1.4 - 1.6
Shipp '34' A No. 2	6 - 10	16 - 28	6 - 32	12 - 25	262 - 380	1.4 - 1.6

For minimum acreage drained: $\text{ACRES} = \frac{\text{Ultimate recovery} \times B_O}{7758 \times H \times \emptyset \times (1-S_W) \times \text{R.F.}}$ use min # in numerator, use max # in denominator

West Knowles No. 4 minimum drainage area $= \frac{665{,}000 \times 1.4}{7758 \times 59 \times .13 \times (1-.12) \times .25} =$ 71 ACRES

Shipp '27' No. 1 minimum drainage area $= \frac{400{,}000 \times 1.4}{7758 \times 55 \times .08 \times (1-.07) \times .25} =$ 70 ACRES

Shipp '34' A No. 1 minimum drainage area $= \frac{262{,}000 \times 1.4}{7758 \times 24 \times .14 \times (1-.35) \times .25} =$ 86 ACRES

Shipp '34' A No. 2 minimum drainage area $= \frac{262{,}000 \times 1.4}{7758 \times 28 \times .10 \times (1-.06) \times .25} =$ 72 ACRES

11-17-82