STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
SANTA FE, NEW MEXICO
87501

ADMINISTRATIVE ORDER
NFL 4

INFILL DRILLING FINDINGS AND WELL-SPACING WAIVER
MADE PURSUANT TO SECTION 271.305(b) OF THE
FEDERAL ENERGY REGULATORY COMMISSION REGULATIONS,
NATURAL GAS POLICY ACT OF 1978 AND OIL CONSERVATION DIVISION
ORDER NO. R-6013

I.

Operator ARCO Oil and Gas Co. Well Name and No. Frederick H. Curry WN Well No. 2

Location: Unit N Sec. 1 Twp. 24S Rng. 36E Cty. Lea

II.

THE DIVISION FINDS:

(1) That Section 271.305(b) of the Federal Energy Regulatory Commission Interim Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit, and must grant a waiver of existing well-spacing requirements.

(2) That by Order No. R-6013, dated June 7, 1979, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) That the well for which a finding is sought is to be completed in the Jalmat Gas Pool, and the standard spacing unit in said pool is 640 acres.

(4) That a 320 -acre proration unit comprising the S/2 of Sec. 1, Twp. 24S, Rng. 36E, is currently dedicated to the Frederick H. Curry Well No. 1 located in Unit P of said section.

(5) That this proration unit is ( ) standard (X) nonstandard; if nonstandard, said unit was previously approved by Order No. R-2889.

(6) That said proration unit is not being effectively and efficiently drained by the existing well(s) on the unit.

(7) That the drilling and completion of the well for which a finding is sought should result in the production of an additional 2.92 BCF of gas from the proration unit which would not otherwise be recovered.

(8) That all the requirements of Order No. R-6013 have been complied with, and that the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

(9) That in order to permit effective and efficient drainage of said proration unit, the subject application should be approved as an exception to the standard well spacing requirements for the pool.

IT IS THEREFORE ORDERED:

(1) That the applicant is hereby authorized to drill the well described in Section I above as an infill well on the existing proration unit described in Section II(4) above. The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on this 1st day of October, 1979.

DIVISION DIRECTOR X EXAMINER ___

OK

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
SANTA FE, NEW MEXICO
87501

ADMINISTRATIVE ORDER
NFL 4

INFILL DRILLING FINDINGS AND WELL-SPACING WAIVER
MADE PURSUANT TO SECTION 271.305(b) OF THE
FEDERAL ENERGY REGULATORY COMMISSION REGULATIONS,
NATURAL GAS POLICY ACT OF 1978 AND OIL CONSERVATION DIVISION
ORDER NO. R-6013

I.

Operator ARCO Oil and Gas Co Well Name and No. Frederick H. Curry WN Well No 2

Location: Unit N Sec. 1 Twp. 24S Rng. 36 E Cty. Lea

II.

THE DIVISION FINDS:

(1) That Section 271.305(b) of the Federal Energy Regulatory Commission Interim Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit, and must grant a waiver of existing well-spacing requirements.

(2) That by Order No. R-6013, dated June 7, 1979, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) That the well for which a finding is sought is to be completed in the Jalmat Gas Pool, and the standard spacing unit in said pool is 640 acres.

(4) That a 320 -acre proration unit comprising the S/2 of Sec. 1, Twp. 24S, Rng. 36 E, is currently dedicated to the Frederick H. Curry Well No 1 located in Unit P of said section.

(5) That this proration unit is ( ) standard (X) nonstandard; if nonstandard, said unit was previously approved by Order No. R-2889.

(6) That said proration unit is not being effectively and efficiently drained by the existing well(s) on the unit.

(7) That the drilling and completion of the well for which a finding is sought should result in the production of an additional 2.92 MCF of gas from the proration unit which would not otherwise be recovered. LB

(8) That all the requirements of Order No. R-6013 have been complied with, and that the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

(9) That in order to permit effective and efficient drainage of said proration unit, the subject application should be approved as an exception to the standard well spacing requirements for the pool.

IT IS THEREFORE ORDERED:

(1) That the applicant is hereby authorized to drill the well described in Section I above as an infill well on the existing proration unit described in Section II(4) above. The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on this _____ day of _____, 19_____.

DIVISION DIRECTOR ___ EXAMINER ___

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

September 20, 1979

Oil Conservation Division
of New Mexico Department of
Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T24S, R36E
Lea County, New Mexico

Attention: Mr. R. Stamets

In support of our original request on August 9, 1979 for an infill finding under Order R-6013 we submit the following evidence. The volume of increased ultimate recovery from the drilling of the subject well is estimated to be 2.92 BCF. The reserve calculations and supporting data are attached.

Included with this letter are the following:

(1) Isopach map of Jalmat Gas zone plus calculations of average net pay.

(2) East-West cross-section of Jalmat zone on S/2 section 1 - 320 acre proration unit. Section shows net pay on logs.

(3) P/Z vs Gp plot of recoverable reserves for E. H. Curry No. 1. Also, data sheet from which plot was drawn.

(4) Summary of the Reserve Calculation.

(5) Summary sheet of wells used in Isopach map.

Please accept this additional information in support of our original request. If you need additional information, please advise.

Sincerely,

R. M. Malaise

R. M. Malaise

RMM:ad

cc: Offset Operators
George Ricks - Hobbs
Phil Tomlinson - Midland

LIST OF OFFSET OPERATORS

CONTINENTAL OIL COMPANY
P. O. BOX 460
HOBBS, NEW MEXICO 88240

GETTY OIL COMPANY
P. O. BOX 1231
MIDLAND, TEXAS 79702

MOBIL OIL CORP.
GREENWAY PLAZA
SUITE 2700
HOUSTON, TEXAS 77046

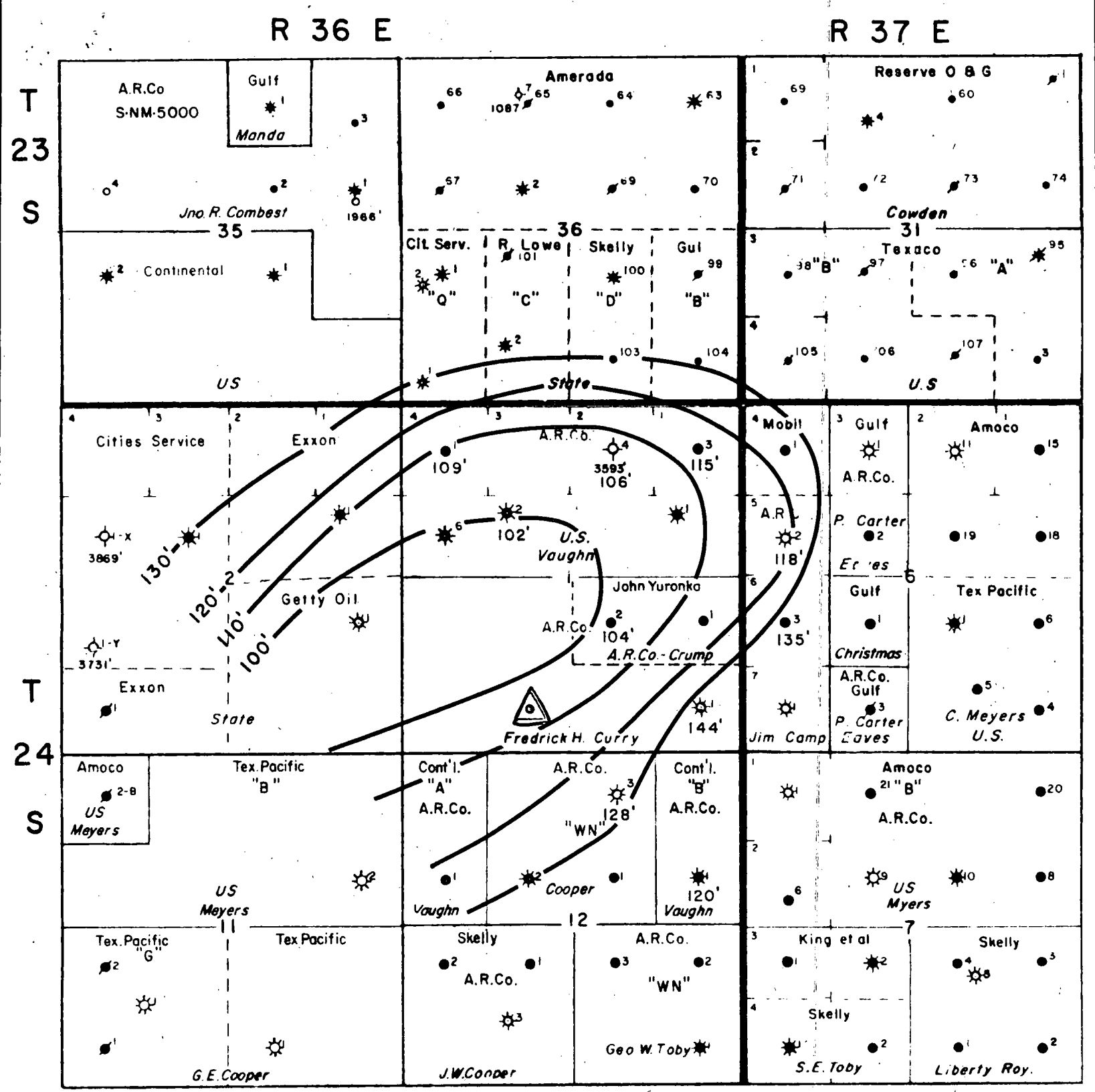
GULF OIL COMPANY
P. O. BOX 1150
MIDLAND, TEXAS 79701

TEXAS PACIFIC
1509 W. WALL
MIDLAND, TEXAS 79701

AMOCO PRODUCTION COMPANY
P. O. BOX 3092
HOUSTON, TEXAS 77001

EXXON COMPANY U.S.A.
EXXON BUILDING
MIDLAND, TEXAS 79701

CITIES SERVICE COMPANY
500 W. TEXAS
MIDLAND, TEXAS 79701



ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

F. H. CURRY LEASE
JALMAT GAS ZONE
LEA COUNTY, NEW MEXICO

NET PAY MAP
5% Ø CUTOFF

SCALE 1" = 2000'

By: R. M. MALAISE		Drawn By: BS	Date: 8-79
Date: 9-79		Revised By:	Date: 9-79
Dept: WEST AREA ENGR.		Dwg No:	

F. H. CURRY LEASE
JALMAT GAS ZONE

ISOPACH	PLANIMETER AREA	AREA, ACRES
100	.030	109
100-110	.027	98
110-120	.018	66
120-130	.005	29
130-140	.008	18
	.088	320

.088 = 320 Acres

	V, acre-ft
100 (109	10900
105 (98)	10290
115 (66)	7590
125 (29)	3625
135 (18)	2430
	34835

$$\frac{34835 \text{ acre-ft}}{320 \text{ acre}} = 109 \text{ ft}$$

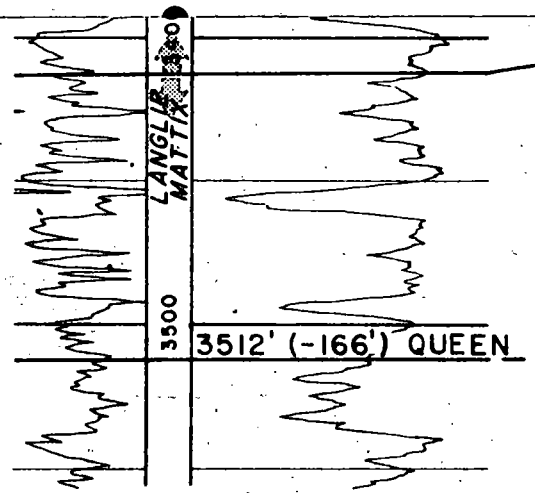
F. H. CURRY LEASE
JALMAT GAS AREA

LEA COUNTY, NEW MEXICO

EAST – WEST CROSS SECTION

W E

JOHN YURONKA
ARCO CRUMP NO. 2
SEC. 1, T 24 S – R 36 E
1650' FSL & 1650' FEL



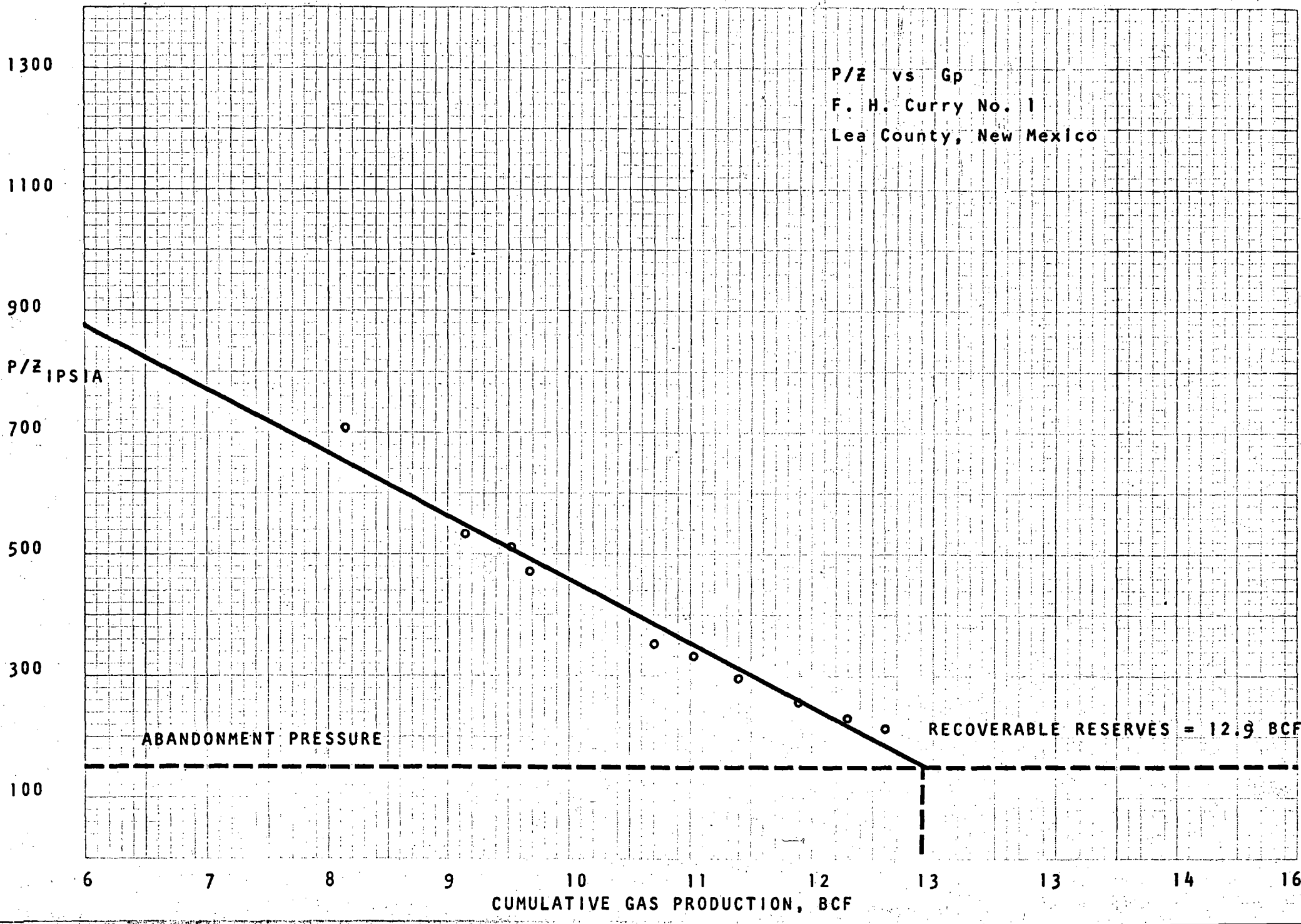
CRUMP NO. 2
TOTAL PAY, FT. 104

SINCLAIR OIL & GAS CO.
E. H. CURRY "WN" NO. 1
SEC. 1, T 24 S – R 36 E
660' FSL & 660' FEL

FRONTIER (1-24-65)
GAMMA RAY—NEUTRON

CURRY NO. 1
TOTAL PAY, FT. 144

NOTE: POROSITY CUTOFF 5%



RESERVE CALCULATIONS
F.H. CURRY No. 1
320 Acre Proration Unit
(Jalmat Gas)
S/2 Section 1-T24S-R36E
Lea County, New Mexico

1. Calculation of Gas
In place by Volumetric Method

$$G = 43560 \times Vb \times \phi \times (1-Sw) \times Bgi$$

Where,

Vb = Acre X Ave Net Pay, Ft. *

= 320 X 109'

= 34880 Ac-ft

ϕ = 14% (Average from available Logs)

Sw = 27.1% (Core analysis)

$$Bgi = 35.35 \frac{P}{z\ T}\ ** \quad \frac{SCF}{Cuft}$$

$$= \frac{(35.35)\ (1400)}{(.806)\ (550)}$$

$$= 111.64 \quad \frac{SCF}{CuFt}$$

Therefore,

$$G = (43560)(34880)(.14)(.729)(111.64)$$

= 17.31 BCF

* See attached isopach map and calculation

** Published in Oil & Gas Fields of Southeast N New Mexico 1956 by Roswell Geological Society

RESERVE CALCULATIONS
F. H. CURRY NO. 1
320 Acre Proration Unit
S/2 Section 1-T24S-R36E
Lea County, New Mexico

II. Calculation of Recoverable Gas on 320 Acre

Assume, Abandonment P/Z = 150 psia

$G = 43560 \times Vb \times \phi \times (1-Sw) \times (Bgi - Bga) =$

where,

$$Bga = \frac{(35.35)(150)}{550}$$

$$= 9.64 \frac{SCF}{ft^3}$$

$G = (43560)(34880)(.14)(.729)(11.64 - 9.64)$

$= 15.82$ BCF

III. Calculation of Unrecoverable Reserves - 320 acre Proration Unit

Recoverable Reserves - Economic Recovery *
To P/Z of 150 psia From Curry No. 1

Unrecoverable Reserves

15.82 BCF - 12.~~80~~ 90 BCF = 2.92 BCF

* See attached P/Z graph and supporting data.

15.82
12.9
2.92

JALMAT GAS AREA
NET PAY
F.H.CURRY LEASE
LEA COUNTY, NEW MEXICO

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY, FT
Vaughn B-1 #1	1650' FNL & 990FEL, Sec. 1-T24S-R36E	CONOCO	10-20-47	Gamma Ray Neutron-Western 12-9-59 2640-3151'	Covered Yates only
Vaughn B-1 #2	1650' FNL & FWL	CONOCO	5-13-48	Lane Wells GR-NL 7-15-65 2806-3622	102'
Vaughn B-1 #3	660' FNL & 1980' FEL Sec.1-T24S-R36E	CONOCO	1-2-50	Lane Wells GR-NL 12-29-49 2600-3607'	115'
Vaughn B-1 #4	660' FNL & 1980'FEL Sec. 1-T24S-R36E	CONOCO	5-9-50	Lane Wells GR-NL 4-4-50 2600-3593'	106'
Vaughn B-1 #5	660' FNL & FWL Sec.1-T24S-R36E	CONOCO	11-19-65	Welex GR-Sonic Surf-3692'	109'
Crump #1	1980' FSL & 660 FEL,Sec 1-T24S-R36E	YURONKA	9-20-72	Welex Density 50-3701	104'
Crump #2	1650' FSL & 660'FEL Sec. 1-T24S-R36E	YURONKA	1-25-73	Welex GR-NL 3400-3718'	Jalmat not Logged
Curry #1	660'FSL & FEL Sec 1-T24S-R36E	ARCO	4-24-38	Frontier GR-NL 2379-3379'	144'
State Z #1	1650' FNL & 990' FEL Sec. 2-T24S-R36E	EXXON	5-29-50	Lane Wells GR-NL 1000-3021'	Covered only Top of Yates
State #1	660' FEL & 1980' FSL Sec. 2-T24S-R36E	GETTY	10-15-49	N/A	N/A
Meyers B-2	660' FEL & 1980' FNL Sec. 2-T24S-R36E	TEX.PAC.	7-18-48	N/A	N/A
Cooper WN #1	1980' FNL & FEL Sec 12-T24S-R36E	ARCO	7-24-40	N/A	N/A

Jalmat Gas Area
Net Pay Data
F.H.Curry Lease
Lea County, NM

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY, FT
Cooper WN #2	1980' FNL & 1980' FWL Sec 12-T24S-R36E	ARCO	10-9-41	N/A	N/A
Cooper WN #3	660' FNL & 1980' FEL Sec 12-T24S-R36E	ARCO	4-21-73	Schlumberger GR-NL 0-3633	128'
Vaughn A-12 #1	1980' FNL & 660 FWL, Sec12-T24S-R36E	CONOCO	2-19-42	Welex GR-NL	120'
Vaughn B-12 #1	1980' FNL & 660 FSL, Sec 12-T24S R36E	CONOCO	7-18-40	N/A	N/A
Meyers B-1	660'FNL & FWL Sec 7-T24S-R36E	AMOCO	8-29-37	N/A	N/A
Jim Camp WN #1	660' FSL & FWL Sec 6-T24S-R36E	AROC	6-13-37	N/A	N/a
Jim Camp WN #2	1980' FNL & 660'FWL Sec 6-T24S-R36E	ARCO	4-4-65	Western GR-NL 1000-3574'	118'
Jim Camp WN #3	660' FNL & 1980' FSL Sec 6-T24S-R36E	ARCO	1-28-55	Western GR-NL 1000-3574'	

PRESSURE HISTORY
F.H. CURRY NO. 1, UNIT P
SECTION 1, T24S, R36E
Lea County, New Mexico

DATE	SHUT IN TIME	SHUT IN PRESSURE	EST BHP* PSIG	$\bar{z}$,avg	EST P/$\bar{z}$	CUMULATIVE GAS PROD MCF
9-24-66	72 hrs	598.2	645.1	.909	709.7	8151248
8-14-69	72 hrs	462.2	497.7	.929	535.7	9151837
8-13-70	72 hrs	440.2	473.9	.933	507.9	9538693
8-19-71	72 hrs	413.2	444.7	.937	474.6	9686127
1972	BAD VALVE					
6-26-73	72 hrs	315.2	338.8	.951	356.3	10710956
6-24-74	72 hrs	298.2	320.5	.954	335.9	11026488
3-14-75	72 hrs	263.2	282.7	.959	294.8	11392313
6-8-76	72 hrs	233.2	250.4	.964	259.7	11940784
7-19-77	72 hrs	209.2	224.6	.968	232.0	12293893
7-17-78	72 hrs	195.2	209.5	.970	215.9	12614442

* $Pws = Pwh \; e^{\frac{.01875 \times SG \times D}{\bar{z}avg \; Tavg}}$

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

August 28, 1979

Oil Conservation Division
of New Mexico Department
of Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T24S, R36E
Lea County, New Mexico

Attention: Mr. R. Stamets

Dear Sir:

Attached you will find a plat which shows typical drainage areas for Jalmat Gas production surrounding the proposed F. H. Curry No. 2 location. Attached also are the calculations used in constructing these typical areas. This information is being forwarded in support of a request for an infill finding concerning the subject well which was made by letter dated August 9, 1979.

Please accept a corrected C-101 and the first page of the letter making the original request. The proposed well is located in Section 1, T24S, R36E, Lea County, New Mexico.

If you need additional information, please advise.

Very truly yours,

R. M. Malaise

RMM:ad

ARCO Oil and Gas Company

Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

August 9, 1979

Oil Conservation Division of
The New Mexico Department of Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T24S, R36E
Lea County, New Mexico

Gentlemen:

ARCO Oil & Gas Company, a Division of the Atlantic Richfield Company, respectively requests administrative approval of a non-standard proration unit (320 acres) and simultaneous dedication of the subject well with the Curry No. 1 which is currently producing as a marginal gas well from the subject field. The non-standard proration unit comprises the south half of Section 1, T24S, R36E. This letter also requests that the Commission issue certification that there is a need for a second well on the previously approved 320-acre non-standard proration unit. This certification is necessary to meet the requirements of the NGPA of 1978 and we request the certification be handled administratively under Commission Order No. R-6013.

The subject well is being recommended at a location of 1980' FWL & 660' FSL in Section 1, T24S, R36E and is proposed to test both the Jalmat (Gas) Pool and the Langlie Mattix (Oil) Pool. It is anticipated that the well will be completed in the Jalmat zone (second well on proration unit) and also the Langlie Mattix.

In accordance to special rules and regulations set forth under Order No. R-6013, the following data is submitted with the request for an infill finding:

1. Copies of Form C-101 and C-1-2 are attached.

2. A completion attempt will be made in the Jalmat Gas Pool which has a standard proration unit size of 640 acres.

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

RECEIVED
AUG 31 1979
OIL CONSERVATION DIVISION
SANTA FE

5A. Indicate Type of Lease: STATE ☐ FEE ☒

5. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well: DRILL ☒ DEEPEN ☐ PLUG BACK ☐

OIL WELL ☒ GAS WELL ☒ OTHER SINGLE ZONE ☐ MULTIPLE ZONE ☐

7. Unit Agreement Name

8. Farm or Lease Name: Frederick H.Curry WN

2. Name of Operator: ARCO Oil & Gas Company, Division of Atlantic Richfield Co.

9. Well No.: 2

3. Address of Operator: P. O. Box 1710 Hobbs, New Mexico 88201

10. Field and Pool, or Wildcat: Jalmat Yates Gas
LAnglie Mattix 7 R Qn

4. Location of Well: UNIT LETTER N LOCATED 1980 FEET FROM THE West LINE AND 660 FEET FROM THE South LINE OF SEC. 1 TWP. 24S RGE. 36E NMPM

12. County: Lea

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
3700'	Yates Gas	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
3340' estimated	GCA #8	Not selected	

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	9-5/8" OD	36# K-55	1200'	675	circ to surface
8-3/4"	8" OD	26# K-55	3700'	1000	circ to surface

Propose to drill an infill development well to effectively and efficiently drain the reserves on existing proration unit.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

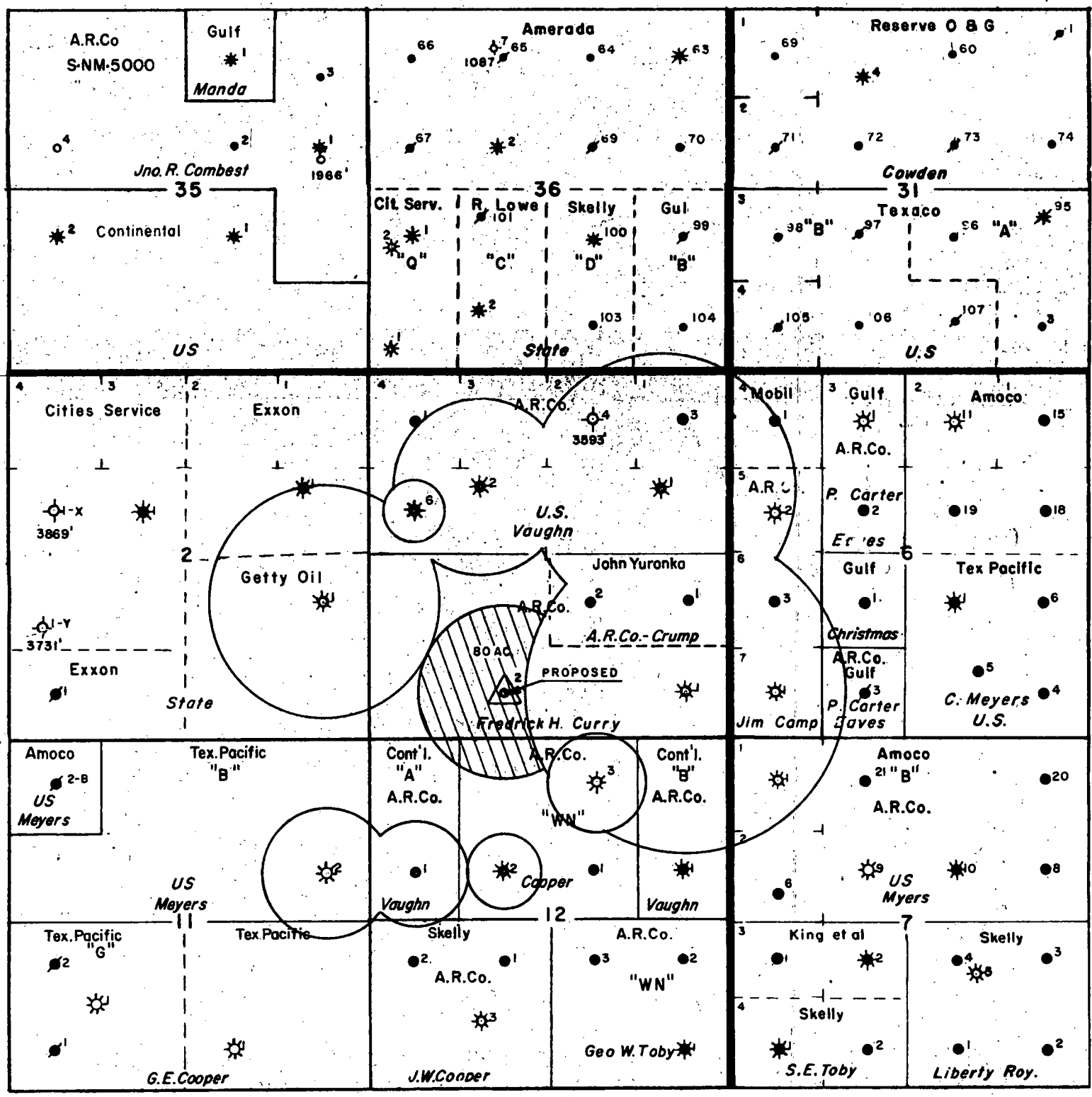
I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Leon Lane By Leon Title Dist Drlg Supt Date August 29, 1979

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:



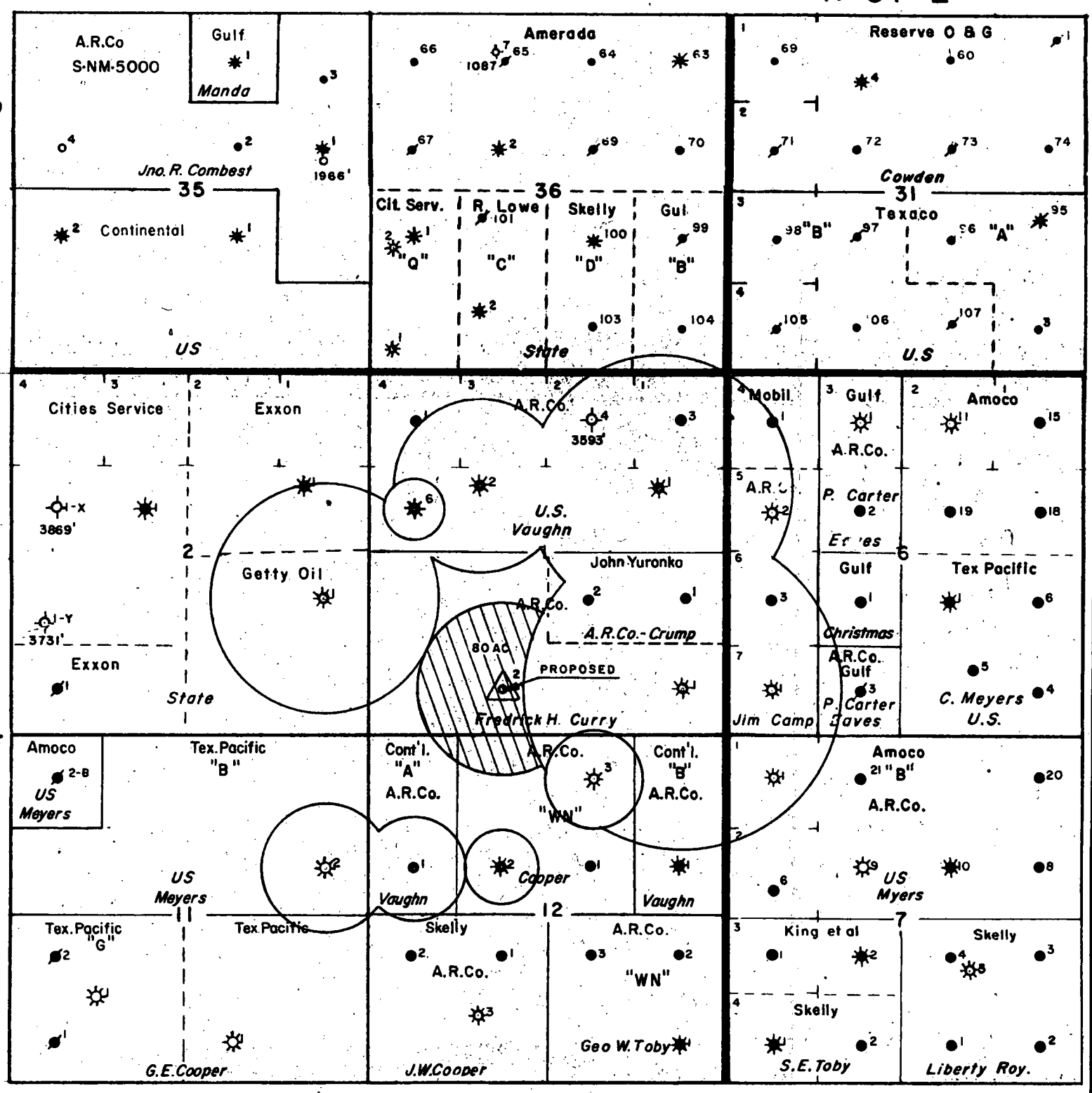
ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

BUBBLE MAP SHOWING DRAINAGE RADII SURROUNDING PROPOSED CURRY NO. 2

LEA COUNTY NEW MEXICO

SCALE 1" = 2000'

By R. M. MALAISE		Drawn By BS	Date 8-79
Date 8-79		Revised By	Date
Dept WEST AREA ENGR.		Dwg No.	



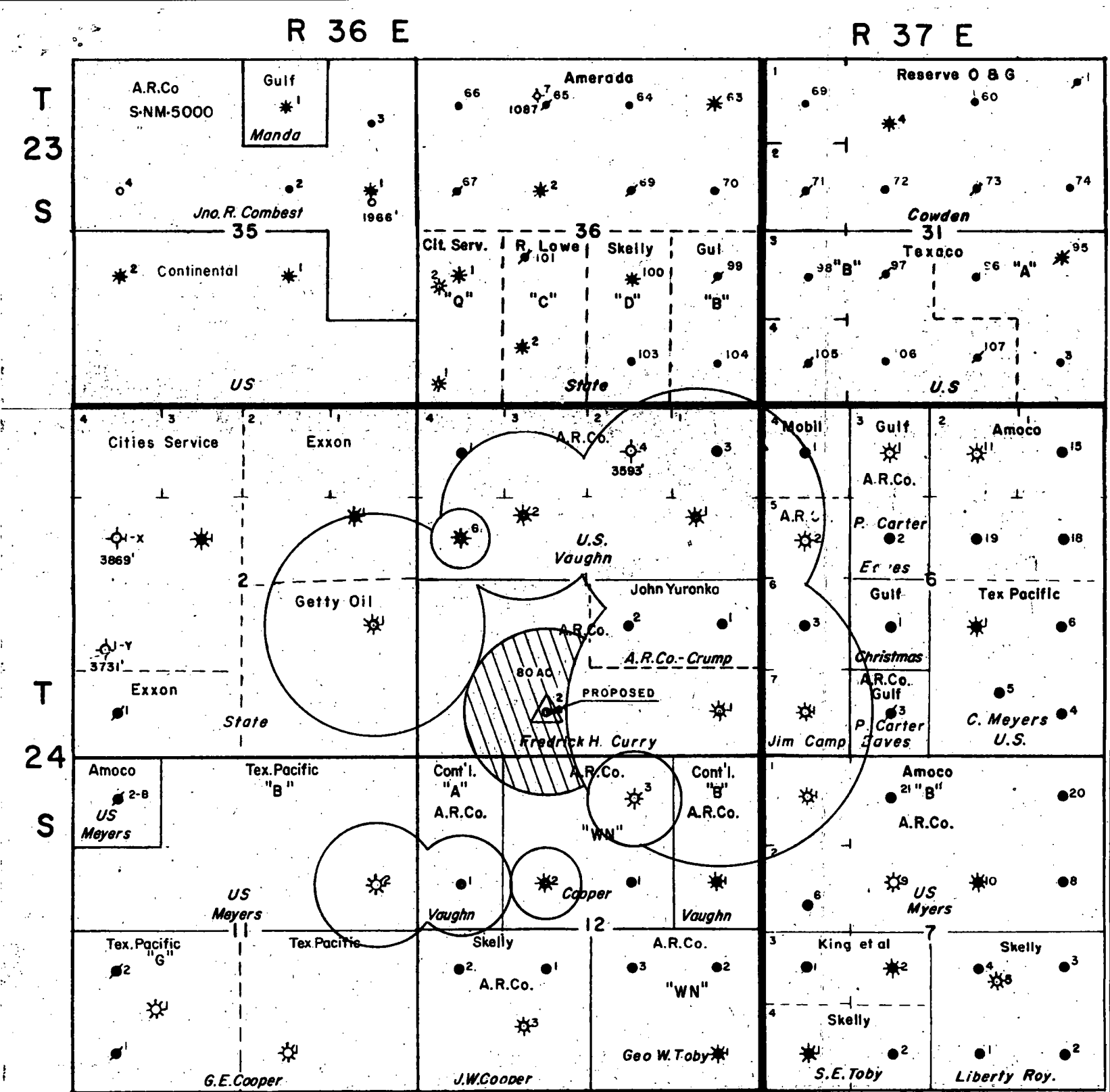
ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

BUBBLE MAP SHOWING DRAINAGE RADII SURROUNDING PROPOSED CURRY NO. 2

LEA COUNTY NEW MEXICO

SCALE 1" = 2000'

By R. M. MALAISE		Drawn By BS	Date 8-79
Date 8 - 79		Revised By	Date
Dept. WEST AREA ENGR.		Dwg No.	



ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

BUBBLE MAP SHOWING DRAINAGE RADII SURROUNDING PROPOSED CURRY NO.2

LEA COUNTY NEW MEXICO

SCALE 1" = 2000'

By R. M. MALAISE		Drawn By BS	Date 8-79
Date 8 - 79		Revised By	Date
Dept WEST AREA ENGR.		Dwg No	

SAMPLE CALCULATIONS RADII OF DRAINAGE AREA
JALMAT PRODUCTION

$Z = 1.0$
$P = 1400$ psi
$P = 250$ psi
$T = 550^{\circ}$ R

$$Bg = 35.35 \frac{P}{TZ} = 35.35 \frac{1400}{550} = 90 \text{ SCF/cuft}$$

$$Bgf = 35.35 \frac{P}{TZ} = 35.35 \frac{250}{550} = 16 \text{ SCF/cuft}$$

$$\Delta Bg = 74 \text{ SCF/cuft}$$

$$\text{Acres Drained} = \frac{\text{(Cum. Gas)}}{(\Delta Bg)(h, ft)(Sg)(\phi)\left(43560 \frac{\text{cuft}}{\text{Acft}}\right)}$$

$$= \frac{\text{Cum Gas}}{(74)(125)(.8)(.1)(43560)}$$

$$= \frac{\text{Cum Gas}}{32,234,400}$$

Vaughn B #1

Cum = 8.07 BCF
Acre = 250 acres
R = 1863 ft.

Vaughn B #6

Cum = .38 BCF
Acre = 11.8 acres
R = 404 ft

State T #1 (Plugged)

Cum = 6.57 BCF
Acre = 204 acres
R = 1681 ft

Meyers #2

Cum = 2.27 BCF
Acre = 70.4 acres
R = 988 ft

Cooper #3

Cum = 1.16 BCF
Acre = 36.0 acres
R = 702 ft

Curry #1

Cum = 12.70 BCF
Acre = 394 acres
R = 2337 ft

Vaughn B #2

Cum = 3.89 BCF (Plugged)
Acre = 121 acres
R = 1294 ft

Vaughn A 12 #1

Cum = 1.4 BCF
Acre = 43.4 acres
R = 776 ft

Cooper #2

Cum = .72 BCF
Acre = 22.4 acres
R = 557 ft.

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

August 9, 1979

Oil Conservation Division of
The New Mexico Department of Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T20S, R36E
Lea County, New Mexico

Gentlemen:

ARCO Oil & Gas Company, a Division of the Atlantic Richfield Company, respectively requests administrative approval of a non-standard proration unit (320 acres) and simultaneous dedication of the subject well with the Curry No. 1 which is currently producing as a marginal gas well from the subject field. The non-standard proration unit comprises the south half of section 1, T24S, R36E. This letter also requests that the Commission issue certification that there is a need for a second well on the previously approved 320-acre non-standard proration unit. This certification is necessarry to meet the requirements of the NGPA of 1978 and we request the certification be handled administratively under Commission Order No. R-6013.

The subject well is being recommended at a location of 1980' FWL & 660' FSL in Section 1, T20S, R36E and is proposed to test both the Jalmat (Gas) Pool and the Langlie Mattix (Oil) Pool. It is anticipated that the well will be completed in the Jalmat zone (second well on proration unit) and also the Langlie Mattix.

In accordance to special rules and regulation set forth under Order No. R-6013, the following data is submitted with the request for an infill finding:

1. Copies of Form C-101 and C-102 are attached.

2. A completion attempt will be made in the Jalmat Gas Pool which has a standard proration unit size of 640 acres.

3. The F.H. Curry No. 1 is currently producing as a marginal well on a 320 acre non-standard proration unit. The proration unit was established under Division Order No. R-2889.

4. The F. H. Curry WN No. 2 has not been spudded.

5. The F. H. Curry No. 1 is the only other well that has been drilled on the subject proration unit.and completed in the Jalmat Gas Pool. This well is located 660' FSL & 660' FEL in Section 1, T24S, R36E, Lea County, New Mexico. The No. 1 well was spudded March 18, 1938 and completed June 1, 1938. The Curry No. 1 produced at an average rate of 670 MCF/D during April, 1979.

6. A structure map on the top of the Yates formation is attached. The proposed location is shown in red.

7. The volume of increased ultimate recovery is anticipated to be 355.8 MMCF. The reserve is based upon the following calculation:

$$\text{Recovery} = (43560\ ft^2/A)(\text{Drainage Area, Acres})(\text{Height ft})(\text{Porosity})(1-Scw)(\Delta Bg) =$$
$$(43560)(80\ \text{acres})(125')(.1)(.7)(11.67) = 355.8\ \text{MMCF}$$

where,

Drainage Area = 80 acres
Net Pay = 125 feet
Average Porosity = 10%
Average Water Saturation = 30%
Bgi-Bg2 = 11.67 SCF/ft = ΔBg
and Bgi at 270 psia = 18.21 SCF/ft^3
Bg2 at 100 psia = 6.54 SCF/ft^3

8. A list of all offset operators is attached. These operators have been sent a copy of this application by certified mail.

9. We have attached the last twelve months production for the F. H. Curry WN No. 1 and the allowable for a normal 320 acre spacing unit. Only one months in the last year did the No. 1 make the allowable. With the additional wellbore, the Curry lease should return to full allowable and will help prevent waste and eliminate unnecessary drainage.

Atlantic Richfield Company believes approval of these requests will be in the interest of conservation, protection of correlative rights, and allow for more complete recovery of Jalmat gas reserves from the subject acreage.

Very truly yours,

R. M. Malaise

R. M. Malaise

RMM:ad

cc: New Mexico Oil Conservation Division
Offset Operators
Horace Burton - Dallas Legal
Phil Tomlinson - Midland
Don Shackelford - Hobbs
George Ricks - Hobbs

LIST OF OFFSET OPERATORS

CONTINENTAL OIL COMPANY
P. O. BOX 460
HOBBS, NEW MEXICO 88240

GETTY OIL COMPANY
P. O. BOX 1231
MIDLAND, TEXAS 79702

MOBIL OIL CORP.
GREENWAY PLAZA
SUITE 2700
HOUSTON, TEXAS 77046

GULF OIL COMPANY
P. O. BOX 1150
MIDLAND, TEXAS 79701

TEXAS PACIFIC
1509 W. WALL
MIDLAND, TEXAS 79701

AMOCO PRODUCTION COMPANY
P. O. BOX 3092
HOUSTON, TEXAS 77001

EXXON COMPANY U.S.A.
EXXON BUILDING
MIDLAND, TEXAS 79701

CITIES SERVICES COMPANY
500 W. TEXAS
MIDLAND, TEXAS 79701

JALMAT GAS POOL

F. H. CURRY NO.1

PRODUCTION vs ALLOWABLE

Curry No. 1

	Monthly Gas Production			Jalmat Gas Non-Marginal Allowable, 320 Acres - MCF
	MCF	AF	STATUS	
May , 1979	17582	2.0	M	33195
April, 1979	20796	2.0	M	44904
March, 1979	21603	2.0	M	51117
Feb., 1979	21149	2.0	M	46170
Jan., 1979	22284	2.0	M	36121
Dec., 1978	21731	2.0	M	33949
Nov., 1978	23955	2.0	M	31560
Oct., 1978	22245	2.0	M	24602
Sept., 1978	20906	2.0	M	23273
Aug., 1978	22500	2.0	M	23954
July, 1978	21522	2.0	M	22929
June, 1978	26507	2.0	M	23940

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

5A. Indicate Type of Lease STATE ☐ FEE ☒

5. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well
DRILL ☒ DEEPEN ☐ PLUG BACK ☐
OIL WELL ☒ GAS WELL ☒ OTHER SINGLE ZONE ☐ MULTIPLE ZONE ☐

7. Unit Agreement Name

8. Farm or Lease Name
Frederick H.Curry WN

2. Name of Operator
ARCO Oil & Gas Company, Division of Atlantic Richfield Co.

9. Well No.
2

3. Address of Operator
P. O. Box 1710 Hobbs, New Mexico 88201

10. Field and Pool, or Wildcat
Jalmat Yates Gas
Langlie Mattix 7 R Qn

4. Location of Well UNIT LETTER N LOCATED 1980 FEET FROM THE West LINE
AND 660 FEET FROM THE South LINE OF SEC. 1 TWP. 25 RGE. 36E NMPM

12. County
Lea

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
3700'	Yates Gas	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
3340' Estimated	GCA #8	Not selected	

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	9-5/8" OD	36# K-55	1200'	675	Circ to surface
8-3/4"	7" OD	26# K-55	3700'	1000	Circ to surface

Propose to drill an infill development well to effectively and efficiently drain the reserves on existing proration unit.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Leroy Lane by [illegible] Title Dist Drlg Supt. Date 8/9/79

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
ARCO Oil & Gas Company	F. H. Curry WN	2

Unit Letter	Section	Township	Range	County
N	1	24S	36E	Lea

Actual Footage Location of Well:
660 feet from the south line and 1980' feet from the west line

Ground Level Elev:	Producing Formation	Pool	Dedicated Acreage:
	Yates-7 Rivers	Jalmat	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

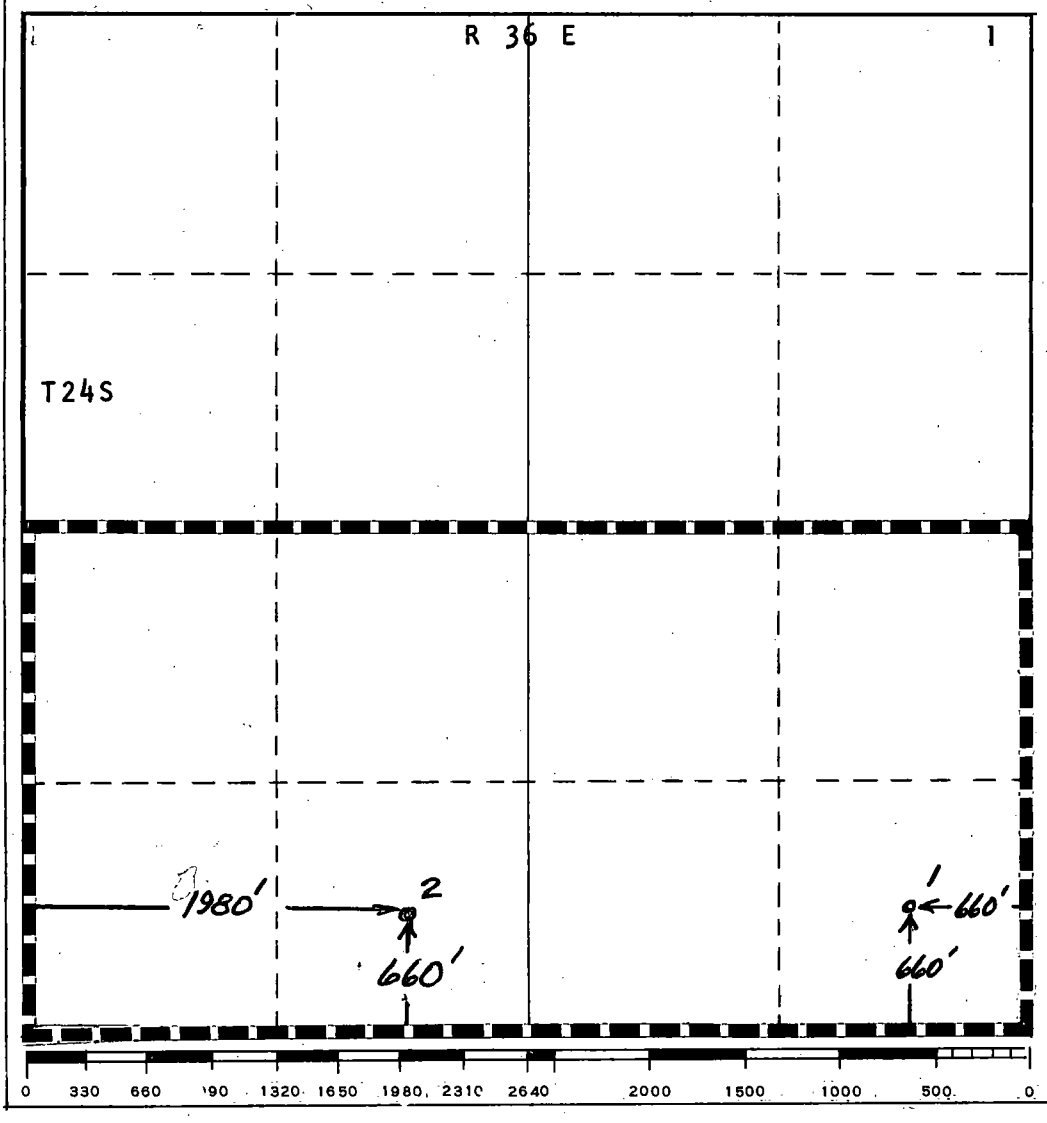
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Robert D Malone

Name

Position
PETROLEUM ENGINEER

Company
ARCO OIL AND GAS COMPANY

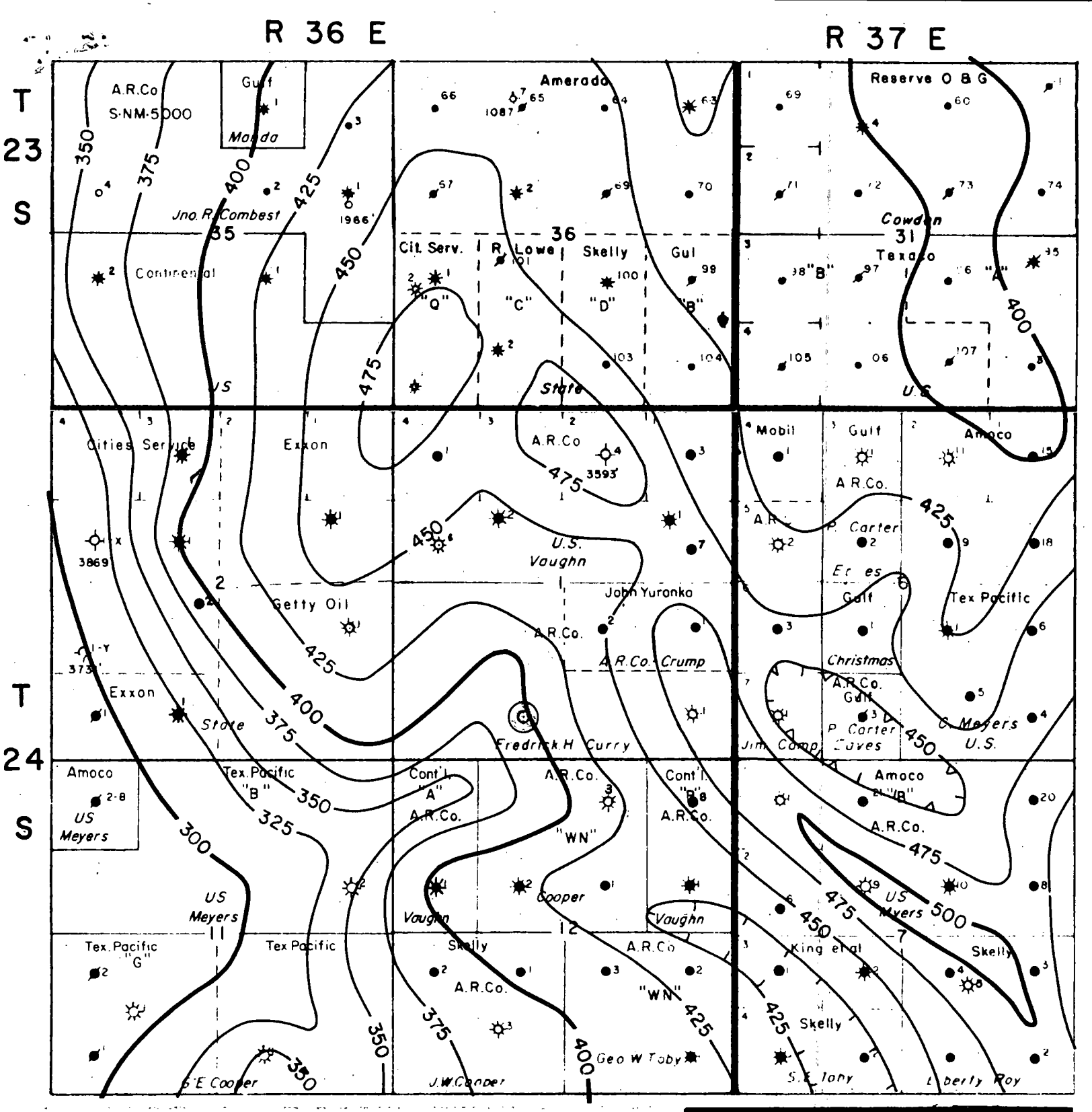
Date
Aug. 10 1979

I hereby certify that the well location shown on this plat 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

Registered Professional Engineer and/or Land Surveyor

Certificate No.



ARCO Oil and Gas Company

Division of Atlantic Richfield Company

Permian District Midland, Texas

LEA COUNTY, NEW MEXICO

STRUCTURE

TOP OF YATES

C.I.: 25'

SCALE 1" = 2000'

By V. CAWVEY		Drawn By	Date 3 - 79
Date 5 - 79		Revised By glf	Date 5-79
Dept WEST AREA ENGR.		Dwg No	

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

September 20, 1979

Oil Conservation Division
of New Mexico Department of
Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T24S, R36E
Lea County, New Mexico

Attention: Mr. R. Stamets

In support of our original request on August 9, 1979 for an infill finding under Order R-6013 we submit the following evidence. The volume of increased ultimate recovery from the drilling of the subject well is estimated to be 2.92 BCF. The reserve calculations and supporting data are attached.

Included with this letter are the following:

(1) Isopach map of Jalmat Gas zone plus calculations of average net pay.

(2) East-West cross-section of Jalmat zone on S/2 section 1 - 320 acre proration unit. Section shows net pay on logs.

(3) P/Z vs Gp plot of recoverable reserves for F.H.Curry No. 1. Also, data sheet from which plot was drawn.

(4) Summary of the Reserve Calculation.

(5) Summary sheet of wells used in Isopach map.

Please accept this additional information in support of our original request. If you need additional information, please advise.

Sincerely,

R. M. Malaise

R. M. Malaise

RMM:ad

cc: Offset Operators
George Ricks - Hobbs
Phil Tomlinson - Midland

LIST OF OFFSET OPERATORS

CONTINENTAL OIL COMPANY
P. O. BOX 460
HOBBS, NEW MEXICO 88240

GETTY OIL COMPANY
P. O. BOX 1231
MIDLAND, TEXAS 79702

MOBIL OIL CORP.
GREENWAY PLAZA
SUITE 2700
HOUSTON, TEXAS 77046

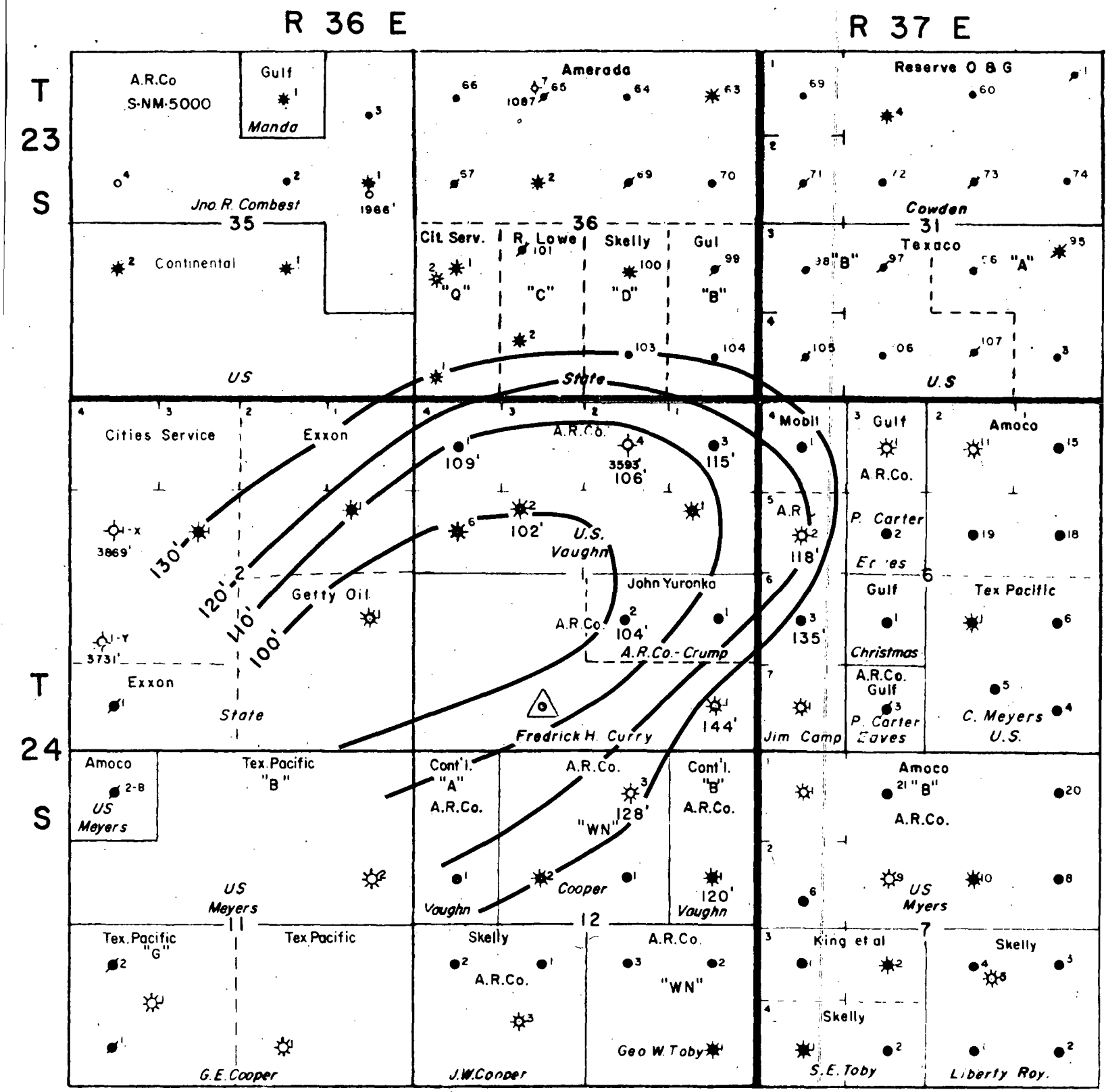
GULF OIL COMPANY
P. O. BOX 1150
MIDLAND, TEXAS 79701

TEXAS PACIFIC
1509 W. WALL
MIDLAND, TEXAS 79701

AMOCO PRODUCTION COMPANY
P. O. BOX 3092
HOUSTON, TEXAS 77001

EXXON COMPANY U.S.A.
EXXON BUILDING
MIDLAND, TEXAS 79701

CITIES SERVICE COMPANY
500 W. TEXAS
MIDLAND, TEXAS 79701



ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

F. H. CURRY LEASE
JALMAT GAS ZONE
LEA COUNTY, NEW MEXICO

NET PAY MAP
5% ø CUTOFF

SCALE 1" = 2000'

By R. M. MALAISE		Drawn By BS	Date 8-79
Date 9-79		Revised By	Date 9-79
Dept WEST AREA ENGR.		Dwg No	

F. H. CURRY LEASE
JALMAT GAS ZONE

ISOPACH	PLANIMETER AREA	AREA, ACRES
100	.030	109
100-110	.027	98
110-120	.018	66
120-130	.005	29
130-140	.008	18
	.088	320

.088 = 320 Acres

	V, acre-ft
100 (109	10900
105 (98)	10290
115 (66)	7590
125 (29)	3625
135 (18)	2430
	34835

$$\frac{34835 \text{ acre-ft}}{320 \text{ acre}} = 109 \text{ ft}$$

F. H. CURRY LEASE
JALMAT GAS AREA

LEA COUNTY, NEW MEXICO

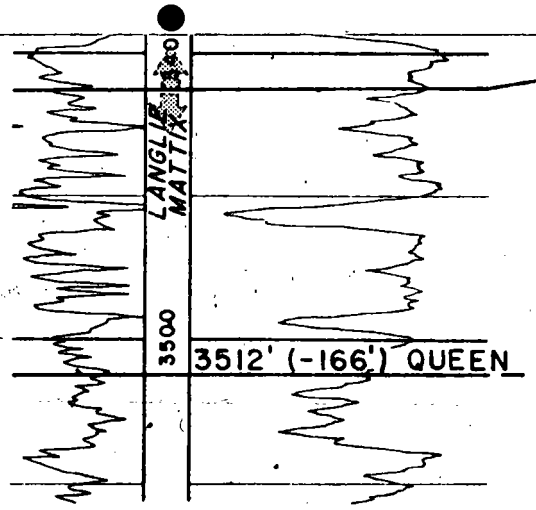
EAST – WEST CROSS SECTION

W E

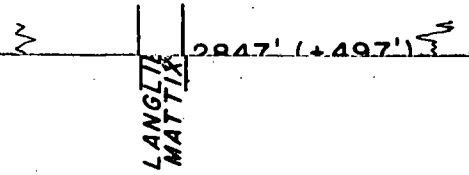
JOHN YURONKA
ARCO CRUMP NO. 2
SEC. 1, T 24 S – R 36 E
1650' FSL & 1650' FEL

SINCLAIR OIL & GAS CO.
E. H. CURRY "WN" NO. 1
SEC. 1, T 24 S – R 36 E
660' FSL & 660' FEL

FRONTIER (1-24-65)
GAMMA RAY—NEUTRON

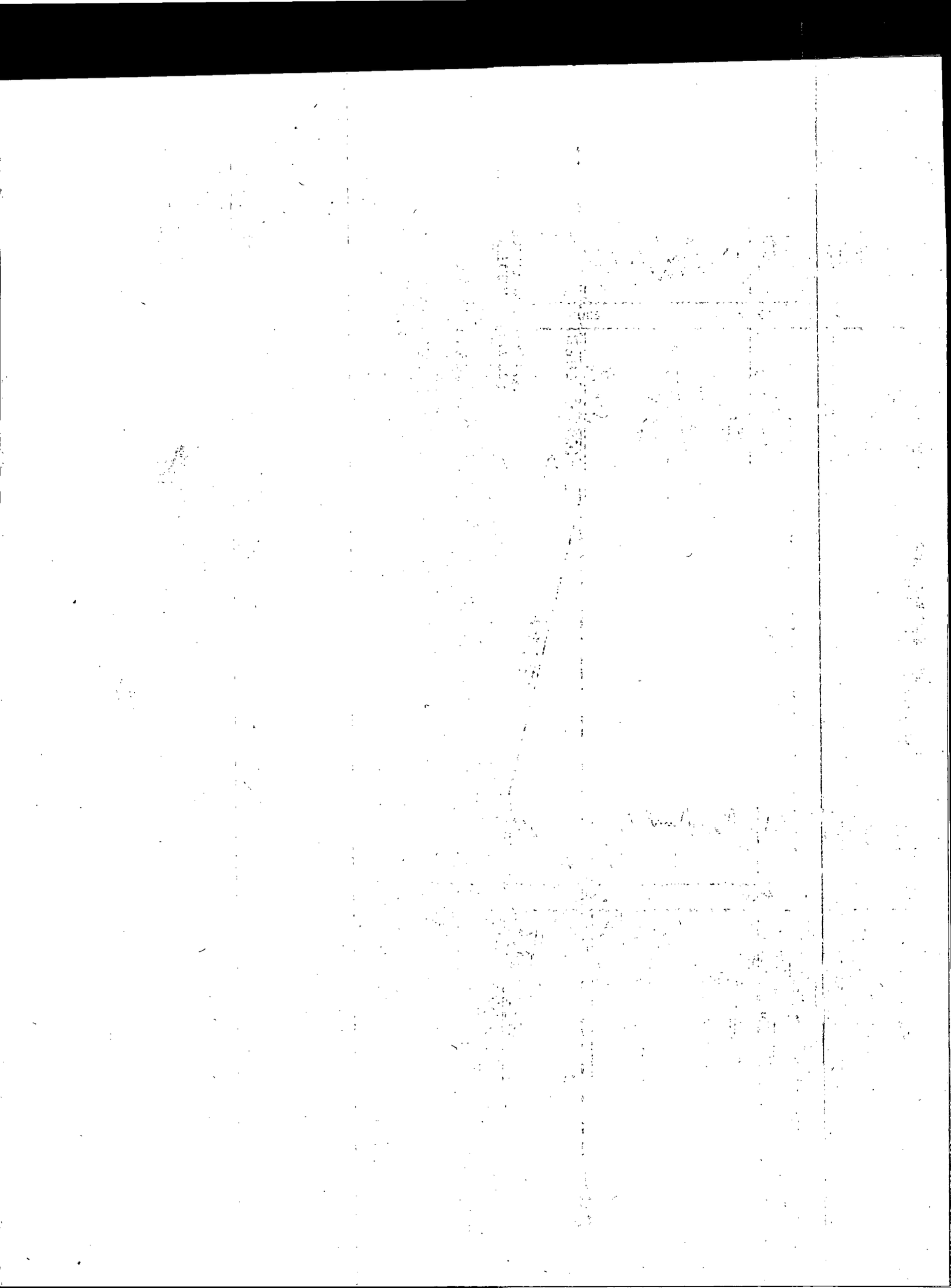


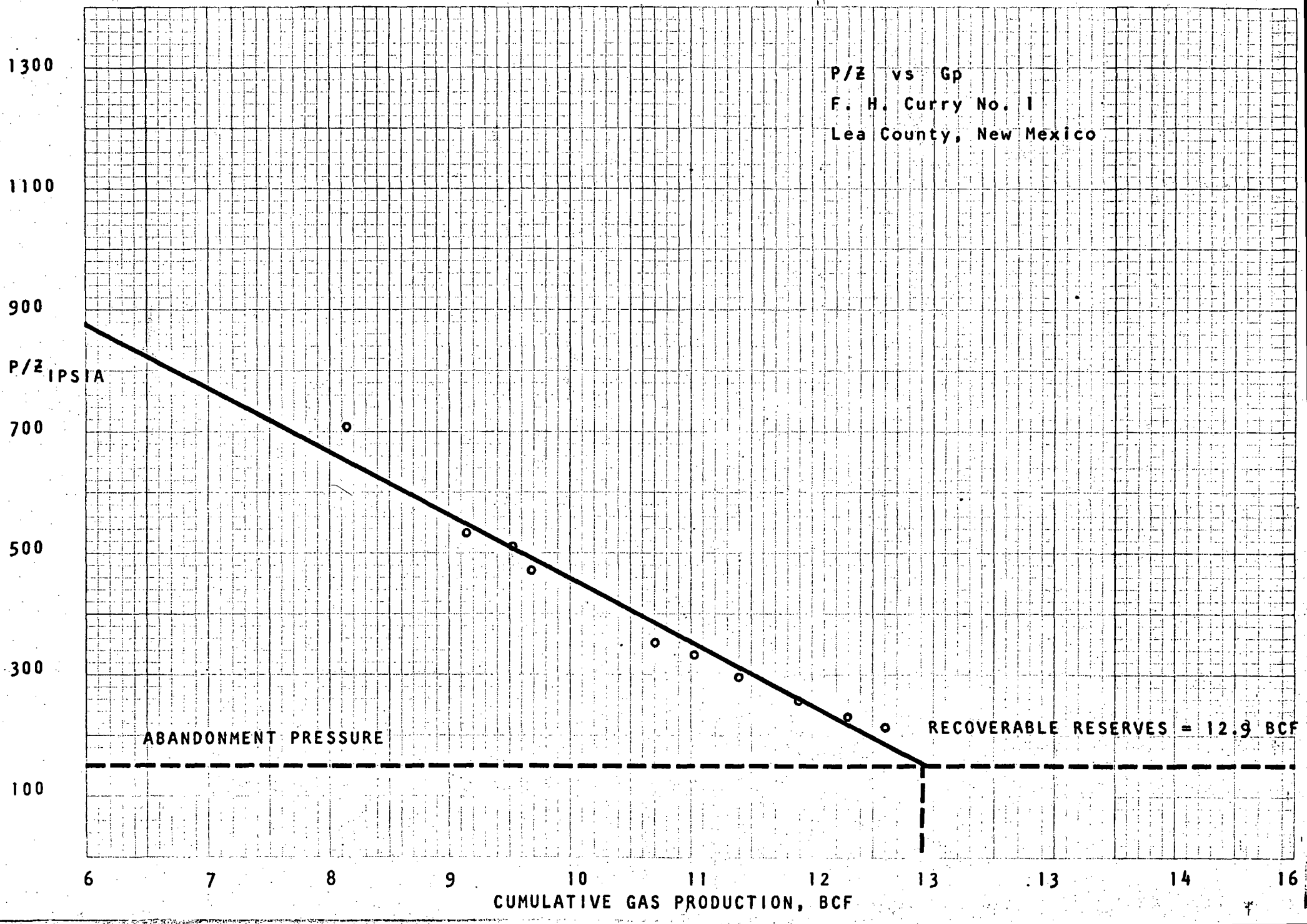
CRUMP NO. 2
TOTAL PAY, FT. 104



CURRY NO. 1
TOTAL PAY, FT. 144

NOTE: POROSITY CUTOFF 5%





RESERVE CALCULATIONS
F.H. CURRY No. 1
320 Acre Proration Unit
(Jalmat Gas)
S/2 Section 1-T24S-R36E
Lea County, New Mexico

1. Calculation of Gas
In place by Volumetric Method

$$G = 43560 \times Vb \times \phi \times (1-Sw) \times Bgi$$

Where,

Vb = Acre X Ave Net Pay, Ft. *

= 320 X 109'

= 34880 Ac-ft

ϕ = 14% (Average from available Logs)

Sw = 27.1% (Core analysis)

$$Bgi = 35.35 \frac{P}{z\,T}\ ** \quad \frac{SCF}{Cuft}$$

$$= \frac{(35.35)\ (1400)}{(.806)\ (550)}$$

$$= 111.64 \quad \frac{SCF}{CuFt}$$

Therefore,

$$G = (43560)(34880)(.14)(.729)(111.64)$$

= 17.31 BCF

* See attached isopach map and calculation

** Published in Oil & Gas Fields of Southeast N New Mexico 1956 by Roswell Geological Society

RESERVE CALCULATIONS
F. H. CURRY NO. 1
320 Acre Proration Unit
S/2 Section 1-T24S-R36E
Lea County, New Mexico

II. Calculation of Recoverable Gas on 320 Acre

Assume, Abandonment P/Z = 150 psia

$G = 43560 \times Vb \times \emptyset \times (1-Sw) \times (Bgi - Bga) =$

where,

$$Bga = \frac{(35.35)(150)}{550}$$

$$= 9.64 \ \frac{SCF}{ft^3}$$

$G = (43560)(34880)(.14)(.729)(11.64 - 9.64)$

$= 15.82$ BCF

III. Calculation of Unrecoverable Reserves - 320 acre Proration Unit

Recoverable Reserves - Economic Recovery * To P/Z of 150 psia From Curry No. 1

Unrecoverable Reserves

15.82 BCF - 12.90 BCF = 2.92 BCF

* See attached P/Z graph and supporting data.

JALMAT GAS AREA
NET PAY
F.H.CURRY LEASE
LEA COUNTY, NEW MEXICO

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY,FT
Vaughn B-1 #1	1650' FNL & 990FEL, Sec. 1-T24S-R36E	CONOCO	10-20-47	Gamma Ray Neutron-Western 12-9-59 2640-3151'	Covered Yates only
Vaughn B-1 #2	1650' FNL & FWL	CONOCO	5-13-48	Lane Wells GR-NL 7-15-65 2806-3622	102'
Vaughn B-1 #3	660' FNL & 1980' FEL Sec.1-T24S-R36E	CONOCO	1-2-50	Lane Wells GR-NL 12-29-49 2600-3607'	115'
Vaughn B-1 #4	660' FNL & 1980'FEL Sec. 1-T24S-R36E	CONOCO	5-9-50	Lane Wells GR-NL 4-4-50 2600-3593'	106'
Vaughn B-1 #5	660' FNL & FWL Sec.1-T24S-R36E	CONOCO	11-19-65	Welex GR-Sonic Surf-3692'	109'
Crump #1	1980' FSL & 660 FEL,Sec 1-T24S-R36E	YURONKA	9-20-72	Welex Density 50-3701	104'
Crump #2	1650' FSL & 660'FEL Sec. 1-T24S-R36E	YURONKA	1-25-73	Welex GR-NL 3400-3718'	Jalmat not Logged
Curry #1	660'FSL & FEL Sec 1-T24S-R36E	ARCO	4-24-38	Frontier GR-NL 2379-3379'	144'
State Z #1	1650' FNL & 990' FEL Sec. 2-T24S-R36E	EXXON	5-29-50	Lane Wells GR-NL 1000-3021'	Covered only Top of Yates
State #1	660' FEL & 1980' FSL Sec. 2-T24S-R36E	GETTY	10-15-49	N/A	N/A
Meyers B-2	660' FEL & 1980' FNL Sec. 2-T24S-R36E	TEX.PAC.	7-18-48	N/A	N/A
Cooper WN #1	1980' FNL & FEL Sec 12-T24S-R36E	ARCO	7-24-40	N/A	N/A

Jalmat Gas Area
Net Pay Data
F.H.Curry Lease
Lea County, NM

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY,FT
Cooper WN #2	1980' FNL & 1980' FWL Sec 12-T24S-R36E	ARCO	10-9-41	N/A	N/A
Cooper WN #3	660' FNL & 1980' FEL Sec 12-T24S-R36E	ARCO	4-21-73	Schlumberger GR-NL 0-3633	128'
Vaughn A-12 #1	1980' FNL & 660 FWL,Sec12-T24S-R36E	CONOCO	2-19-42	Welex GR-NL	120'
Vaughn B-12 #1	1980' FNL & 660 FSL,Sec 12-T24S R36E	CONOCO	7-18-40	N/A	N/A
Meyers B-1	660'FNL & FWL Sec 7-T24S-R36E	AMOCO	8-29-37	N/A	N/A
Jim Camp WN #1	660' FSL & FWL Sec 6-T24S-R36E	AROC	6-13-37	N/A	N/a
Jim Camp WN #2	1980' FNL & 660'FWL Sec 6-T24S-R36E	ARCO	4-4-65	Western GR-NL 1000-3574'	118'
Jim Camp WN #3	660' FNL & 1980' FSL Sec 6-T24S-R36E	ARCO	1-28-55	Western GR-NL 1000-3574'	

PRESSURE HISTORY
F.H. CURRY NO. 1, UNIT P
SECTION 1, T24S, R36E
Lea County, New Mexico

DATE	SHUT IN TIME	SHUT IN PRESSURE	EST BHP* PSIG	Z,avg	EST P/Z	CUMULATIVE GAS PROD MCF
9-24-66	72 hrs	598.2	645.1	.909	709.7	8151248
8-14-69	72 hrs	462.2	497.7	.929	535.7	9151837
8-13-70	72 hrs	440.2	473.9	.933	507.9	9538693
8-19-71	72 hrs	413.2	444.7	.937	474.6	9686127
1972	BAD VALVE					
6-26-73	72 hrs	315.2	338.8	.951	356.3	10710956
6-24-74	72 hrs	298.2	320.5	.954	335.9	11026488
3-14-75	72 hrs	263.2	282.7	.959	294.8	11392313
6-8-76	72 hrs	233.2	250.4	.964	259.7	11940784
7-19-77	72 hrs	209.2	224.6	.968	232.0	12293893
7-17-78	72 hrs	195.2	209.5	.970	215.9	12614442

* $Pws = Pwh \; e^{\frac{.01875 \times SG \times D}{Zavg \; Tavg}}$

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0100

September 20, 1979

Oil Conservation Division
of New Mexico Department of
Energy & Minerals
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Frederick Curry WN #2
Non-Standard Proration Unit
Jalmat Tansil Yates Seven Rivers Gas Pool
1980' FWL & 660' FSL
Section 1, T24S, R36E
Lea County, New Mexico

Attention: Mr. R. Stamets

In support of our original request on August 9, 1979 for an infill finding under Order R-6013 we submit the following evidence. The volume of increased ultimate recovery from the drilling of the subject well is estimated to be 2.92 BCF. The reserve calculations and supporting data are attached.

Included with this letter are the following:

(1) Isopach map of Jalmat Gas zone plus calculations of average net pay.

(2) East-West cross-section of Jalmat zone on S/2 section 1 - 320 acre proration unit. Section shows net pay on logs.

(3) P/Z vs Gp plot of recoverable reserves for F.H.Curry No. 1. Also, data sheet from which plot was drawn.

(4) Summary of the Reserve Calculation.

(5) Summary sheet of wells used in Isopach map.

Please accept this additional information in support of our original request. If you need additional information, please advise.

Sincerely,

R. M. Malaise

R. M. Malaise

RMM:ad

cc: Offset Operators
George Ricks - Hobbs
Phil Tomlinson - Midland

LIST OF OFFSET OPERATORS

CONTINENTAL OIL COMPANY
P. O. BOX 460
HOBBS, NEW MEXICO 88240

GETTY OIL COMPANY
P. O. BOX 1231
MIDLAND, TEXAS 79702

MOBIL OIL CORP.
GREENWAY PLAZA
SUITE 2700
HOUSTON, TEXAS 77046

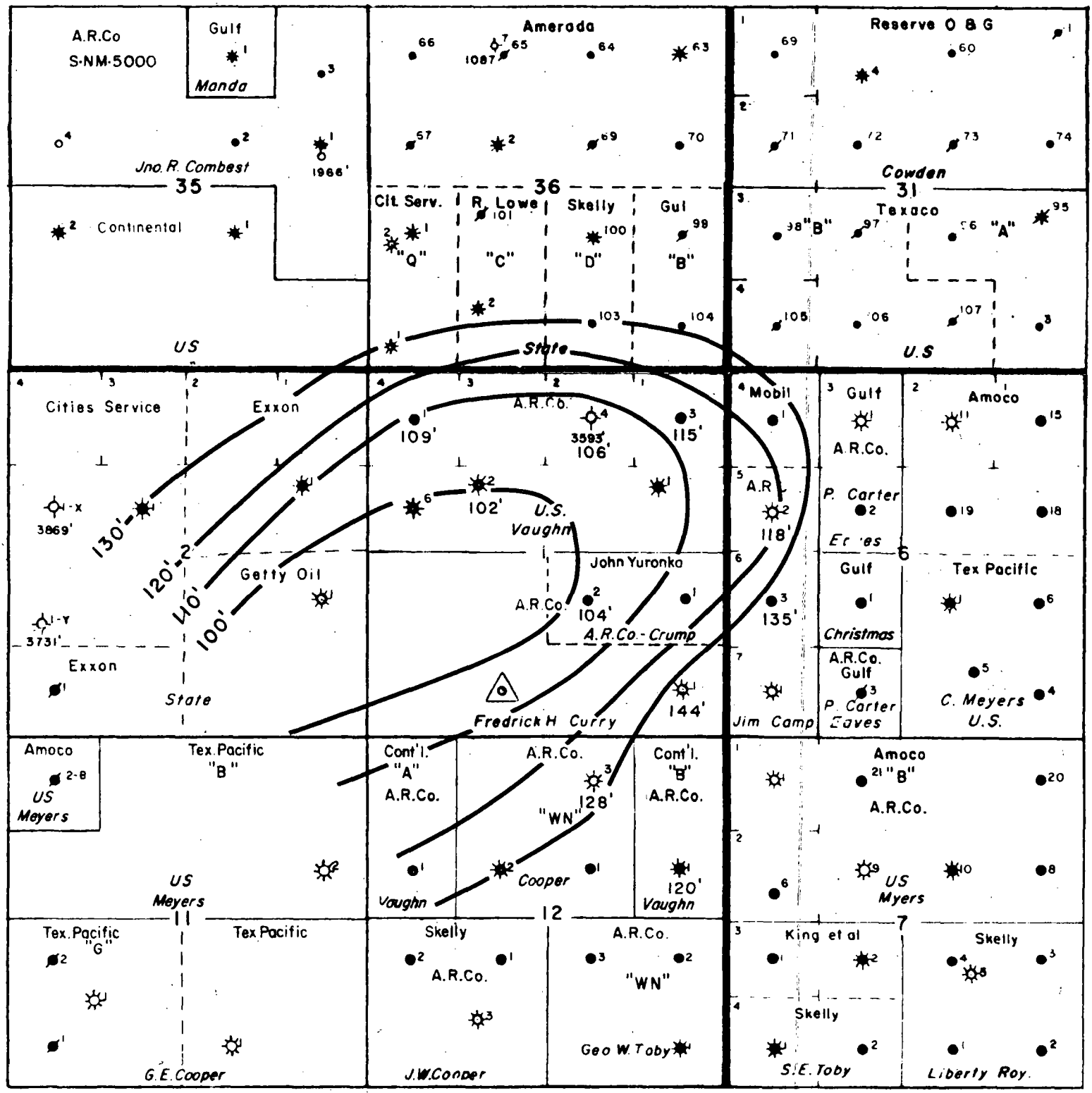
GULF OIL COMPANY
P. O. BOX 1150
MIDLAND, TEXAS 79701

TEXAS PACIFIC
1509 W. WALL
MIDLAND, TEXAS 79701

AMOCO PRODUCTION COMPANY
P. O. BOX 3092
HOUSTON, TEXAS 77001

EXXON COMPANY U.S.A.
EXXON BUILDING
MIDLAND, TEXAS 79701

CITIES SERVICE COMPANY
500 W. TEXAS
MIDLAND, TEXAS 79701



ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

F. H. CURRY LEASE
JALMAT GAS ZONE
LEA COUNTY, NEW MEXICO

NET PAY MAP
5% ø CUTOFF

SCALE 1" = 2000'

By R. M. MALAISE		Drawn By BS	Date 8-79
Date 9-79		Revised By	Date 9-79
Dept WEST AREA ENGR.		Dwg No	

F. H. CURRY LEASE
JALMAT GAS ZONE

ISOPACH	PLANIMETER AREA	AREA, ACRES
100	.030	109
100-110	.027	98
110-120	.018	66
120-130	.005	29
130-140	.008	18
	.088	320

.088 = 320 Acres

	V, acre-ft
100 (109	10900
105 (98)	10290
115 (66)	7590
125 (29)	3625
135 (18)	2430
	34835

$$\frac{34835 \text{ acre-ft}}{320 \text{ acre}} = 109 \text{ ft}$$

F. H. CURRY LEASE
JALMAT GAS AREA

LEA COUNTY, NEW MEXICO

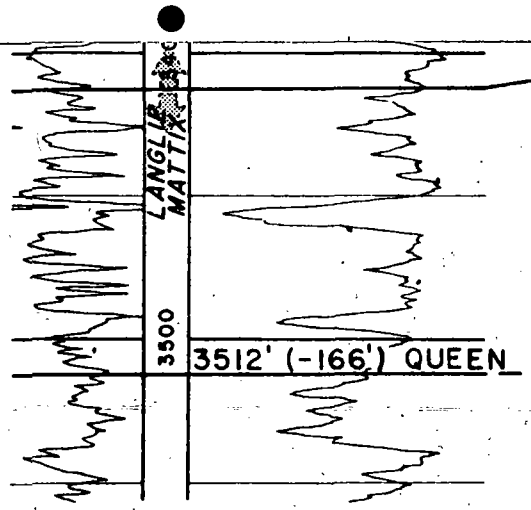
EAST – WEST CROSS SECTION

W E

JOHN YURONKA
ARCO CRUMP NO. 2
SEC. 1, T 24 S – R 36 E
1650' FSL & 1650' FEL

SINCLAIR OIL & GAS CO.
E. H. CURRY "WN" NO. 1
SEC. 1, T 24 S – R 36 E
660' FSL & 660' FEL

FRONTIER (1-24-65)
GAMMA RAY—NEUTRON



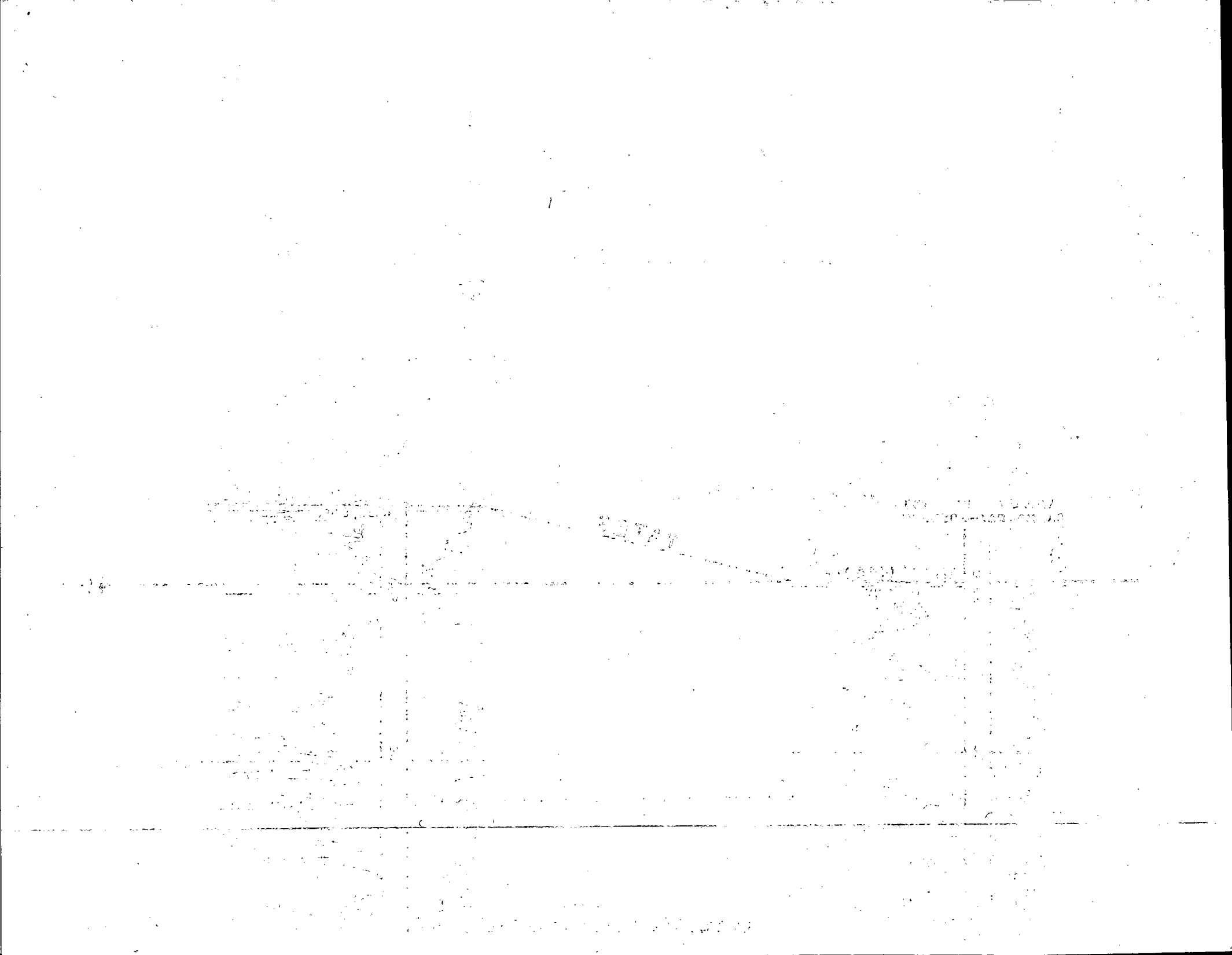
2847' (+497')

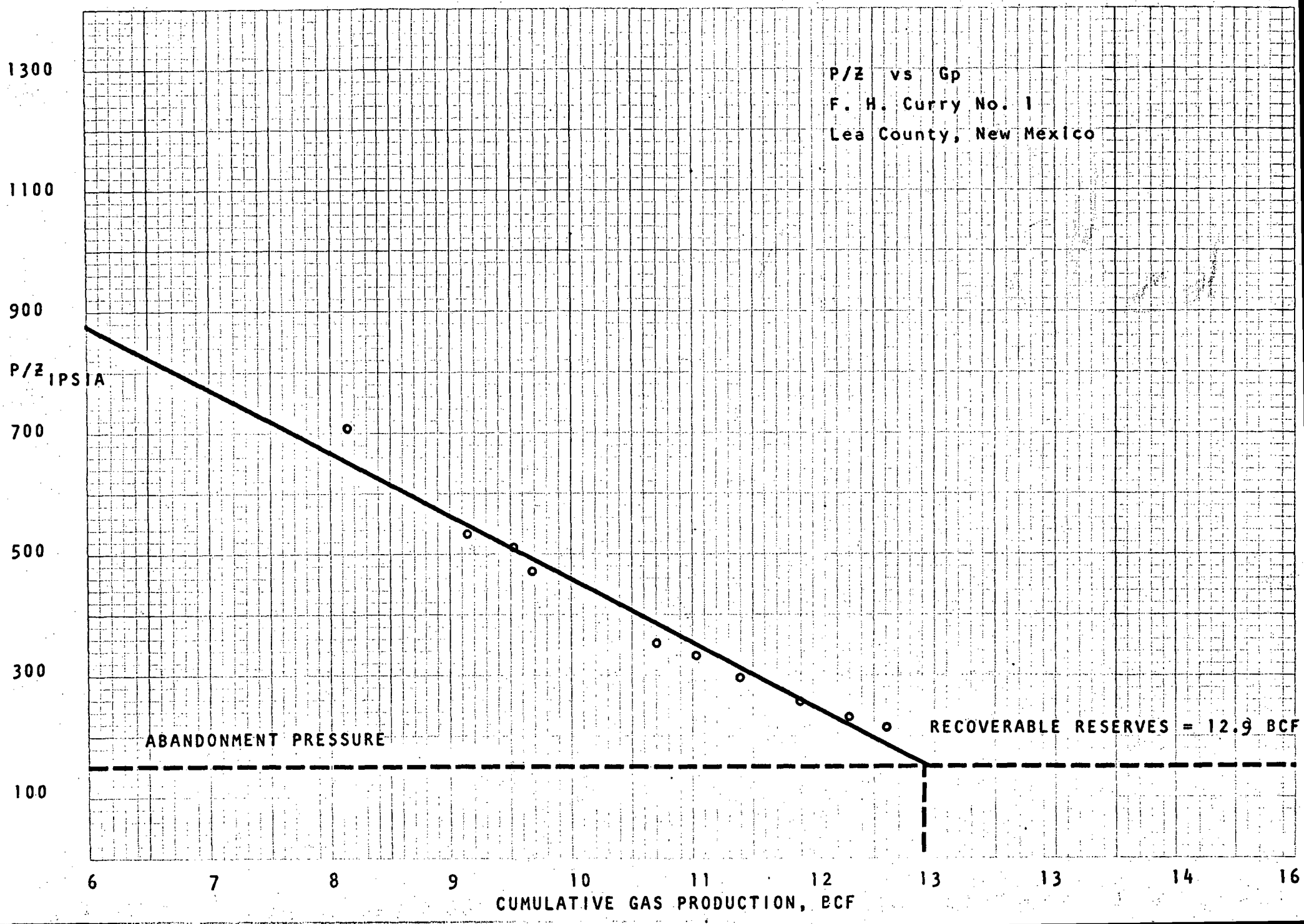
LANGLIE MATTIX

CRUMP NO. 2
TOTAL PAY, FT. 104

CURRY NO. 1
TOTAL PAY, FT. 144

NOTE: POROSITY CUTOFF 5%





RESERVE CALCULATIONS
F.H. CURRY No. 1
320 Acre Proration Unit
(Jalmat Gas)
S/2 Section 1-T24S-R36E
Lea County, New Mexico

1. Calculation of Gas
In place by Volumetric Method

$$G = 43560 \times Vb \times \phi \times (1-Sw) \times Bgi$$

Where,

Vb = Acre X Ave Net Pay, Ft. *

= 320 X 109'

= 34880 Ac-ft

ϕ = 14% (Average from available Logs)

Sw = 27.1% (Core analysis)

$$Bgi = 35.35 \frac{P}{z\ T}\ ** \quad \frac{SCF}{Cuft}$$

$$= \frac{(35.35)\ (1400)}{(.806)\ (550)}$$

$$= 111.64 \quad \frac{SCF}{CuFt}$$

Therefore,

$$G = (43560)(34880)(.14)(.729)(111.64)$$

= 17.31 BCF

* See attached isopach map and calculation

** Published in Oil & Gas Fields of Southeast N New Mexico 1956 by Roswell Geological Society

RESERVE CALCULATIONS
F. H. CURRY NO. 1
320 Acre Proration Unit
S/2 Section 1-T24S-R36E
Lea County, New Mexico

II. Calculation of Recoverable Gas on 320 Acre

Assume, Abandonment P/Z = 150 psia

$G = 43560 \times Vb \times \emptyset \times (1-Sw) \times (Bgi - Bga) =$

where,

$$Bga = \frac{(35.35)(150)}{550}$$

$$= 9.64 \ \frac{SCF}{ft3}$$

$G = (43560)(34880)(.14)(.729)(11.64 - 9.64)$

$= 15.82$ BCF

III. Calculation of Unrecoverable Reserves - 320 acre Proration Unit

Recoverable Reserves - Economic Recovery * To P/Z of 150 psia From Curry No. 1

Unrecoverable Reserves

15.82 BCF - 12.90 BCF = 2.92 BCF

* See attached P/Z graph and supporting data.

JALMAT GAS AREA
NET PAY
F.H.CURRY LEASE
LEA COUNTY, NEW MEXICO

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY,FT
Vaughn B-1 #1	1650' FNL & 990FEL, Sec. 1-T24S-R36E	CONOCO	10-20-47	Gamma Ray Neutron-Western 12-9-59 2640-3151'	Covered Yates only
Vaughn B-1 #2	1650' FNL & FWL	CONOCO	5-13-48	Lane Wells GR-NL 7-15-65 2806-3622	102'
Vaughn B-1 #3	660' FNL & 1980' FEL Sec.1-T24S-R36E	CONOCO	1-2-50	Lane Wells GR-NL 12-29-49 2600-3607'	115'
Vaughn B-1 #4	660' FNL & 1980'FEL Sec. 1-T24S-R36E	CONOCO	5-9-50	Lane Wells GR-NL 4-4-50 2600-3593'	106'
Vaughn B-1 #5	660' FNL & FWL Sec.1-T24S-R36E	CONOCO	11-19-65	Welex GR-Sonic Surf-3692'	109'
Crump #1	1980' FSL & 660 FEL,Sec 1-T24S-R36E	YURONKA	9-20-72	Welex Density 50-3701	104'
Crump #2	1650' FSL & 660'FEL Sec. 1-T24S-R36E	YURONKA	1-25-73	Welex GR-NL 3400-3718'	Jalmat not Logged
Curry #1	660'FSL & FEL Sec 1-T24S-R36E	ARCO	4-24-38	Frontier GR-NL 2379-3379'	144'
State Z #1	1650' FNL & 990' FEL Sec. 2-T24S-R36E	EXXON	5-29-50	Lane Wells GR-NL 1000-3021'	Covered only Top of Yates
State #1	660' FEL & 1980' FSL Sec. 2-T24S-R36E	GETTY	10-15-49	N/A	N/A
Meyers B-2	660' FEL & 1980' FNL Sec. 2-T24S-R36E	TEX.PAC.	7-18-48	N/A	N/A
Cooper WN #1	1980' FNL & FEL Sec 12-T24S-R36E	ARCO	7-24-40	N/A	N/A

Jalmat Gas Area
Net Pay Data
F.H.Curry Lease
Lea County, NM

WELL & LEASE	LOCATION	OPERATOR	DATE COMPLETED	LOGS	NET PAY, FT
Cooper WN #2	1980' FNL & 1980' FWL Sec 12-T24S-R36E	ARCO	10-9-41	N/A	N/A
Cooper WN #3	660' FNL & 1980' FEL Sec 12-T24S-R36E	ARCO	4-21-73	Schlumberger GR-NL 0-3633	128'
Vaughn A-12 #1	1980' FNL & 660 FWL, Sec12-T24S-R36E	CONOCO	2-19-42	Welex GR-NL	120'
Vaughn B-12 #1	1980' FNL & 660 FSL, Sec 12-T24S R36E	CONOCO	7-18-40	N/A	N/A
Meyers B-1	660'FNL & FWL Sec 7-T24S-R36E	AMOCO	8-29-37	N/A	N/A
Jim Camp WN #1	660' FSL & FWL Sec 6-T24S-R36E	AROC	6-13-37	N/A	N/a
Jim Camp WN #2	1980' FNL & 660'FWL Sec 6-T24S-R36E	ARCO	4-4-65	Western GR-NL 1000-3574'	118'
Jim Camp WN #3	660' FNL & 1980' FSL Sec 6-T24S-R36E	ARCO	1-28-55	Western GR-NL 1000-3574'	

PRESSURE HISTORY
F.H. CURRY NO. 1, UNIT P
SECTION 1, T24S, R36E
Lea County, New Mexico

DATE	SHUT IN TIME	SHUT IN PRESSURE	EST BHP* PSIG	Z,avg	EST P/Z	CUMULATIVE GAS PROD MCF
9-24-66	72 hrs	598.2	645.1	.909	709.7	8151248
8-14-69	72 hrs	462.2	497.7	.929	535.7	9151837
8-13-70	72 hrs	440.2	473.9	.933	507.9	9538693
8-19-71	72 hrs	413.2	444.7	.937	474.6	9686127
1972	BAD VALVE					
6-26-73	72 hrs	315.2	338.8	.951	356.3	10710956
6-24-74	72 hrs	298.2	320.5	.954	335.9	11026488
3-14-75	72 hrs	263.2	282.7	.959	294.8	11392313
6-8-76	72 hrs	233.2	250.4	.964	259.7	11940784
7-19-77	72 hrs	209.2	224.6	.968	232.0	12293893
7-17-78	72 hrs	195.2	209.5	.970	215.9	12614442

* $Pws = Pwh \; e^{\frac{.01875 \times SG \times D}{Zavg \; Tavg}}$