

OIL CONSERVATION DIVISION
RECEIVED

LAW OFFICES

LOSEE, CARSON, HAAS & CARROLL, P. A.

ERNEST L. CARROLL
JOEL M. CARSON
DEAN B. CROSS
JAMES E. HAAS
A. J. LOSEE

1994 FEB 23

PM 9:30

300 STATES PETROLEUM BUILDING
P. O. DRAWER 239
ARTESIA, NEW MEXICO 88211-0239

TELEPHONE
(505) 746-3505
TELECOPY
(505) 746-6316

MARY LYNN BOGLE

February 22, 1994

VIA FACSIMILE AND FIRST CLASS MAIL

Mr. Michael Stogner, Hearing Examiner
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Application of MYCO Industries, Inc. for
Unorthodox Gas Well Location

Dear Mr. Stogner:

I am enclosing herewith the Application of MYCO Industries, Inc., for unorthodox gas well location, as was discussed with Jim Morrow this morning. I will be mailing hard copies of the Application with original waivers, and the additional information required by Rule 104 F will be supplied in the immediate future upon its completion.

If you have any questions, do not hesitate to contact me.

Very truly yours,

LOSEE, CARSON, HAAS & CARROLL, P.A.



Ernest L. Carroll

ELC:kth
Encl.

xc w/encl: Mr. Nelson Muncy/Mr. Doug Hurlbut

**BEFORE THE OIL CONSERVATION DIVISION
OF THE STATE OF NEW MEXICO**

IN THE MATTER OF THE APPLICATION OF :
MYCO INDUSTRIES, INC., FOR AN : CASE NO. _____
UNORTHODOX GAS WELL LOCATION, EDDY :
COUNTY, NEW MEXICO :
_____ :

**APPLICATION FOR ADMINISTRATIVE APPROVAL OF
UNORTHODOX GAS WELL LOCATION**

COMES NOW MYCO INDUSTRIES, INC., by and through its attorneys, Losee, Carson, Haas & Carroll, P. A. and in support hereof, respectfully states:

1. Applicant is the operator of the Morrow formation underlying:

Township 17 South, Range 25 East, N.M.P.M.

Section 34: E/2

and proposes to drill its MYD Federal No. 1 Well 990 ' from the South line and 1980' from the East line of said Section 34.

2. The applicant seeks an exception to the well location requirements of Rule 104-BI(a) of the Oil Conservation Division to permit the completion of the well at the above-mentioned unorthodox location to a depth sufficient to adequately test the Morrow and intermediate formation.

3. A 320-acre gas proration unit comprising the E/2 of said Section 34 should be dedicated to such well or to such lesser portion thereof as is reasonably shown to be reasonably productive of gas.

4. The approval of this application will afford applicant the opportunity to produce its just and equitable share of gas, will prevent economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the

drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

5. Attached hereto is a plat showing the ownership of the contiguous acreage to the proposed proration unit. All acreage within one mile of the proposed proration unit is operated by one of the following companies:

- (1) Yates Petroleum Corporation
- (2) Merit Energy Company
- (3) Mobil Oil Texas & New Mexico, Inc.
- (4) Amoco Production Company

6. All four companies have waived any objection that they might have to the proposed unorthodox location; copies of those waivers are attached hereto.

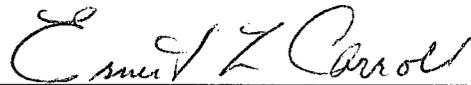
WHEREFORE, applicant prays:

A. That this application be administratively heard before an examiner.

B. That upon consideration the Division enter its order granting applicant permission to complete its MYD Federal No. 1 Well 990' from the South line and 1980' from the East line of said Section 34, which is reasonably presumed to be productive of gas from the Morrow formation.

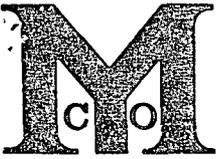
C. And for such other relief as may be just in the premises.

MYCO INDUSTRIES, INC.

By: 
Ernest L. Carroll

LOSEE, CARSON, HAAS & CARROLL, P.A.
P. O. Drawer 239
Artesia, New Mexico 88211-0239

Attorneys for Applicant



MYCO INDUSTRIES, INC.
OIL PRODUCERS
P.O. BOX 840 / 331 WEST MAIN, SUITE C
ARTESIA, NEW MEXICO 88211-0840
Phone (505) 748-1471

November 22, 1993

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
Section 34: E/2
Eddy County, New Mexico

Gentlemen:

In reference to the captioned area, this is to advise you that MYCO Industries, Inc. / Yates Drilling Company do hereby propose to drill an 8600' Morrow Test 990' FSL and 1980' FEL of Section 34, Township 17 South, Range 25 East, Eddy County, New Mexico.

Due to the New Mexico Oil Conservation Division rules for an E/2 spacing unit, this well will be drilled at an unorthodox location. We will file this administratively with the NMOCD, and do hereby request your waiver of any objections.

If you have no objections to the above, it would be appreciated if you would please signify your acceptance by signing and returning a copy of this letter to the undersigned at your earliest convenience.

Should you have any questions, please advise.

Very truly yours,

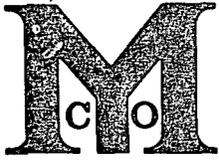
MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 24TH DAY OF NOVEMBER, 1993.

BY: *Peyton Yates*
Peyton Yates, Attorney-in-Fact



MYCO INDUSTRIES, INC.
OIL PRODUCERS
P.O. BOX 840 / 331 WEST MAIN, SUITE C
ARTESIA, NEW MEXICO 88211-0840
Phone (505) 748-1471

November 22, 1993

Merit Energy Company
P. O. Box 911504
Dallas, TX 75391

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
Section 34: E/2
Eddy County, New Mexico

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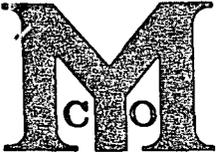
MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 1ST DAY OF DECEMBER, 1993.

BY: Howard A. Jones, Jr. DISTRICT GEOLOGIST / MERIT ENERGY



MYCO INDUSTRIES, INC.
OIL PRODUCERS
P.O. BOX 840 / 331 WEST MAIN, SUITE C
ARTESIA, NEW MEXICO 88211-0840
Phone (505) 748-1471

November 22, 1993

Mobil Oil Texas & New Mexico, Inc.
P. O. Box 633
Midland, TX 79702

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
Section 34: E/2
Eddy County, New Mexico

Gentlemen:

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Should you have any questions, please advise.

Very truly yours,

MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

Mobil Exploration & Producing U.S. Inc.
as Agent for
Mobil Producing Texas & New Mexico Inc.

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 3rd DAY OF December, 1993.

BY: Robeyneal



FEB 17 1994

MYCO INDUSTRIES, INC.

OIL PRODUCERS

P.O. BOX 840 / 331 WEST MAIN, SUITE C

ARTESIA, NEW MEXICO 88211-0840

Phone (505) 748-1471

November 22, 1993

Amoco Production Company

P. O. Box 3092

Houston, TX 77253

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
Section 34: E/2
Eddy County, New Mexico

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Should you have any questions, please advise.

Very truly yours,

MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

DWH/jrw

Enclosure

AGREED AND ACCEPTED THIS 2nd DAY OF January, 1994

BY: Tamara H. Foster

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LEGEND

YATES PETROLEUM CORPORATION

KAY JAY OIL CO.

MERIT ENERGY COMPANY

MOBIL OIL TEXAS & NEW MEXICO, INC.

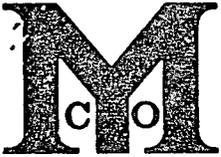
AMOCO PRODUCTION COMPANY

YATES DRILLING COMPANY.

MARTIN YATES III ESTATE & LILLIE M. YATES ESTATE



The map displays a grid of 1000 numbered cells (1-1000). Each cell contains text representing land ownership or leasehold information. The text includes names of companies (e.g., Yates Petroleum, Chevron, Amoco), individuals (e.g., J. Yates, W. F. Yates), and various alphanumeric codes (e.g., 10090, 10091, 10092). The map is divided into sections by larger numbers (1-36) and includes a legend in the center-right area.



MYCO INDUSTRIES, INC.
 OIL PRODUCERS
 P.O. BOX 840 / 331 WEST MAIN, SUITE C
 ARTESIA, NEW MEXICO 88211-0840
 Phone (505) 748-1471

November 22, 1993

Yates Petroleum Corporation
 105 South Fourth Street
 Artesia, NM 88210

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
 Section 34: E/2
 Eddy County, New Mexico

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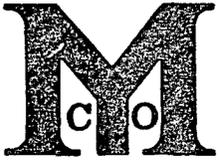
MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
 Landman

DWH/jrw
 Enclosure

AGREED AND ACCEPTED THIS 24TH DAY OF NOVEMBER, 1993.

YATES PETROLEUM CORPORATION
 BY: *DWH*
 Peyton Yates, Attorney-in-Fact



MYCO INDUSTRIES, INC.

OIL PRODUCERS

P.O. BOX 840 / 331 WEST MAIN, SUITE C

ARTESIA, NEW MEXICO 88211-0840

Phone (505) 748-1471

November 22, 1993

Merit Energy Company
P. O. Box 911504
Dallas, TX 75391

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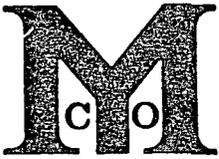
MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 1ST DAY OF DECEMBER, 1993.

BY: Anderson A. Gammel, Jr. DISTRICT GEOLOGIST / MERIT ENERGY



MYCO INDUSTRIES, INC.
OIL PRODUCERS
P.O. BOX 840 / 331 WEST MAIN, SUITE C
ARTESIA, NEW MEXICO 88211-0840
Phone (505) 748-1471

November 22, 1993

Mobil Oil Texas & New Mexico, Inc.
P. O. Box 633
Midland, TX 79702

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MYCO INDUSTRIES, INC.

Douglas W. Hurlbut
Landman

Mobil Exploration & Producing U.S. Inc.
as Agent for
Mobil Producing Texas & New Mexico Inc.

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 3rd DAY OF December, 1993.

BY: [Handwritten Signature]

M
C O

FEB 27 1994

MYCO INDUSTRIES, INC.

OIL PRODUCERS

P.O. BOX 840 / 331 WEST MAIN, SUITE C
ARTESIA, NEW MEXICO 88211-0840
Phone (505) 748-1471

November 22, 1993

Amoco Production Company
P. O. Box 3092
Houston, TX 77253

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: MYD Federal #1 Well
Township 17 South, Range 25 East
Section 34: E/2
Eddy County, New Mexico

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MYCO INDUSTRIES, INC.

Douglas W. Hurlbut

Douglas W. Hurlbut
Landman

DWH/jrw
Enclosure

AGREED AND ACCEPTED THIS 2nd DAY OF January, 1994

BY: Tamara H. Foster

OIL CONSERVATION DIVISION LAW OFFICES
LOSEE, CARSON, HAAS & CARROLL, P. A.

ERNEST L. CARROLL
JOEL M. CARSON
DEAN B. CROSS
JAMES E. HAAS
A. J. LOSEE
MARY LYNN BOGLE

300 YATES PETROLEUM BUILDING
P.O. DRAWER 239
ARTESIA, NEW MEXICO 88211-0239

TELEPHONE
(505) 746-3505
TELECOPY
(505) 746-6316

March 2, 1994

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

Mr. Michael Stogner, Hearing Examiner
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Application of MYCO Industries, Inc. for
Unorthodox Gas Well Location

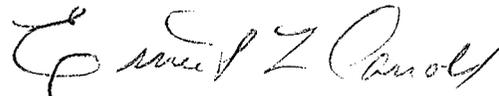
Dear Mr. Stogner:

Pursuant to Rule 104 F, I am enclosing in triplicate the geologic data supporting the above-referenced application.

If there is anything lacking or if you have a question, please advise.

Very truly yours,

LOSEE, CARSON, HAAS & CARROLL, P.A.



Ernest L. Carroll

ELC:kth
Encl.

FEBRUARY 23, 1994

TO: MYCO INDUSTRIES INC.

SUBJECT: GEOLOGICAL REPORT ON A STUDY OF A PORTION OF THE EAGLE CREEK PERMO-PENN FIELD, T17S & 18S-R25E, EDDY COUNTY, NEW MEXICO

I made a geological study of a nine Section area within the Eagle Creek Permo-Penn Field. The primary purpose of this study was to find the best location, one with the lowest risk and best reserves from the Pennsylvanian Cisco carbonate, for a possible 8600' Pennsylvanian well to be located on the LDY lease in the E/2 of Section 34-T17S-R25E. ~~The proposed well is targeted to test the Pennsylvanian Morrow sands at 8300 feet, but the primary objective is~~ ~~Pennsylvanian Cisco carbonate at 6400 feet.~~ Field rules set out by NMOCD in this area for production from both the ~~Cisco and Morrow have been established on 320 acre proration~~ units. The following discussion and enclosed maps and cross section are the results of this study. Based on this work it appears that the most favorable location for a Penn-Cisco carbonate well, would be an unorthodox location at 990 feet from the south line and 1980 feet from the east line of Section 34. A well at this location should encounter about 32 feet of effective pay in the primary objective, the Cisco carbonate, versus an estimated 24 feet at the orthodox location of 1980 feet from the south and east lines. Reserves should be similar to the south offset, the Yates Morris "MC" No. 1 which has produced over 1.1 BCFG to 6-1-93. Studies show that the Cisco reserves are directly related to the thickness of net effective pay and clean carbonate. Since the unorthodox location would encounter a projected 25% more effective pay than the orthodox location it should recover considerable more gas. Obviously, drilling a well at the orthodox location would result in the waste of oil and gas.

The Strawn, Atoka and Morrow sands all produce in the immediate area. Production has not been as good as the Cisco and the sands have an erratic development and are difficult to map. However, a well at the proposed location has as good if not better chance of encountering productive Morrow sands than a well at the orthodox location. My recommendation would be to drill the well deep enough to test all of the potential Morrow sands and if no commercial production is found in these sands, plug back and complete in our primary objective, the Cisco carbonate.

DISCUSSION

Figure No.1 is a Location Map which shows that the proposed well is located about four miles southwest of Artesia. You will also note that it is two miles south of the large Eagle Creek oil field which produces from the San Andres at 1200 to 1400 feet.

Figure No. 2 is a Land Plat which shows the ownership of the offsetting leases. This map also serves as the base map for all of the maps that will be discussed in the following paragraphs. Scale of this base map is 1" = 1000' and it covers the 9 square mile area around the proposed well. Only the wells that went deeper than 6000 feet are shown. Yates Petroleum is the operator of all the direct Penn offsets to the proposed well.

Figure No. 3 is an Index and Production Map. Production from the Pennsylvanian formations is color coded as follows: Blue = Cisco Carbonate Bank, Yellow = Cisco Sand. Green = Strawn, Red = Atoka-Morrow. The cumulative production to 6-1-93 from each zone is noted by the well. Some wells show production from two zones. Usually these are wells that produced from a deeper zone and are now plugged back to a shallow zone. Eagle Creek Permo-Penn Field was dedicated in 1977. Cumulative production to 1-1-93 is 13.676 BCFG from 31 wells. Two of the best wells in the Field, the Morris and the Griffin are located just south and west of the proposed location. The good production shown in these wells is one of the main reasons for moving the well to the south to the unorthodox location. Figure 3 is also an Index Map which shows the location of Cross Section A-A', which will be discussed in the next paragraph.

Figure No. 4 is Cross Section A-A', which is a NW-SE stratigraphic section that uses the base of the Cisco carbonate bank as datum. It begins on the northwest with the Yates "BZ" 16 in Section 28, then trends southeast to the Yates Morley "EW" 1 in Section 27, then southwest to the Yates Sowers "FB" 1 in Section 34, then southeast through the proposed location to the Yates Morris "MK" 1 in Section 3, then east to the Merit Johnson 1 in Section 2. All of the logs shown are Gamma Ray Neutron/Density logs recorded on the same scale. The Cisco carbonate bank occurs between 6400 and 6700 feet. The bank is made up of a clean, tan to brown, finely crystalline, slightly fossiliferous limestone. The mud log sample description on offset wells shows very

little dolomite. The Cisco carbonate bank develops in this area because we are on the Cisco hinge line with shelf deposits to the northwest and basin deposits to the southeast. The best production occurs in wells that encounter very clean limestone with good porosity. This shows up on the logs as limestone with a gamma ray reading of less than 50 API units and a neutron/density gas effect of more than two porosity units. We note that the Morris well (Well No. 4) has 34 feet of effective pay and 192 feet of clean limestone; whereas Well No. 3, the Sowers well has zero feet of effective pay and only 124 feet of clean limestone. This is a very important reason to move the proposed well to the south from the standard orthodox location. The section also shows that the Sowers well produces from a very thin Cisco sand at 6773 feet. This sand does not appear to be present in the surrounding wells.

Figure No. 5 is a Structure Map drawn on the top of the Cisco carbonate bank. Contour interval is 50 feet. In this area we are mapping gentle southeast dip of about one degree out into the Basin. Structurally the proposed well would be about 40 feet high to the south offset.

Figure No. 6 is an Isopach Map showing the gross thickness of clean limestone within the Cisco carbonate bank which reads less than 50 API units radioactivity on the gamma ray logs. Contour interval is 50 feet. This map shows a thick clean carbonate trend from the Griffin well in Section 4, trending to the northeast through the proposed well and on into Sections 35 and 26. We estimate that a well at the proposed location should encounter about 225 feet of clean carbonate which is about 50 feet more than mapped for a well at the orthodox location.

Figure 7 is an Isopach Map of the net effective pay within the Cisco Carbonate Bank. Contour interval is 10 feet. Net effective pay is defined in this case as the number of feet that has more than two units of gas effect separation on the neutron/density log and reads less than 50 API units on the gamma ray. This is a critical map since there seems to be a direct correlation between good production and the wells that have thicker pay. A well at the proposed location has an estimated thickness 32 feet of effective pay or about 8 feet more than the orthodox location. This map also shows the NE/SW strike of the zero porosity contour which runs through the Sowers well. By moving the proposed well to the south away from the zero contour we lower the risk and increase the chances for more reserves.

I have reviewed the Morrow section on all the logs of the offset wells. The Sowers well in the NW/4 of Section 34 encountered a clean Morrow sand with 36 feet of porosity at 8300 feet. A DST of this interval had GTS too small to measure and recovered 6925 feet of water. Since the proposed well is downdip to this well, this sand is likely to be wet unless there is stratigraphic separation. The thinner sands that are developed in the lower part of the Morrow clastics and the sands in the Atoka section also have a chance to produce. A well at the proposed location would have as good or better chance to produce from these sands as a well at the orthodox location.

Leo J. Lammers



AAPG, Certified Petroleum Geologist #1888
AIPG, Certified Professional Geologist #3757

FEBRUARY 23, 1994

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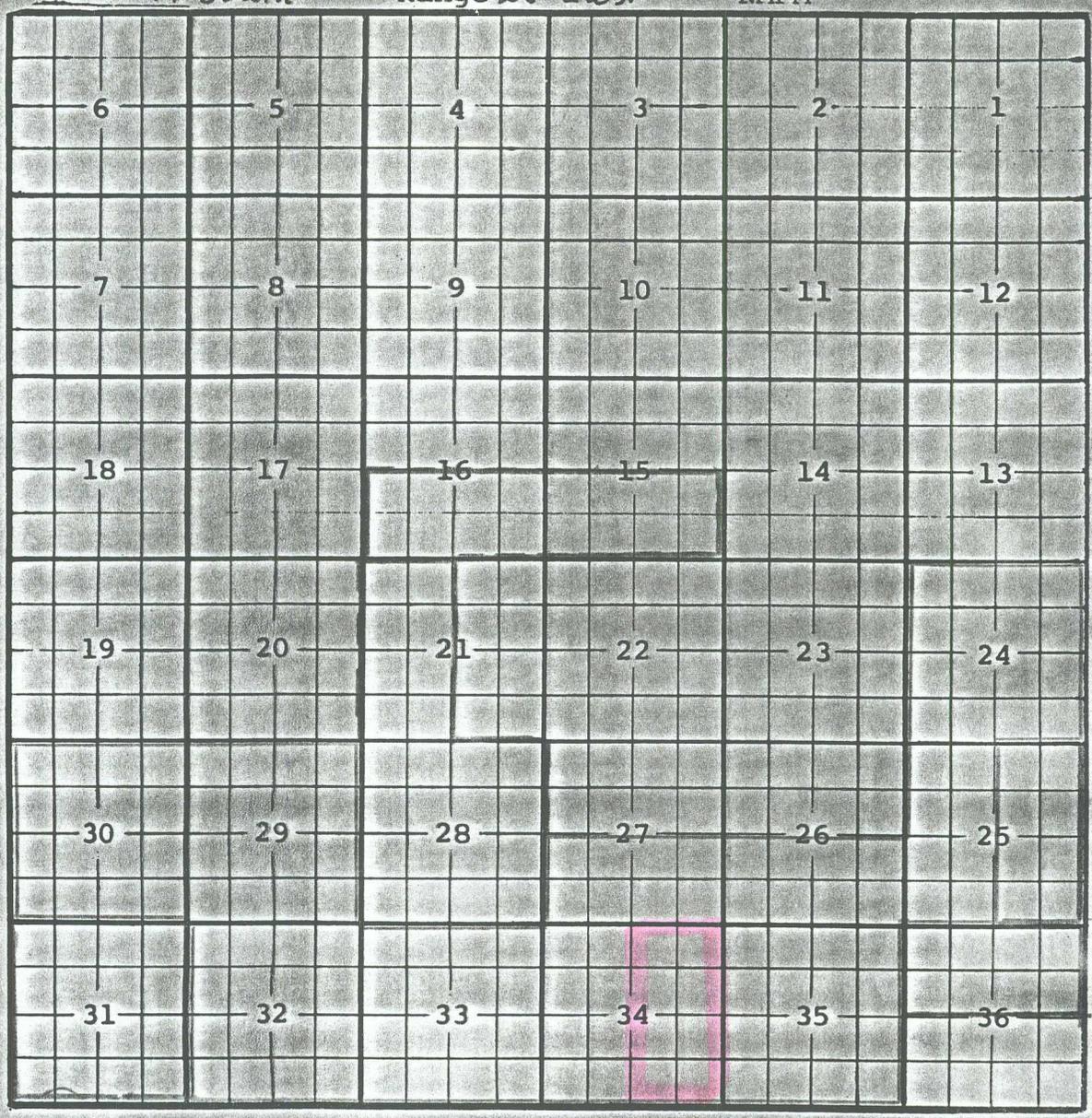
Leo J. Lammers



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County Eddy Pool Eagle Creek Permo-Pennsylvanian Gas

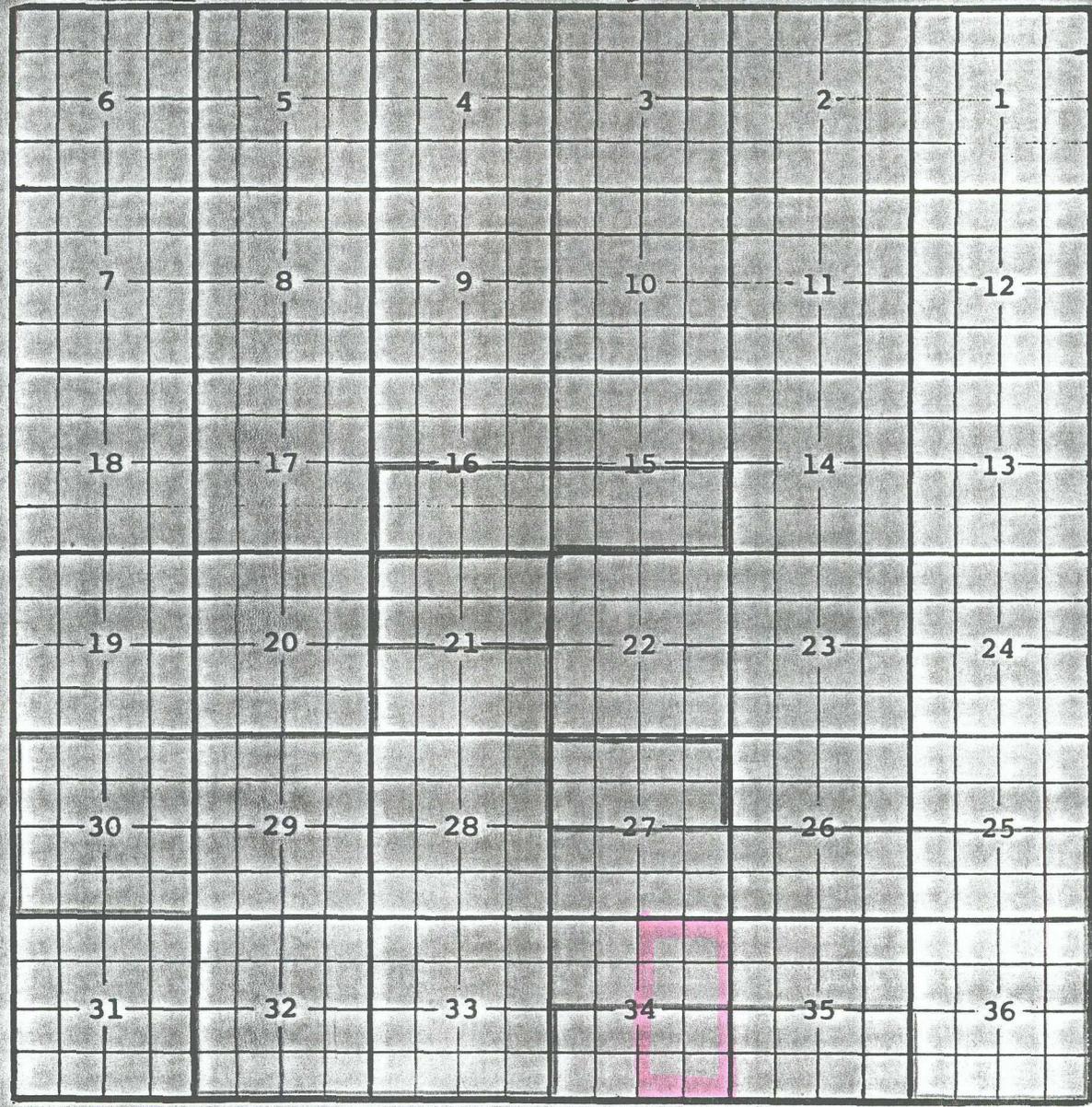
TOWNSHIP 17 South Range 25 East NMPM



Description: All Secs 24, 29, 30, 32, 33, 34 & 35, ^w/₂ Sec 25 -
^s/₂ Sec 26, ^s/₂ Sec 27 (R-5460, 7-1-77)
 Ext: ^w/₂ Sec 21, All Sec 28 (R-5988, 5-1-79) Ext: ⁿ/₂ Sec. 36 (R-6170, 11-1-79)
 Ext: All Sec. 31 (R-6476, 10-1-80) EXT: ^s/₂ sec 25 (R-8945, 5-31-89)
 Ext: ^s/₂ Sec. 15, ^s/₂ Sec. 16 (R-9938, 8-17-93)

County Eddy Pool Eagle Creek - Strawn Gas

TOWNSHIP 17 South Range 25 East NMPM



Description: 1/2 Sec 21, 1/2 Secs 25, 26, & 27, All Secs 28, 29, 30, 32, 33 & 36 -
- 1/2 Secs 34 & 35 (R-5460, 7-1-77)

Ext: N1/2 Sec 21 (R-5988, 5-1-79) Ext: N1/2 Sec 27 (R-6838, 11-8-81)

Ext: S1/2 Sec 15, S1/2 Sec 16 (R-9017, 11-1-89)

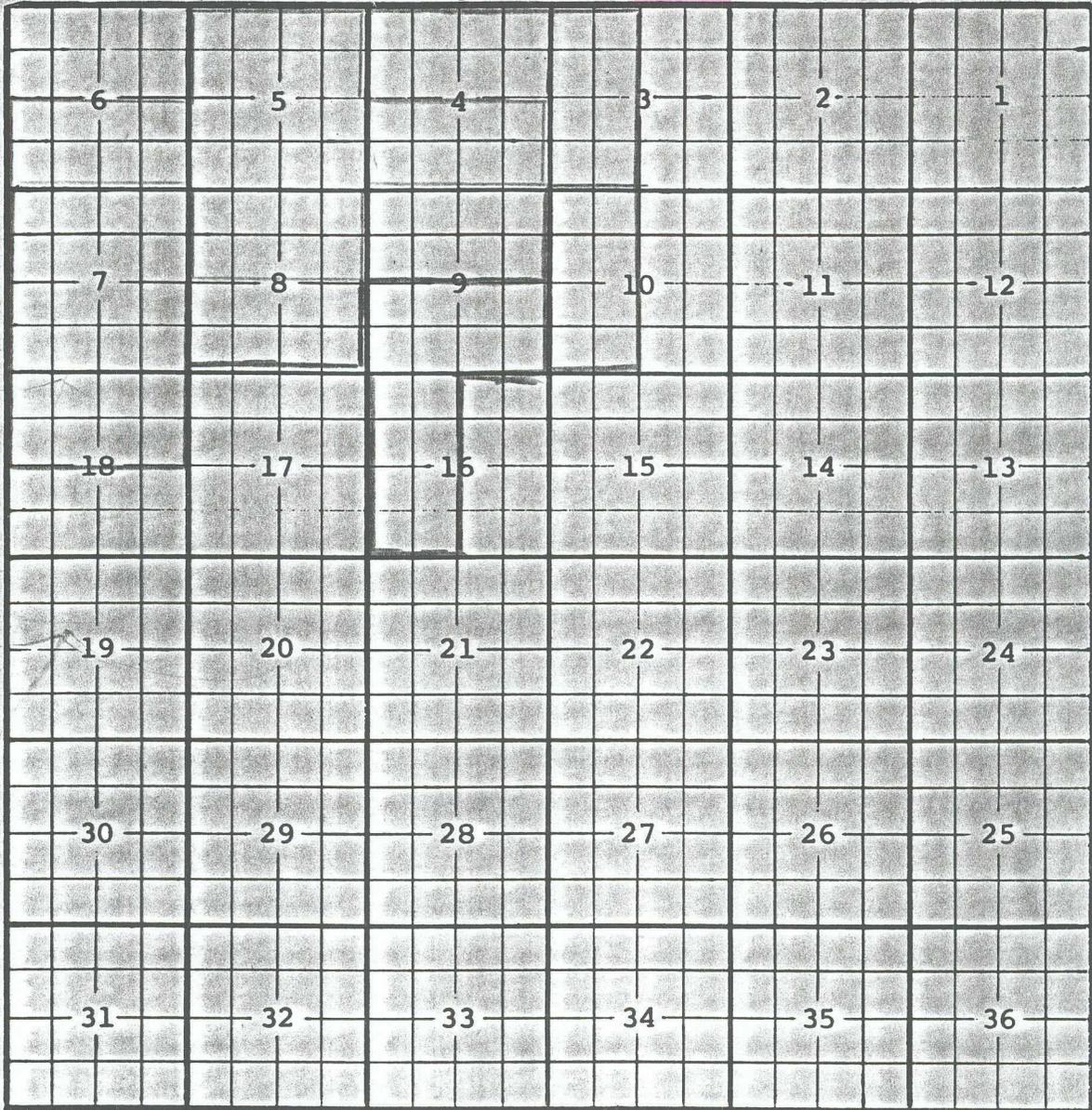
county Eddy

pool Richard Knob Atoka-Morrow Gas

TOWNSHIP 18 South

Range 25 East

NMPM



Description: $\frac{9}{2}$ Secs 4 & 6, All Sec 5, $\frac{N}{2}$ Sec 8 (R-5460, 7-1-77)

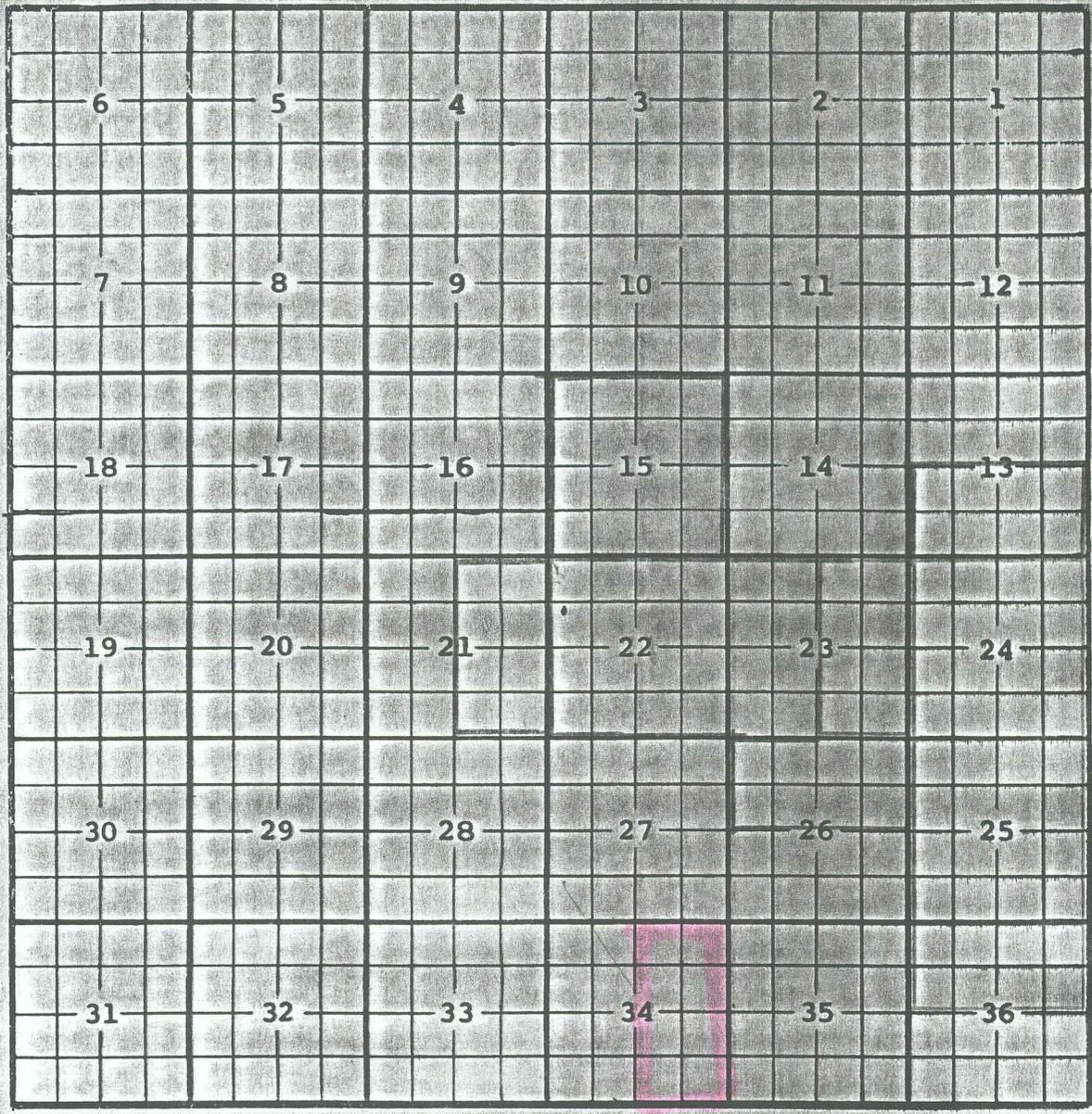
Ext: All Sec. 7, $\frac{N}{2}$ Sec. 18 (R-5987, 4-1-79) Ext: $\frac{W}{2}$ Sec 3, $\frac{N}{2}$ Sec 4, (R-6657, 4-20-81)

Ext: $\frac{N}{2}$ sec 9 (R-6724, 7-16-81) Ext: $\frac{S}{2}$ Sec. 8 (R-7958, 6-12-85)

Ext: $\frac{S}{2}$ Sec. 9, $\frac{W}{2}$ Sec. 16 (R-9545, 7-1-91) Ext: $\frac{W}{2}$ Sec. 10 (R-9837, 1-27-93)

COUNTY Eddy POOL East Eagle Creek Atoka-Morrow Gas

TOWNSHIP 17 South RANGE 25 East NMPM



Description: All Secs 24 & 25, $\frac{N}{2}$ Sec 36 (R-5460, 7-1-77)

Ext: $\frac{E}{2}$ Sec 23 (R-5667, 4-1-78)

Ext: $\frac{S}{2}$ Sec 13 (R-6033, 7-1-79) Ext: $\frac{N}{2}$ Sec. 26 (R-6169, 11-1-79)

Ext: All Sec. 22, $\frac{W}{2}$ Sec. 23 (R-6420, 8-1-80)

Ext: $\frac{E}{2}$ Sec. 21 (R-7322, 8-1-83) Ext: All Sec. 15 (A-7351, 9-19-83)

COUNTY *Eddy*

POOL *West Atoka - Morrow Gas*

TOWNSHIP *17 South*

RANGE *25 East*

NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Ext: 1/2 Sec 35 (R-4937, 2-1-75)