Memo

From
FRANK T. CHAVEZ
District Supervisor

To Dick,

Recommend deny or docket for hearing.

① Small tubing has not been run.

② Fast decline in S.I. pressure may indicate casing failure.

Oil Conservation Aztec, New Mexico

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, New Mexico 87501

Adopted 3-2-84
Side 1

Case 8578

APPLICATION FOR CLASSIFICATION AS HARDSHIP GAS WELL

Operator Northwest Pipeline Corporation Contact Party Mark McCallister

Address P.O. Box 90 - Farmington, NM 87499 Phone No. 505/327-5351

Lease San Juan 29-5 Unit Well No. 88 UT G Sec. 34 TWP 29N RGE 5W

Pool Name Basin Dakota Minimum Rate Requested 120 MCF/D

Transporter Name El Paso Natural Gas Company Purchaser (if different) _____

Are you seeking emergency "hardship" classification for this well? X yes _____ no

Applicant must provide the following information to support his contention that the subject well qualifies as a hardship gas well.

1) Provide a statement of the problem that leads the applicant to believe that "underground waste" will occur if the subject well is shut-in or is curtailed below its ability to produce. (The definition of underground waste is shown on the reverse side of this form)

2) Document that you as applicant have done all you reasonably and economically can do to eliminate or prevent the problem(s) leading to this application.

   a) Well history. Explain fully all attempts made to rectify the problem. If no attempts have been made, explain reasons for failure to do so.

   b) Mechanical condition of the well(provide wellbore sketch). Explain fully mechanical attempts to rectify the problem, including but not limited to:

      i) the use of "smallbore" tubing; ii) other de-watering devices, such as plunger lift, rod pumping units, etc.

3) Present historical data which demonstrates conditions that can lead to waste. Such data should include:

   a) Permanent loss of productivity after shut-in periods (i.e., formation damage).

   b) Frequency of swabbing required after the well is shut-in or curtailed.

   c) Length of time swabbing is required to return well to production after being shut-in.

   d) Actual cost figures showing inability to continue operations without special relief

4) If failure to obtain a hardship gas well classification would result in premature abandonment, calculate the quantity of gas reserves which would be lost

5) Show the minimum sustainable producing rate of the subject well. This rate can be determined by:

   a) Minimum flow or "log off" test; and/or

   b) Documentation of well production history (producing rates and pressures, as well as gas/water ratio, both before and after shut-in periods due to the well dying, and other appropriate production data).

6) Attach a plat and/or map showing the proration unit dedicated to the well and the ownership of all offsetting acreage.

7) Submit any other appropriate data which will support the need for a hardship classification.

8) If the well is in a prorated pool, please show its current under- or over-produced status.

9) Attach a signed statement certifying that all information submitted with this application is true and correct to the best of your knowledge; that one copy of the application has been submitted to the appropriate Division district office (give the name) and that notice of the application has been given to the transporter/purchaser and all offset operators.

RECEIVED
MAR 12 1985
OIL CON. DIV
DIST. 3

GENERAL INFORMATION APPLICABLE TO HARDSHIP GAS WELL CLASSIFICATION

1) Definition of Underground Waste.

> "Underground Waste as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas."

2) The only acceptable basis for obtaining a "hardship" classification is prevention of waste with the burden of proof solely on the applicant. The applicant must not only prove waste will occur without the "hardship" classification, but also that he has acted in a responsible and prudent manner to minimize or eliminate the problem prior to requesting this special consideration. If the subject well is classified as a "hardship" well, it will be permitted to produce at a specified minimum sustainable rate without being subject to shut-in by the purchaser due to low demand. The Division can rescind approval at any time without notice and require the operator to show cause why the classification should not be permanently rescinded if abuse of this special classification becomes apparent.

3) The minimum rate will be the minimum sustainable rate at which the well will flow. If data from historical production is insufficient to support this rate (in the opinion of the Director), or if an offset operator or purchaser objects to the requested rate, a minimum flow ("log off") test may be required. The operator may, if he desires, conduct the minimum flow test, and submit this information with his application.

4) If a minimum flow test is to be run, either at the operator's option or at the request of the Division, the offset operators, any protesting party, the purchaser and OCD will be notified of the date of the test and given the opportunity to witness, if they so desire.

5) Any interested party may review the data submitted at either the Santa Fe office or the appropriate OCD District Office.

6) The Director can approve uncontested applications administratively if, in his opinion, sufficient justification is furnished. Notice shall be given of intent to approve by attaching such notice to the regular examiner's hearing docket. Within 20 days following the date of such hearing, the affected parties will be permitted to file an objection. If no objection has been filed, the application may be approved.

7) Should a protest be filed in writing, the applicant will be permitted to either withdraw the application, or request it to be set for hearing.

8) An emergency approval, on a temporary basis for a period not to exceed 90 days, may be granted by the District Supervisor, pending filing of formal application and final action of the OCD Director. This temporary approval may be granted only if the District Supervisor is convinced waste will occur without immediate relief. If granted, the District Supervisor will notify the purchaser.

9) After a well receives a "hardship" classification, it will be retained for a period of one year unless rescinded sooner by the Division. The applicant will be required to certify annually that conditions have not changed substantially in order to continue to retain this classification.

10) Nothing here withstanding, the Division may, on its own motion, require any and all operators to show cause why approval(s) should not be rescinded if abuse is suspected or market conditions substantially change in the State of New Mexico.

11) A well classified as a "hardship well" will continue to accumulate over and under production (prorated pools). Should allowables exceed the hardship allowable assigned, the well will be permitted to produce at the higher rate, if capable of doing so, and would be treated as any other non-hardship well. Any cumulative overproduction accrued either before or after being classified "hardship" must, however, be balanced before the well can be allowed to produce at the higher rate.

NORTHWEST PIPELINE CORPORATION
PRODUCTION & DRILLING
P.O. BOX 90
FARMINGTON, NEW MEXICO 87499

Case 8578

February 25, 1985

Frank Chavez
New Mexico Oil Conservation Div.
1000 Rio Brazos Rd.
Aztec, NM 87410

Re: San Juan 29-5 Unit #88

Dear Frank:

The San Juan 29-5 Unit #88 was completed in the Dakota formation in September of 1978. This well will log off with fluid any time it is shut in for more than five days. A stopcock was installed in April of 1981 to maintain bottom hole pressure and ensure enough gas volume is available to lift fluid. The well has to be blown to atmosphere periodically even with a stopcock.

Each time the well is shut in for no demand or mechanical problems, it has to be swabbed in. The average number of days to swab the well in is two. At a cost of $1200 per day, it costs NWP $2400 to return the well to production. At the well's current production of 100 mcfd, one swabbing operation will take 7 days to payout. To date approximately $7200 has been spent on swabbing operations.

As the well's production declines, it will log off with greater frequency. If the well starts logging off once every 3 months, the well will be prematurely abandoned when the well is capable of producing 16 mcfd. This will leave 8 mmcf of recoverable reserves in the ground. This amounts to approximately $27,040 in lost revenue.

If the well were allowed to produce with a hardship classification, small bore tubing will be installed and the well can continually lift fluid in the wellbore. With the well producing continually the well will not log and the costs of swabbing will not have to be paid out. At current producing and swabbing rates, 6% of the well's gross revenues go to swabbing.

The use of small bore tubing will reduce the volume of gas needed to lift fluid from the wellbore. If the well is shut in, the size of the tubing will not make a difference because the bottom hole pressure connot overcome the hydrostatic pressure of the fluid column. Small bore tubing may even promote logging in that less water can exert the same hydrostatic pressure on the formation.

no H_2O on C-115's

An initial liquid production test run in November of 1980 indicates the well produces 9.5 BWPD when producing constantly. Through the use of a stopcock set for 4 hrs. off and 4 hrs. on, the water production can be cut to approximately 4 BWPD.

The attached production curve indicates that underground waste is already occurring. The rate of which the well was returned to production following the last swabbing operation is approximately 37% of the previous rate. Also, the SICP is declining at an abnormal rate indicating the relative permeability to gas is being reduced.

The minimum producing rate required to lift fluid from the wellbore is 700 mcf/d in 2 3/8" tubing and 475 mcf/d in 1 1 2" tubing. This well cannot maintain a producing rate of 475 mcf/d without the use of a stopcock. The well's producing history indicates a stopcock time setting of 6 hours off and 2 hours on will maintain enough gas volume to lift fluid from the wellbore. Based on a minimum flow rate of 475 mcf/d, this well will require an average minimum flow rate of 120 mcf/d to lift fluid from the wellbore.

Sincerely,

Mark McCallister
Production & Drilling Engineer

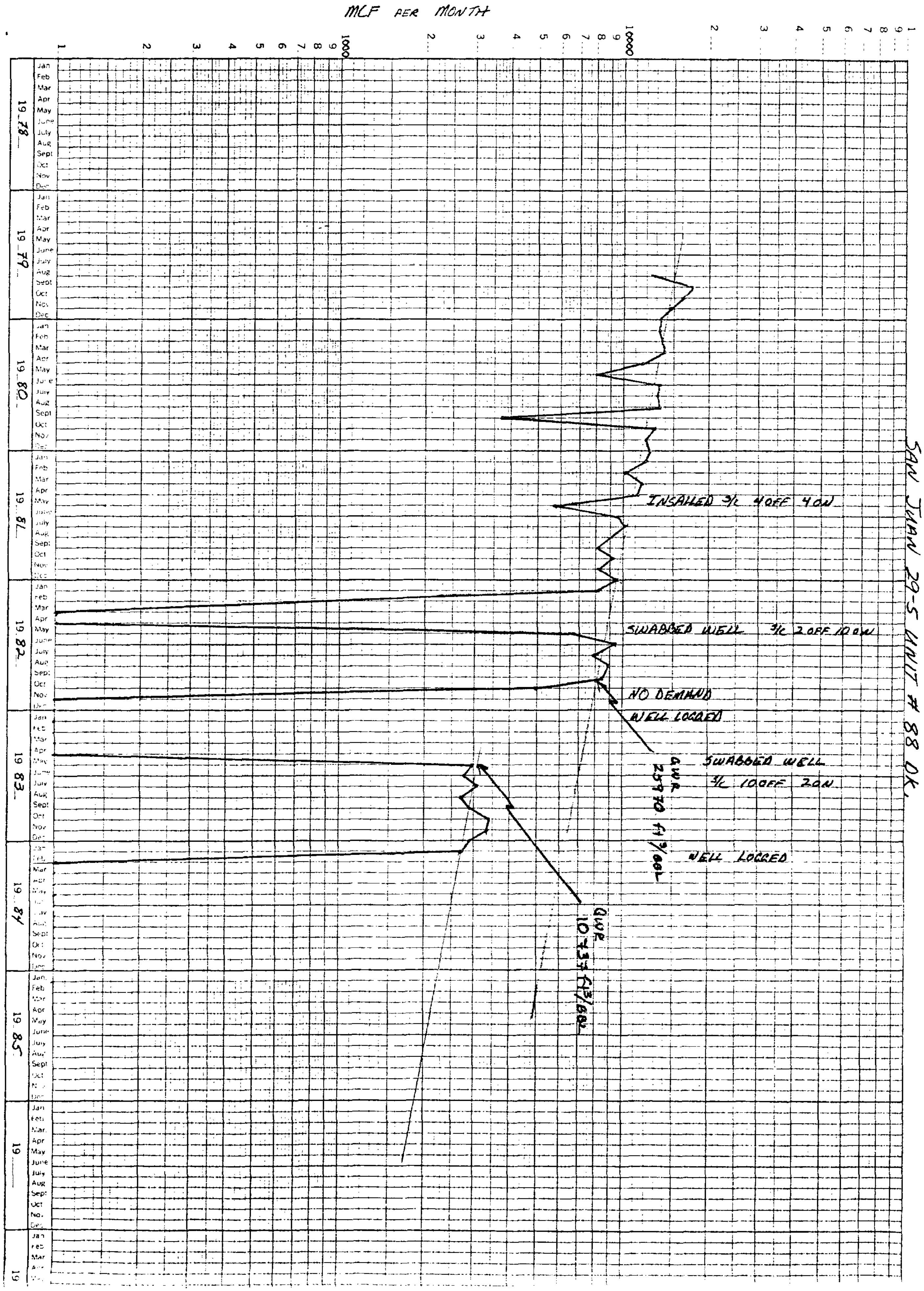
MAM/cnh
cc: File

PRODUCTION HISTORY

SAN JUAN 29-5 UNIT #88

The San Juan 29-5 Unit #88 Dakota was first delivered on June 29, 1979. An initial water production rate of 5.7 BWPD was measured. Due to problems with the production unit, the well was shut in for repairs on January 23, 1980. The well logged while shut in and was swabbed in on February 26, 1980. The well produced an average of 388 mcf/d for the remainder of 1980. A stopcock was installed on April 30, 1981 set for 4 hours off and 4 hours on. The well produced an average of 314 mcf/d in 1981. Due to more problems with the production unit the well logged off in January of 1982. The SICP at this time was 1740# (2493# at IP test). The well was swabbed in on April 28, 1982. The well was shut in for no demand on October 20, 1982. The well was off for 40 days. The well was on for 2 days when the fire in the production unit went out and the well logged. The well was swabbed in on April 29, 1983. The stopcock time was changed to 10 hours off and 2 hours on. On May 9, 1983 the stopcock time was changed to 11 hours off and 1 hour on. The well averaged over 1000 mcf/d while on. The orifice plate was changed from 1.250 to 1.750 on July 1, 1983. The well seemed to be producing good at the above settings. On January 30, 1984 the well was found logged off while producing.

K·E 10 YEARS BY MONTHS x 3 LOG CYCLES KEUFFEL & ESSER CO. MADE IN U.S.A. 47 6740



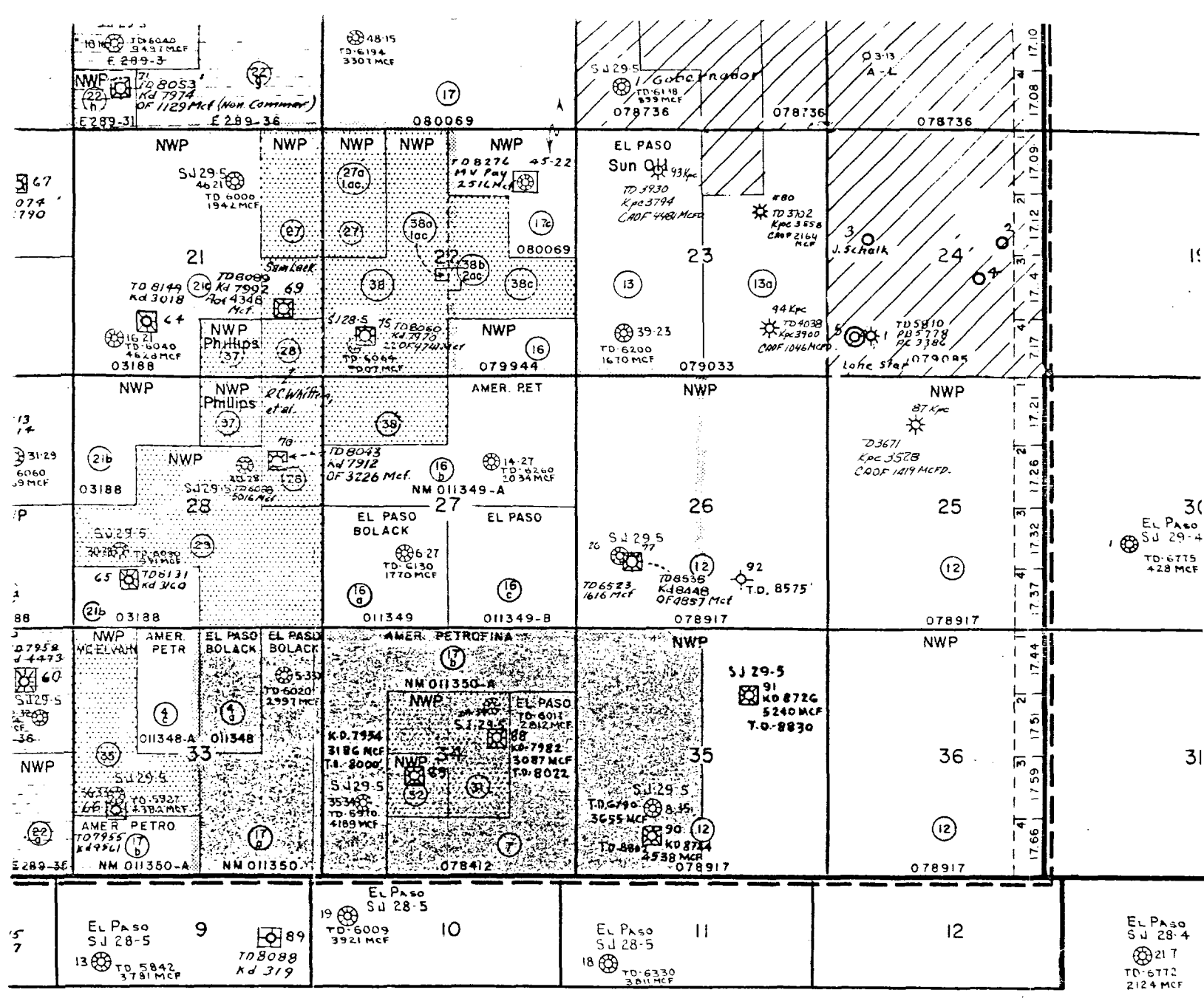


EXHIBIT "A"

SAN JUAN 29-5 UNIT

RIO ARRIBA COUNTY NEW MEXICO

APPROVED 21 NOVEMBER 1952

UNIT AGREEMENT NUMBER: 14-08-001-437

FIRST SALE OF UNITIZED SUBSTANCE 10-27-54

SCALE 1"=3000

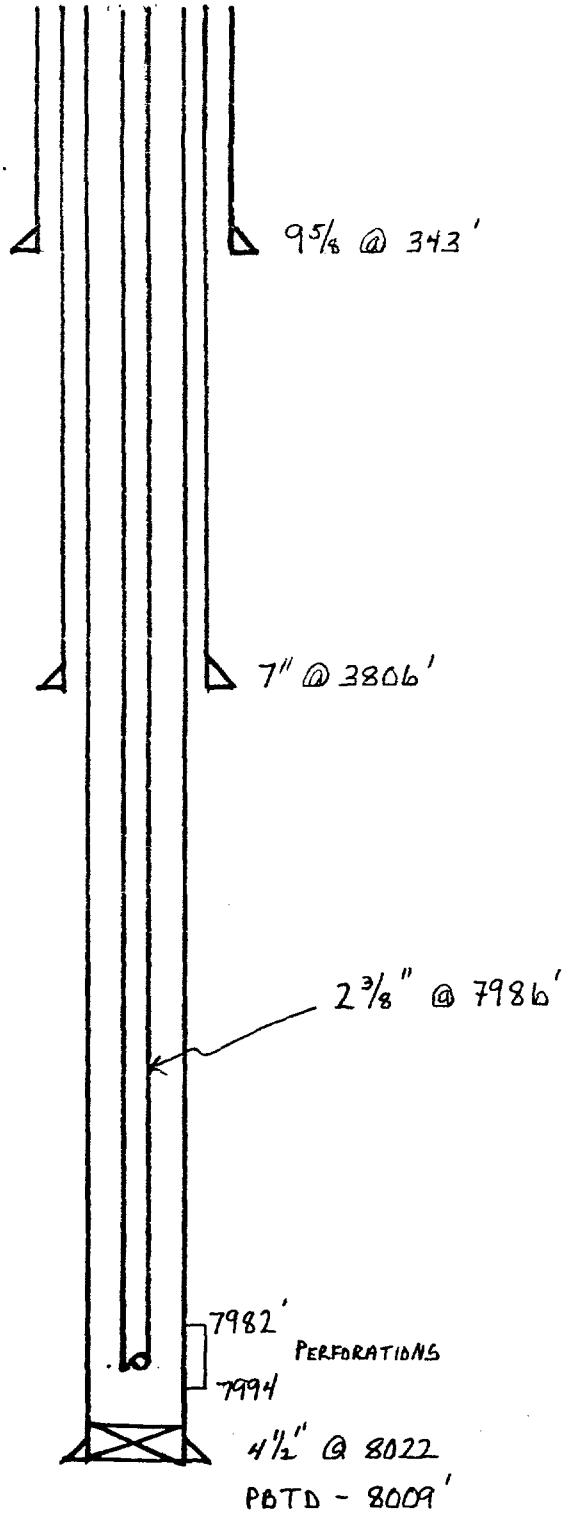
AUTOMATIC ELIMINATION 10-27-54

DAKOTA PARTICIPATING A

12'th Expansion 8-1-78

13th Expansion 9-1-78

SAN JUAN 29-5 UNIT #88



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, New Mexico 87501

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Side 1

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MAR 12 1985

OIL CON. DIV.
DIST. 3

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NORTHWEST PIPELINE CORPORATION
PRODUCTION & DRILLING
P.O. BOX 90
FARMINGTON, NEW MEXICO 87499

February 25, 1985

Frank Chavez
New Mexico Oil Conservation Div.
1000 Rio Brazos Rd.
Aztec, NM 87410

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Sincerely,

Mark McCallister
Production & Drilling Engineer

MAM/cnh
cc: File

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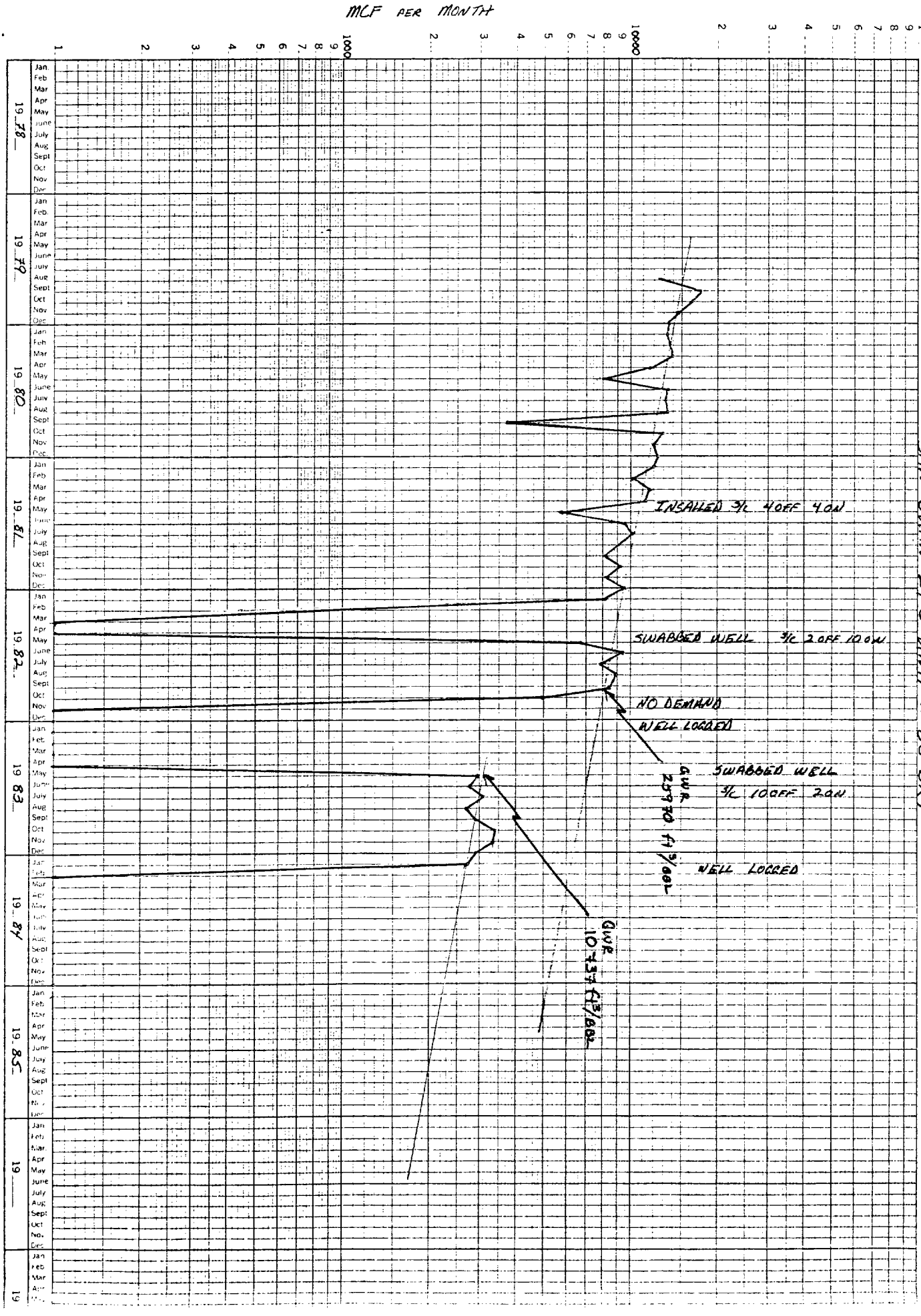
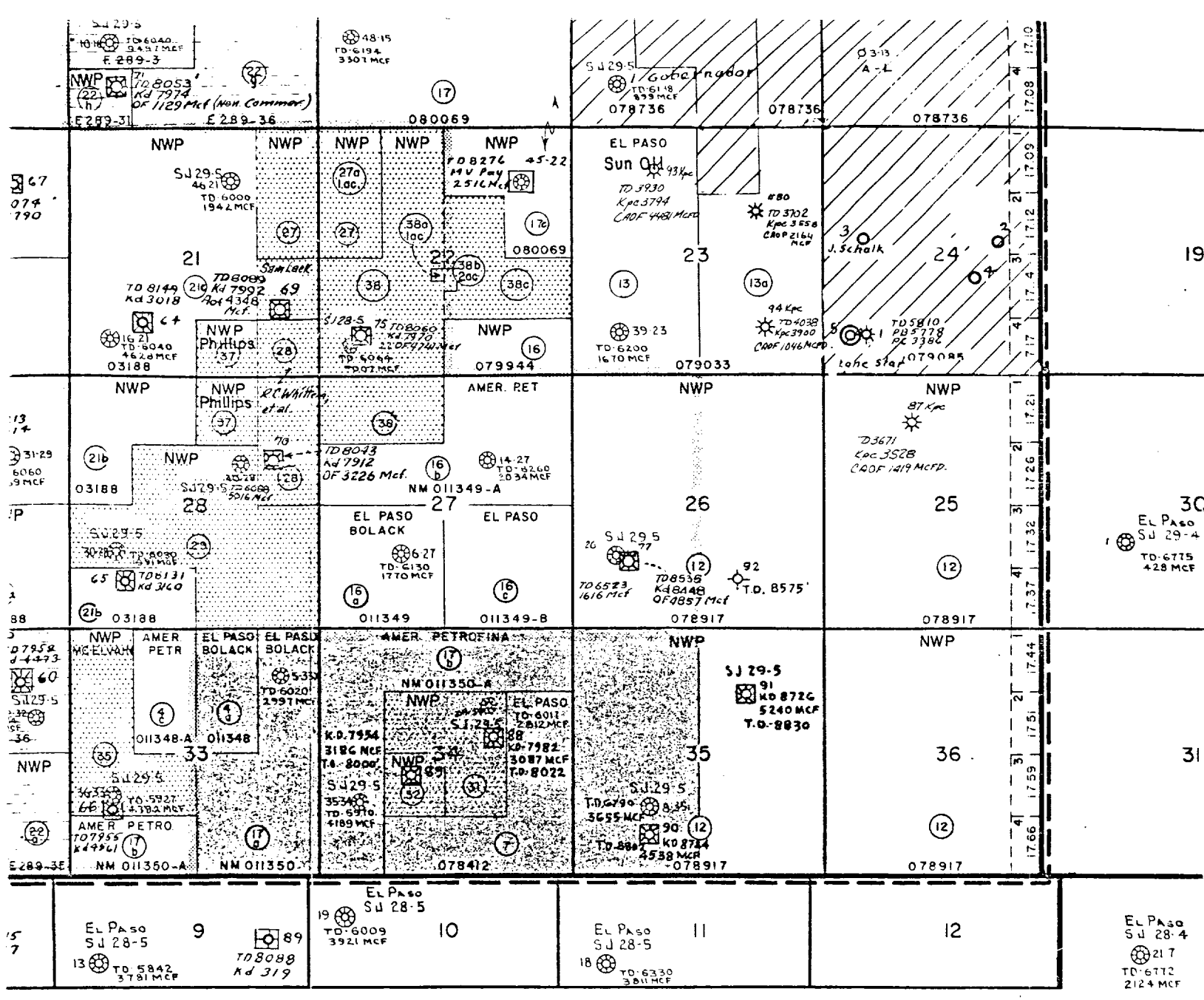

MCF PER MONTH
1. 2. 3. 4. 5. 6. 7. 8. 9. 1000 2. 3. 4. 5. 6. 7. 8. 9. 10000 2. 3. 4. 5. 6. 7. 8. 9. 1
19 78
19 79
19 80
19 81
19 82
19 83
19 84
19 85
19
Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec
SAN JUAN 29-5 UNIT # 88 DK.
INSALLED 3/c 4 OFF 4 ON
SWABBED WELL 3/c 2 OFF 10 ON
NO DEMAND
WELL LOGGED
GWR 2370 Ft 3/82
SWABBED WELL
3/c 10 OFF 2 ON
WELL LOGGED
GWR 1073 Ft 3/82



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RIO ARRIBA COUNTY NEW MEXICO

APPROVED 21 NOVEMBER 1952

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