MERIDIAN OIL

August 8, 1991

Mr William J. LeMay
N. M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87501-2088

Re: McClanahan #3 PC/FRTC
1700' FSL 990' FWL
Section 24, T28N R10W
San Juan County, N. M.

Dear Mr. LeMay:

Meridian Oil Inc. is applying for an administrative downhole commingling order for the referenced well in the Fulcher Kutz Pictured Cliffs and Basin Fruitland Coal fields. The ownership of the zones to be commingled is common. The offset operator to the southwest is Amoco with Meridian Oil operating the remaining drilling blocks surrounding the referenced well. The Bureau of Land Management and this offset operator will receive notification of this proposed downhole commingling.

The subject well was completed in the Pictured Cliffs in April 1955 and first delivered to pipeline in August 1955. The Pictured Cliffs has a cumulative production of 721 MMCF with a current producing capacity of about 45 MCF/D.

The Pictured Cliffs is producing at a low but still economical rate which eliminates the possibility of plugging and opening the Fruitland Coal as a single. The well's 3-1/2" casing makes a dual well very difficult and risky. In addition, the Fruitland Coal in the vicinity has proved to be very erratic which adds a higher risk to any coal project. It is concluded that commingling the Pictured Cliffs with the Fruitland Coal in this drilling block is the most efficient way to produce these two marginal intervals. Granting this application will be in the best interest of conservation, the prevention of waste, and the protection of correlative rights.

We plan to commingle this well by pulling the tubing, setting a bridge plug between the Pictured Cliffs and the Fruitland Coal, perforating the 3-1/2" casing in the Fruitland Coal intervals and stimulating. The bridge plug will then be removed and a tubing string run to the lower producing interval.

The reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed downhole commingling. Neither producing interval should make oil or water. The daily production will not exceed the limit of Rule 303c, Section 1a, Part 1. The shut-in pressures for the Pictured Cliffs and Fruitland Coal are 225 psi and 378 psi, respectively.

The District Office in Aztec will be notified anytime the commingled well is shut-in for seven (7) consecutive days.

Using the well's most recent production from the Pictured Cliffs, the attached allocation formula was calculated. This formula insures that all the Pictured Cliffs reserves will be attributed to the PC using common Reservoir Engineering equations for traditional sandstone reservoirs. Any and all other reserves will be attributed to the Fruitland Coal reservoir. This addresses the common Fruitland Coal producing characteristic of increasing production rate early in the life of some coal wells. The formula also addresses and solves the possible problem of pipeline curtailment.

Yours truly,

G. T. Dunn
Regional Production Engineer

attachments

cc: Frank Chavez - OCD

MERIDIAN OIL

August 8, 1991

Bureau of Land Management
1235 La Plata Hwy.
Farmington, N. M. 87401

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for their McClanahan #3 PC/FRTC well located 1700' FSL 990' FWL, Section 24 T28N R10W, N.M.P.M., San Juan County, New Mexico, in the Fulcher Kutz Pictured Cliffs and the Basin Fruitland Coal.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, we would appreciate your signing the attached copy of this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Yours truly,

G. T. Dunn
Regional Production Engineer

PMP:pmp

The above downhole commingling request is hereby approved:

_____

Date:_____

Meridian Oil Inc., 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-327-0251

MERIDIAN OIL

August 8, 1991

Amoco Production Company
Attn: Mr. Larry Emmons
P.O. Box 800
Denver, Colorado 80201

Dear Mr. Emmons:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for their McClanahan #3 PC/FRTC well located 1700' FSL 990' FWL, Section 24 T28N R10W, N.M.P.M., San Juan County, New Mexico, in the Fulcher Kutz Pictured Cliffs and the Basin Fruitland Coal.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, we would appreciate your signing the attached copy of this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Yours truly,

G. T. Dunn
Regional Production Engineer

PMP:pmp

The above downhole commingling request is hereby approved:

_____

Date:_____

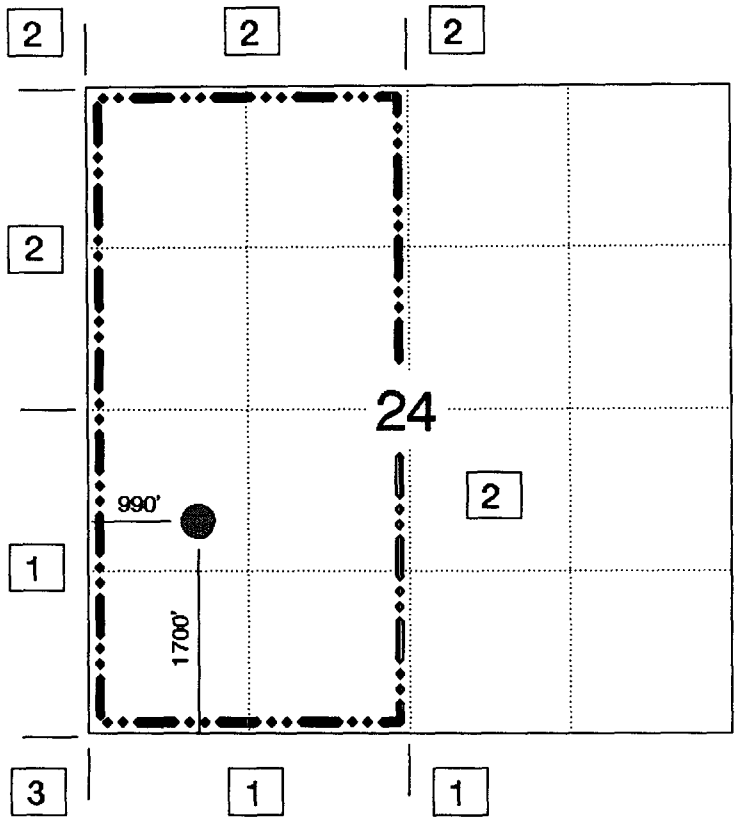
Meridian Oil Inc., 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-327-0251

MERIDIAN OIL INC

OFFSET OPERATOR PLAT

McCLANAHAN #3

Township 28 North, Range 10 West



1) Meridian Oil Inc
2) Southland Royalty Company
3) Amoco Production Company

COMMINGLE PICTURED CLIFFS AND FRUITLAND COAL

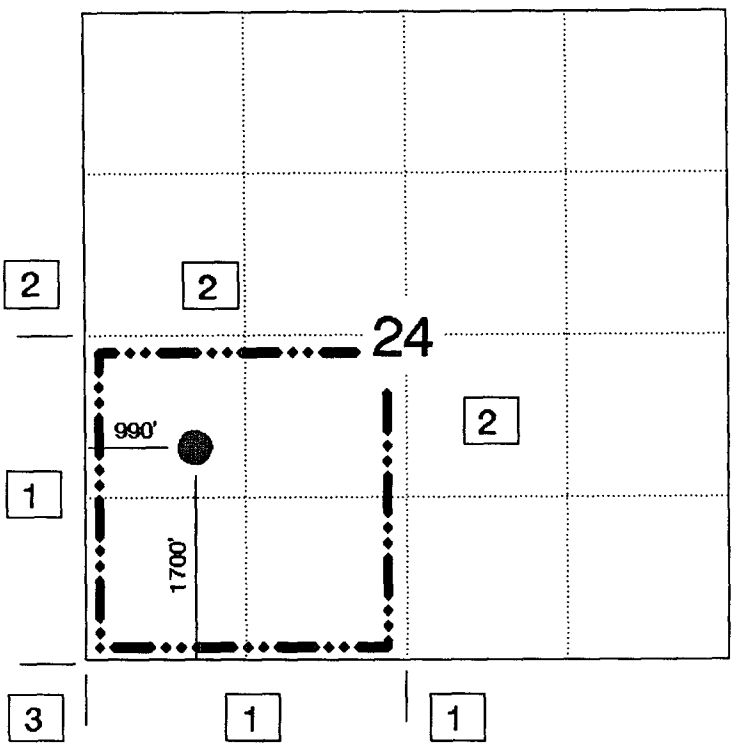
Fruitland Coal Formation Ownership

MERIDIAN OIL INC

OFFSET OPERATOR PLAT

McCLANAHAN #3

Township 28 North, Range 10 West



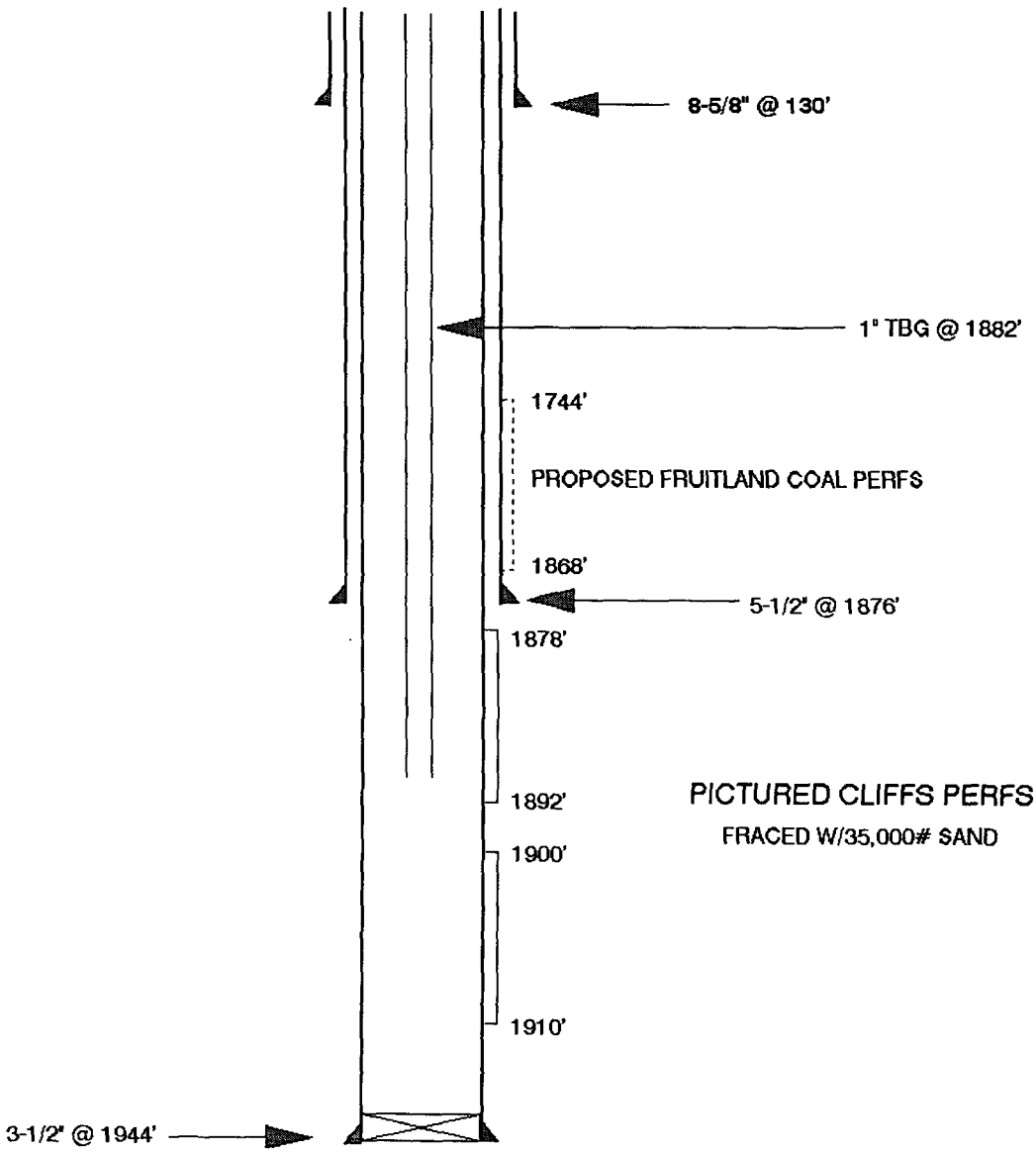
1) Meridian Oil Inc
2) Southland Royalty Company
3) Amoco Production Company

COMMINGLE PICTURED CLIFFS AND FRUITLAND COAL

Pictured Cliffs Formation Ownership

McCLANAHAN #3 PC

UNIT L SECTION 24 T28N R10W
SAN JUAN COUNTY, NEW MEXICO



Pertinent Data Sheet - McCLANAHAN #3 PC

Location: 1700' FSL 990' FWL, SEC. 24 T28N R10W, SAN JUAN COUNTY, N.M.

Field: Fulcher Kutz Pictured Cliffs **Elevation:** 5764'GR **TD:** 1948'
10'KB **PBTD:** ????

Completed: 4-13-55 **GWI:** 100.00%
NRI: 87.00%
DP Number: 46472

Initial Potential:
AOF=2796 MCF/D 626 PSI

Casing Record:

Hole Size	Csg. Size	Wt. & Grade	Depth Set	Cement	Top/Cmt.
	8-5/8"	24.0# J-55	130'	125 sx	N/A
8-3/4"	5-1/2"	14.0# J-55	1876'	100 sx	N/A
	3-1/2"	7.7# K-55	1944'	300 sx	N/A

Tubing Record:

89 jts.	1"	N/A	1882'

Formation Tops:

Ojo Alamo	836'
Kirtland	260'
Fruitland	1640'
Pictured Cliffs	1875

Logging Record: Electric Log, Micro Log

Stimulation: Sand oil frac 1876'-1968' w/8190 gals diesel & 7500# sand.

Workover History: 2-23-71 TOH w/tbg. Ran 3-1/2" csg to 1944' & cmt w/300 sx. Perf PC 1878'-1892', 1900'-1910' w/4 spf. Fraced w/35,000# sand. Ran 1" tbg to 1882'.

Production History: 1st delivery in 8-55. Capacity = 20 MCF/D. Line pressure = 275 psi. Cumulative = 721 MMCF.

McClanahan #3 Allocation Formula

Equation Derivation

Given the exponential decline curve analysis formula*:

$$De = 1-(Q_2/Q_1)^{(1/yr)}$$

Where: DE - Effective Decline in %/yr
Q_2 = Rate two (at some future date) MCFD
Q_1 = Rate One (current rate) MCFD
Yr = years into the future from current date

Rearranging the equation to solve for $Q/_2$:

$$Q_2 = Q_1 (1-De)^{yr} \text{ MCFD}$$

McClanahan #3 Formula

Using Production plot (fig 1):

Last production rate = Q_1 = 937 MCFM $\cong$ 31 MCFD
De = 8.000 from plot

$$Q_{2_{pc}} = 31 (1 - 0.08000)^{yr} \text{ MCFD}$$

$$\mathbf{Q_{2_{pc}} = 31 (0.92000)^{yr} \text{ MCFD}} \quad \textbf{FORMULA FOR FUTURE PC RATES}$$

Any production rate over what is calculated using the above PC formula on a specific date is Fruitland Coal.

Curtailment Situations

If any curtailment occurs, both streams will be affected the same and go to 0 MCFD.

When production resumes the rates will equate to those when the well was shut in:

$$Q_{2_{pc}} = 31 (0.92000)^{(yr - \text{cumulative curtailment time})}$$

$$Q_{FTC} = Q_{TOT} - Q_{PC}$$

$$Q_{TOT} = Q_{FTC} + Q_{PC}$$

The total amount of PC gas produced will be the EUR calculated through decline curve and P-Cum analysis (see plot).

*Reference: pg. 5-46 Oil Property Evaluation
by R. S. Thompson & J. D. Wright

Example: Date Now = 1/1/91

Assuming the well produces steadily in 1991. On 1/1/92, the well produces 300 MCFD.

Q_1 = 31 MCFD De = 8.000 %

$Q_{PC} = 31\ (0.92000)^{(yr\ -\ cumulative\ curtailment\ time)}$

$Q_{PC} = 31\ (0.92000)^{(1-0)} = 29$ MCFD

$Q_{TOT} = 300$ MCFD $= Q_{PC} + Q_{FTC}$

$Q_{FTC} = 300 - 29 = 271$ MCFD

Then on 1/2/92, the well gets shut in for 1 month:

On 2/2/92, assume that the PC stream will come back on line at the same rate it left off. Or:

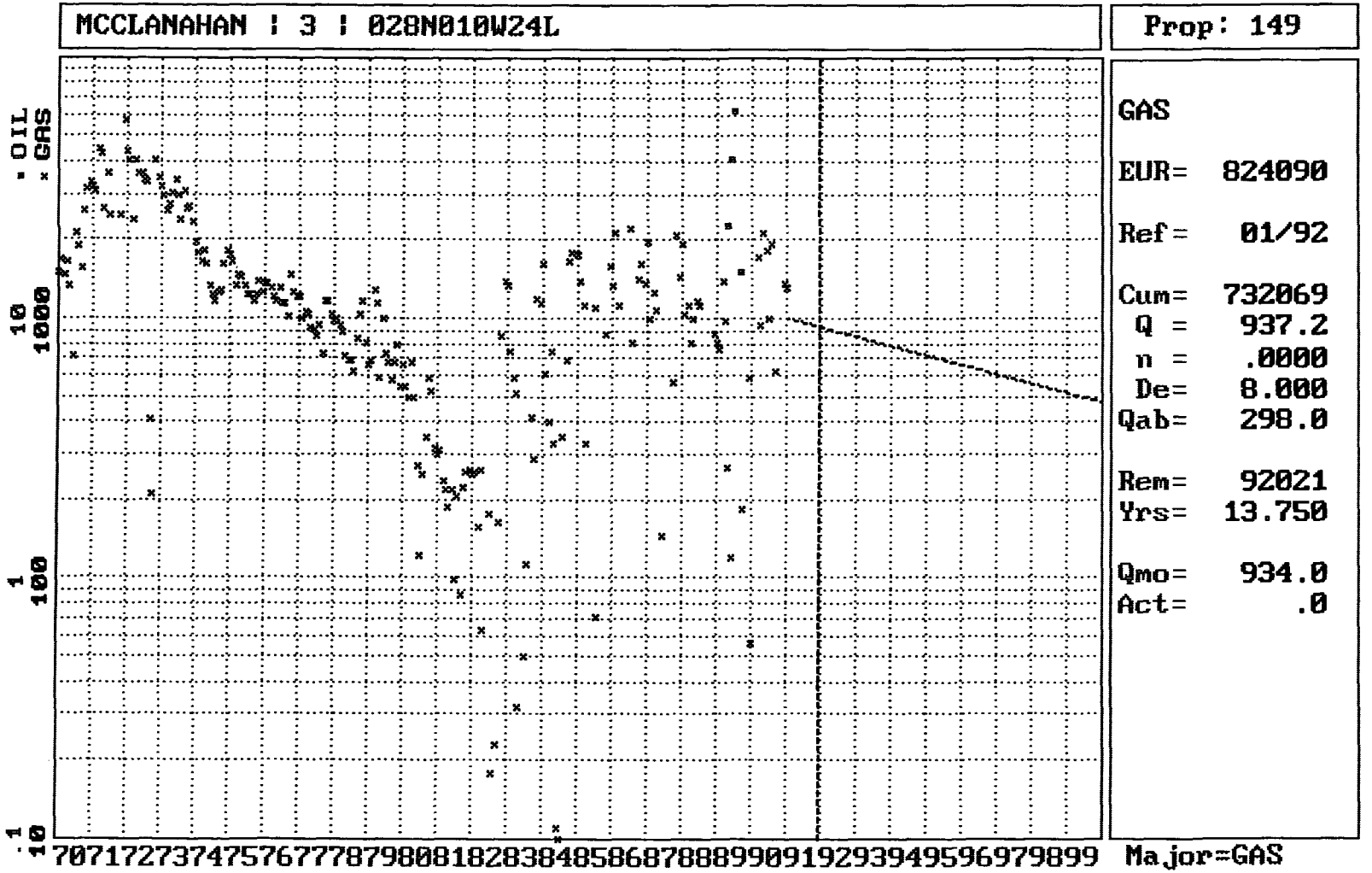
1 month curtailment = 1/12 = 0.0833

Tot. Time = 1 yr + 1 month = 1 1/12 = 1.0833

$Q_{PC} = 31\ (0.92000)^{(1.0833\ -\ .0833)} = 29$ MCFD

$Q_{TOT} = 300$ MCFD

$Q_{FTC} = 271$ MCFD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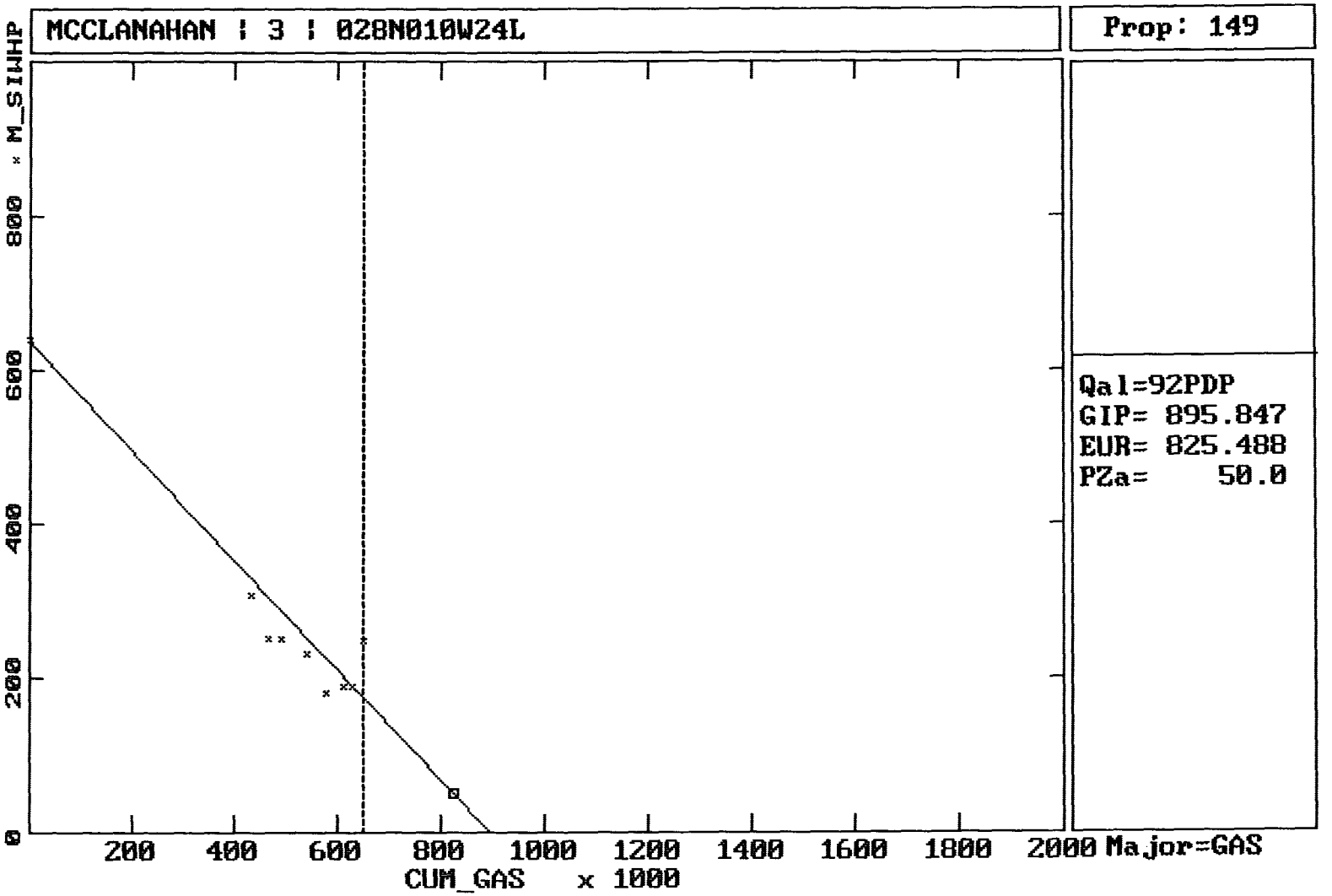
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