

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

August 16, 1991

Amoco Production Company
P.O. Box 800
Denver, Colorado 80201

Attention: J.W. Hohle

*RE: Injection Pressure Increase
Mudge "LS" Well No. 16
San Juan County, New Mexico*

Dear Sir:

Reference is made to your request dated July 10, 1991, to increase the surface injection pressure on the Mudge "LS" Well No. 16. This request is based on a step rate test conducted on the well on June 28, 1991. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following well.

WELL AND LOCATION

MAXIMUM INJECTION
SURFACE PRESSURE

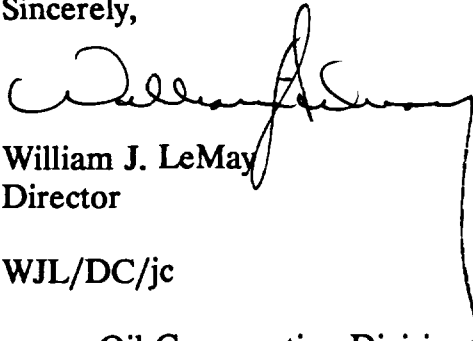
Mudge "LS" Well No. 16
Unit B, Section 10, T-31 North, R-11 West, NMPM
San Juan County, New Mexico

3000 PSIG

Amoco Production Company
August 15, 1991
Page 2

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

A handwritten signature in black ink, appearing to read "William J. LeMay". The signature is written in a cursive style with a long horizontal stroke extending to the right.

William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Aztec
File: Case No. SWD-396 ✓
D. Catanach
R. Brown



Amoco Production Company

Amoco Building
1670 Broadway
Post Office Box 800
Denver, Colorado 80201
303-830-4040

July 10, 1991

New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

OIL CONSERVATION
DIVISION
DIST. 3

File: JWH-130-400

Request for Increase in Surface Injection Pressure
Administrative Order No. SWD-396
Mudge LS 16
NE/4 Section 10, T31N R11W
San Juan County, New Mexico

Amoco requests that the surface injection pressure limitation for the subject well be increased from 1486 psi to 3000 psi. Note the attached plot of bottom hole pressure versus rate for a step rate test (SRT) performed by Amoco on June 28, 1991, and witnessed by the NMOCD. The SRT was performed down 2 3/8" tubing and consisted of 1 hour time steps. The resulting formation parting pressure was 5900 psia bottom hole, and 3000 psig at the surface. Bottom hole pressures were measured with a downhole recorder set at 7500'.

Based on the data collected during the step rate test, Amoco will be unable to inject into the well at any rate under the current 1486 psi limit. An increase in the pressure limitation will allow Amoco to pump 500-1000 BWPD in the unstimulated Morrison formation and still remain below the formation parting pressure.

If you have questions regarding this request, please call Paul Edwards in Denver at (303) 830-5572.

J. W. Hohle
Resource Manager

PAE/mlg

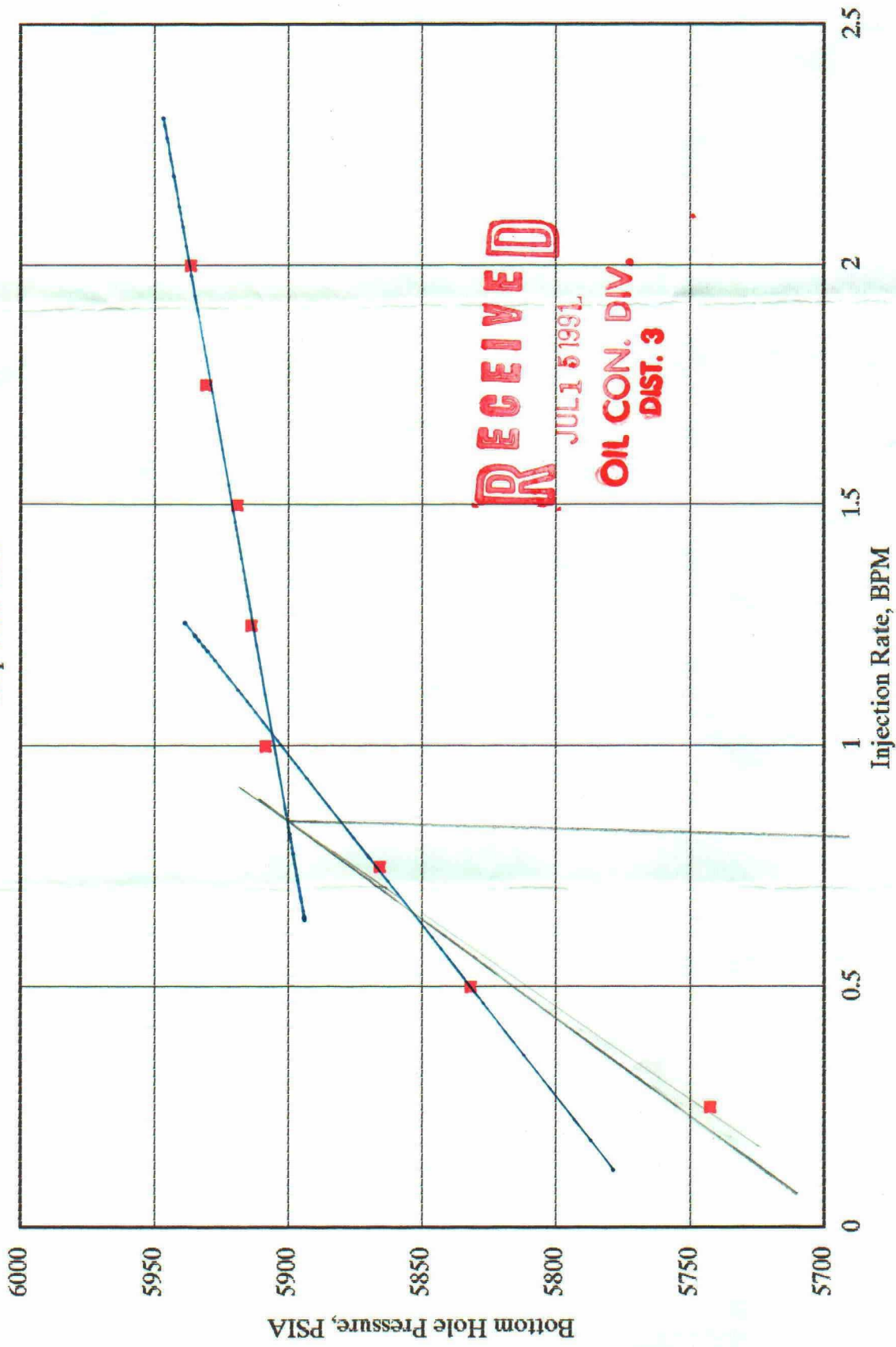
Attachment

cc: New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504
J. W. Hawkins - Amoco, Denver
B. D. Shaw - Amoco, Farmington

OIL CONSERVATION DIVISION
REC'D
91 JUL 17 AM 9 46

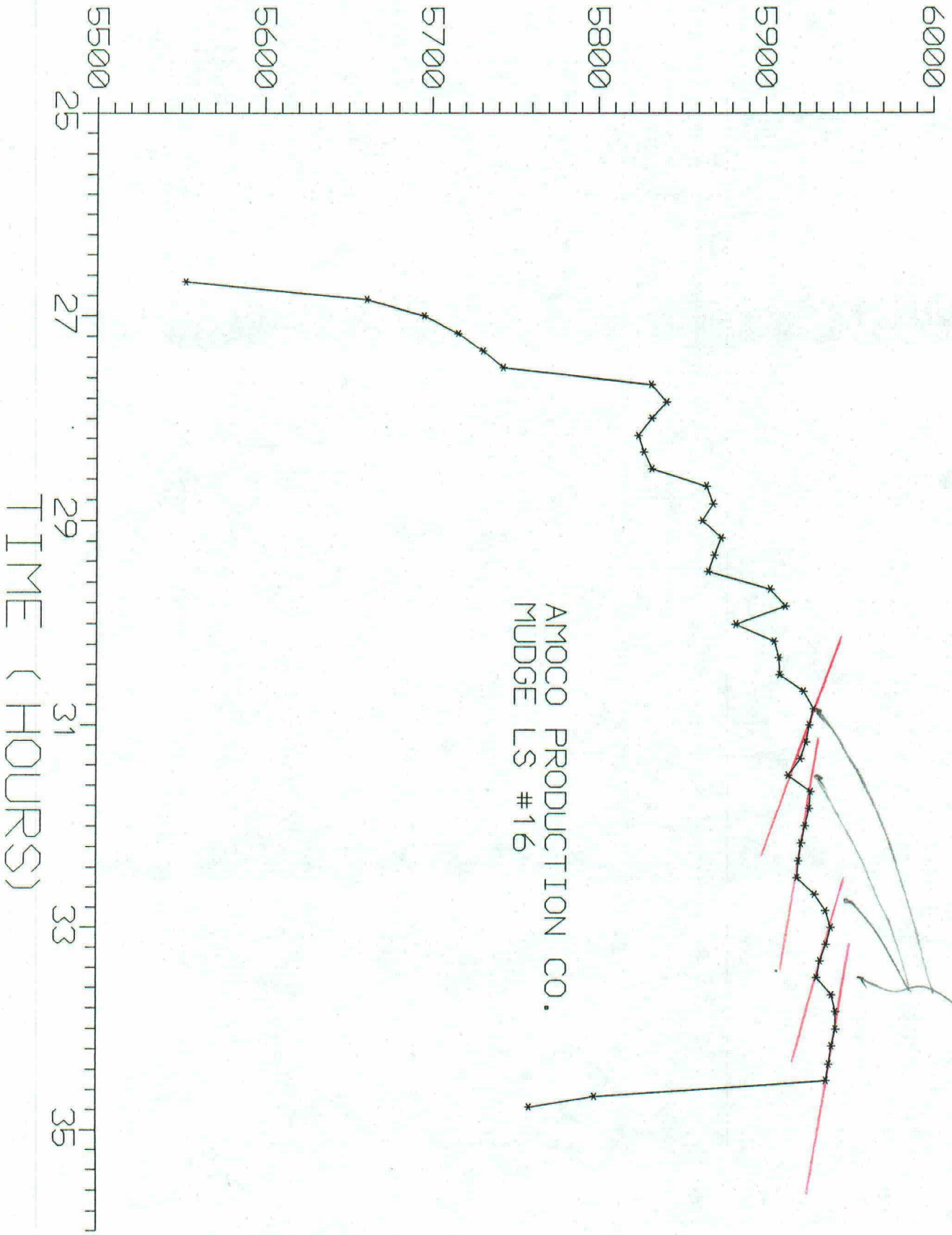
MUDGE LS 16

Step Rate Test



1 hr steps
BHP meas. @ 7500'

BOTTOM HOLE PRESSURE



Possible fracture propagation?

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other Coal Seam

2. Name of Operator

Amoco Production Company Attn: John Hampton

3. Address and Telephone No.

P.O. Box 800, Denver, Colorado 80201

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

920' FNL, 1650' FEL, Sec. 10, T31N-R11W

5. Lease Designation and Serial No.

SF-078040

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Mudge LS 16

9. API Well No.

30 045 10940

10. Field and Pool, or Exploratory Area

Basin Dakota

11. County or Parish, State

San Juan, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other Injection Pressure Increase
☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Amoco Production Company requests that the surface injection pressure limitation for the subject well be increased, please see attached:

If you have any questions please call Julie Zamora, at 303-830-6003.

14. I hereby certify that the foregoing is true and correct

Signed

John Hampton

Title Sr. Staff Admin. Supv.

Date 7/12/91

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State, pursuant to applicable State law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

SPECIFIC INSTRUCTIONS

Item 4—If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 13—Proposals to abandon a well and subsequent reports of abandonment should include special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et. seq., 351 et. seq., 25 U.S.C. et. seq.; 43 CFR 3160.

PRINCIPAL PURPOSE — The information is to be used to evaluate, when appropriate, approve applications, and report completion of secondary well operations, on a Federal or Indian lease.

ROUTINE USES:

- (1) Evaluate the equipment and procedures used during the proposed or completed subsequent well operations.
- (2) Request and grant approval to perform those actions covered by 43 CFR 3162.3-2(2).
- (3) Analyze future applications to drill or modify operations in light of data obtained and methods used.

- (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION — Filing of this notice and report and disclosure of the information is mandatory once an oil or gas well is drilled.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501, et. seq.) requires us to inform you that: This information is being collected in order to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

This information will be used to report subsequent operations once work is completed and when requested, to obtain approval for subsequent operations not previously authorized.

Response to this request is mandatory for the specific types of activities specified in 43 CFR Part 3160.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Alternate) Bureau Clearance Officer, (WO-771), 18 and C Streets, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project (1004-0135), Washington, D.C. 20503.