

MERIDIAN OIL

NEW MEXICO OIL CONSERVATION DIVISION
RECEIVED
'90 NOV 8 AM 9 44

November 5, 1990

Amoco Production Company
Attn: Mr. T.D. Autry
P.O. Box 800
Denver, CO 80201

FILE - SWD - 396

RE: Waiver of Objection
Amoco SWD Request
Mudge LS 16 SWD
NE/4 Sec. 10, T-31-N, R-11-W
San Juan County, New Mexico

Gentlemen:

Meridian is in receipt of your October 22, 1990 letter whereby Amoco advised of the New Mexico Oil Conservation Division approval of the referenced well. Amoco also advises that it will complete the well as described in Amoco's August 16, 1990 letter.

Meridian has objected to your proposed well on two prior occasions (copies of letters of July 10, 1990 and September 17, 1990 enclosed). Meridian strongly believes that a 100 foot interval below the bottom of the Dakota formation provides proper protection from disposal water contamination.

Amoco has advised the top perforation will be 73 feet below the base of the Dakota formation, that the disposal zone (Morrison) will not be fracture stimulated, and a step rate test will be performed to determine maximum injection pressure without exceeding formation parting pressure. Amoco has assured Meridian that it will notify all appropriate parties should future fracture stimulation be necessary.

Under these provisions, Meridian will waive its prior objections to the proposed well.

Yours very truly,



S.W. Nance
Regional Engineering Manager

SWN/TFH/sf
ID.#122+20
NM-391
NM-4010

cc: New Mexico Oil Conservation Division
State Land Office Building
Attn: Mr. W.J. LeMay
P.O. Box 2088
Santa Fe, New Mexico 87504

MERIDIAN OIL

July 10, 1990

Amoco Production Company
Attention: Mr. Michael Cuba
1670 Broadway
Post Office Box 800
Denver, Colorado 80201

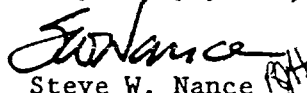
RE: Limited Waiver of Objection
Amoco SWD Request
Mudge LS 16 SWD
NE/4 Section 10, T-31-N, R-11-W
San Juan County, New Mexico

Gentlemen:

In response to your Application for Authorization to Inject received in this office June 27, 1990, Meridian Oil Inc. hereby conditionally waives any objection to your proposal. Our waiver is conditioned upon your agreement that the top perforation in the Morrison formation must be at least 100 feet below the bottom of the Dakota formation. In the Mudge LS #16 SWD well, the perforations would be from 7455 feet to 7580 feet.

If you are agreeable to the above revisions of the proposed perforated interval in the captioned well then Meridian Oil Inc. has no objection to the application. Please indicate your agreement by signing and returning one (1) copy of this letter to the undersigned

Very truly yours,



Steve W. Nance
Regional Engineering Manager

SWN:RJH:ch
File: NM-392, NM-4010
Amoco Corres.

cc: NMOCD

Agreed and accepted this _____ day of _____, 1990.

AMOCO PRODUCTION COMPANY

BY: _____

PRINT NAME: _____

TITLE: _____

MERIDIAN OIL

September 17, 1990

Amoco Production Company
Attention: Ms. Virginia Romero
1670 Broadway
Post Office Box 800
Denver, Colorado 80201

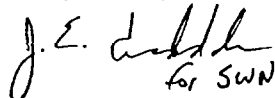
RE: Limited Waiver of Objection
Amoco SWD Request
Mudge LS 16 SWD
NE/4 Section 10, T-31-N, R-11-W
San Juan County, New Mexico

Gentlemen:

In response to your August 16, 1990 letter concerning the referenced well, Meridian Oil Inc. hereby again conditionally waives any objection to your proposal. Our waiver is conditioned upon your agreement that the top perforation in the Morrison formation must be at least 100 feet below the bottom of the Dakota formation. In the Mudge LS #16 SWD well, the perforations would be from 7455 feet to 7580 feet. Meridian has reviewed your presentation but feels that protection of the Dakota formation requires the 100 foot interval.

If you are agreeable to the above revisions of the proposed perforated interval in the captioned well then Meridian Oil Inc. has no objection to the application. Please indicate your agreement by signing and returning one (1) copy of this letter to the undersigned.

Very truly yours,


for SWN

Steve W. Nance *TFH*
Regional Engineering Manager

SWN:TFH:sf
File: NM-391, NM-4010
Amoco Corres.

cc: NMOCD

Agreed and accepted this _____ day of _____, 1990.

BY: _____

PRINT NAME: _____

TITLE: _____



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
December 10, 1990
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

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

Attention: Brooke Bell

Dear Brooke:

Reference is made to your request dated October 31, 1990, to increase the surface injection pressure on the Mudge "LS" Well No. 16 located in Section 10, Township 31 North, Range 11 West, NMPM, San Juan County, New Mexico. It is my understanding that the step rate test was conducted in July, 1988, and that the test was not witnessed by a representative of the Aztec district office of the Division. I have consulted with Mr. Frank Chavez and we have determined that the test should be reconducted and should be witnessed by the Division. It is further my understanding there may be some question as to the well's mechanical integrity as indicated by the bradenhead test conducted on the subject well. We also feel that this problem should be addressed prior to the conductance of the step rate test.

If you should have any questions regarding this action, please contact myself or Mr. Frank Chavez.

Sincerely,

David Catanach
Engineer

xc: OCD-Aztec



NEW MEXICO OIL CONSERVATION DIVISION
SANTA FE, NM 87504

'90 NOV 5 AM 8 36

Amoco Production Company

Southern Division
1670 Broadway
P O Box 800
Denver, Colorado 80201
303-830-4040

T. D. Autry
Division Production Manager

October 31, 1990

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

File: KJK - 148 - WF

Request for Increase in Surface Injection Pressure
Administrative Order No. SWD-396
Mudge LS 16
NW/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 2450 psi. Find attached a plot of surface injection pressure versus rate for a step rate test performed by Tenneco in July 1988. The step rate test was performed down 2-3/8 inch tubing with 30 minute time steps. The resulting formation parting pressure was 2470 psig surface pressure at 0.80 BPM. A bottom hole pressure bomb was not used during the test due to the low pump rates.

Based on the data collected during the step rate test Amoco will be unable to pump into the well at any rate at the current 1486 surface injection pressure limit. An increase in the pressure limitation will allow Amoco to pump 500 to 1000 bwpd in the unstimulated Morrison Formation and still remain below the formation parting pressure.

Amoco also intends to run 2-3/8 inch plastic lined tubing instead of the originally planned 2-7/8 inch tubing. The anticipated injection rate of less than a barrel of water a day does not require the use of the larger tubing string.

Should you have any questions contact Brooke Bell in Denver at (303) 830-5341.

Sincerely,

T D Autry/wbm

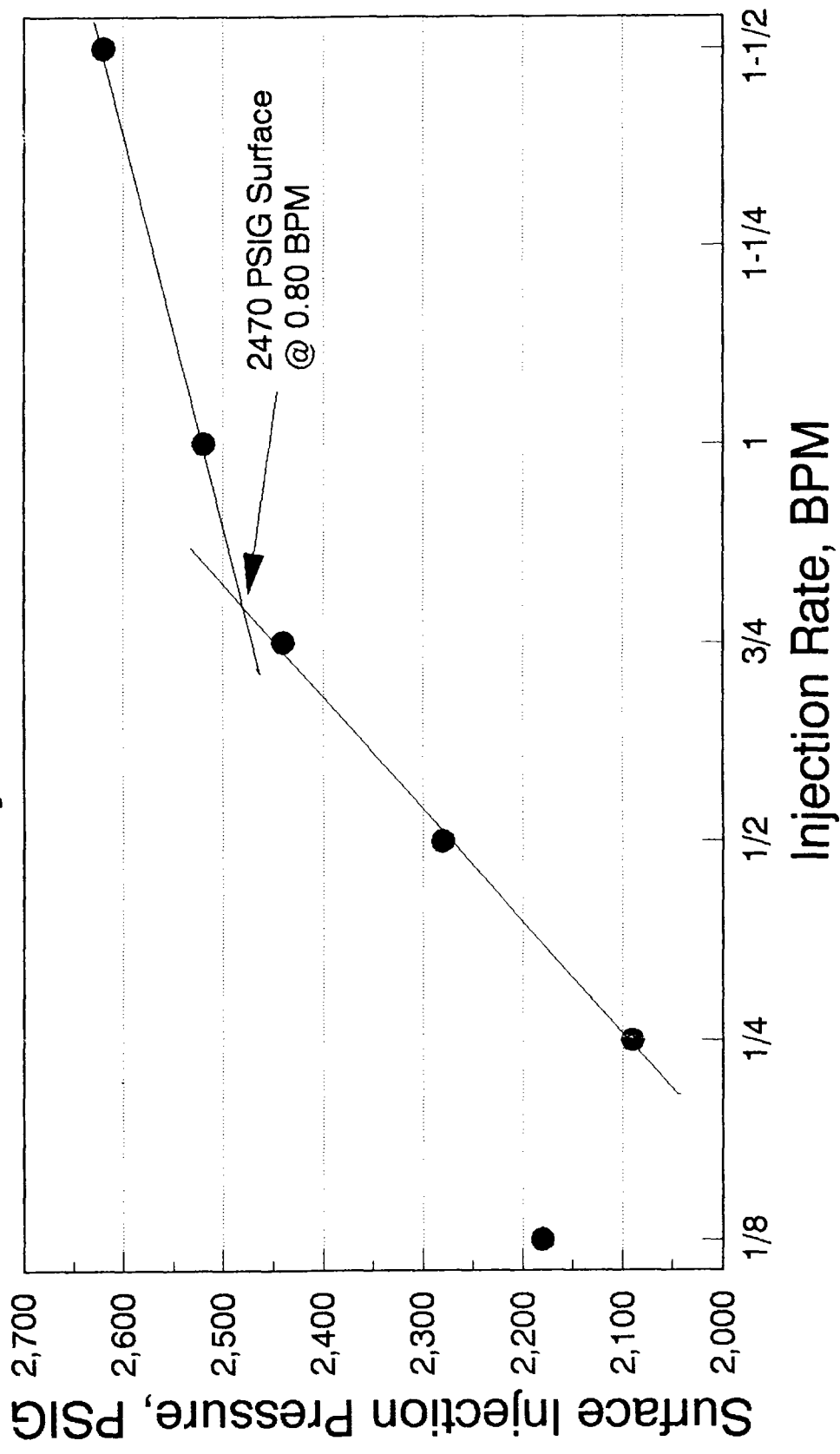
Attachment

cc: New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504
J. W. Hawkins - Building w/ attachment
B. D. Shaw - San Juan Operation Center

MUDGE LS 16

Step Rate Test

July 23, 1988





STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS RD
AZTEC, NEW MEXICO 8
15081 334-8178

BRADENHEAD TEST REPORT
(Submit 2 copies to above address)

Date of Test: 8/25/90 Operator Amoco Production Co.

Lease Name MIDDLE LS Well No. 16 Location U B Sec 10 Twp 31 Range 11

Pressure (Shut-in or Flowing) Dwt Tubing 0 Intermediate 971 Casing 178 Bradenhead 10

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH.

TIME:	PRESSURES:	
	INTERMEDIATE	CASING
5 min.	<u>971</u>	<u>178</u>
10 min.	<u>971</u>	<u>178</u>
15 min.	<u>971</u>	<u>178</u>
20 min.		<u>178</u>
25 min.	<u>Blow down</u>	<u>175</u>
30 min.		

	FLOWED:	
	BRADENHEAD	INTERMEDIATE
Steady Flow	<u>✓ 1" Steady</u>	
Surges		
Down to Nothing		<u>✓</u>
Nothing		
Gas		<u>✓</u>
Gas & Water		
Water	<u>✓</u>	

If bradenhead flowed water check description below:

Clear ✓ - 12 min

Fresh _____

Salty _____

Sulfur _____

Black ✓ - 3 min

BRADENHEAD
Remarks: FLOWED 12 min @ CLEAR

WATER - THEN TURNED TO

DRILLING MUD COLOR LAST 3 min

RECEIVED

SEP 04 1990

OIL CON. DIV.
DIST. 3

Roger L. Schaller
Pumper
(Position)