



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

GARREY CARRUTHERS
GOVERNOR

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

January 12, 1990

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

Attention: M.E. Sweeney

*RE: Injection Pressure Increase
North Vacuum Abo Unit
Lea County, New Mexico*

Dear Mr. Sweeney:

Reference is made to your request dated December 1, 1989, to increase the surface injection pressure on seven wells within the North Vacuum Abo Unit Pressure Maintenance Project. This request is based on step rate tests conducted on these wells on during November, 1989. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

| <u>WELL AND LOCATION</u> | <u>MAXIMUM INJECTION SURFACE PRESSURE</u> |
|---|---|
| NVAU Well No. 112 Unit D, Section 25 | 4051 PSIG |
| NVAU Well No. 121 Unit L, Section 13 | 3851 PSIG |
| NVAU Well No. 129 Unit B, Section 23 | 4370 PSIG |
| NVAU Well No. 139 Unit L, Section 14 | 3750 PSIG |

Injection Pressure Increase
Mobil Producing Texas and New Mexico, Inc.
January 12, 1990
Page 2

NVAU Well No. 143
Unit B, Section 27

4050 PSIG

NVAU Well No. 146
Unit B, Section 14

3850 PSIG

NVAU Well No. 149
Unit J, Section 27

3900 PSIG

All in Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

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,

William J. LeMay
Director

cc: Oil Conservation Division - Hobbs
File: PMX-138
PMX-140
WFX-557

T. Gallegos
D. Catanach

Mobil Exploration & Producing U.S. Inc.

April 4, 1990

P.O. BOX 633
MIDLAND, TEXAS 79702

MIDLAND DIVISION

State of New Mexico
Oil Conservation Division
310 Old Santa Fe Trail, Rm. 206
Santa Fe, New Mexico 87503

Attention: Mr. W. J. LeMay

INJECTION PRESSURE INCREASE REQUEST
NORTH VACUUM ABO FIELD
NORTH VACUUM ABO UNIT
WELL NO'S. #152
LEA COUNTY, NEW MEXICO

Gentlemen:

Under the provisions of Order No. PMX-140 dated March 7, 1986, permission was granted to inject water into the Abo formation for the subject wells. The order limited the pressure on the injection wells to no more than 0.2 psi. per foot to the uppermost injection interval. A step-rate test for these wells has been completed which shows that higher pressure will not result in migration of the injected fluid from the Abo formation. Permission is requested to increase the injection pressure as follows:

| | <u>INJECTION INTERVALS</u> | <u>PRESENT SURFACE INJECTION PRESSURE LIMIT</u> | <u>REQUESTED SURFACE INJECTION PRESSURE LIMIT</u> |
|--|--------------------------------|---|---|
| WELL NO. 152 UNIT B, SEC. 13 T-17-S, R-34-E Order No. PMX-140 | 8535-8595' | 3420 psig | 3960 psig |

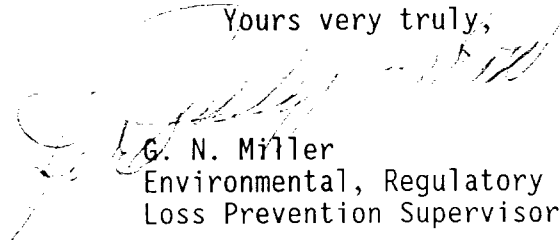
State of New Mexico
North Vacuum Abo Unit
Wells No. 152
Lea County , New Mexico

-2-

April 4, 1990

Enclosed are copies of the Step-rate test.

Yours very truly,



G. N. Miller
Environmental, Regulatory and
Loss Prevention Supervisor

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

JWDixon
Attachments
cc: District Director OCD - Hobbs

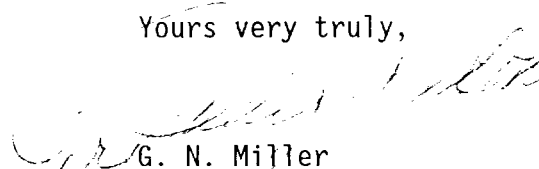
State of New Mexico
North Vacuum Abo Unit
Wells No. 152
Lea County , New Mexico

-3-

April 4, 1990

Enclosed are copies of the Step-rate test.

Yours very truly,



G. N. Miller
Environmental, Regulatory and
Loss Prevention Supervisor

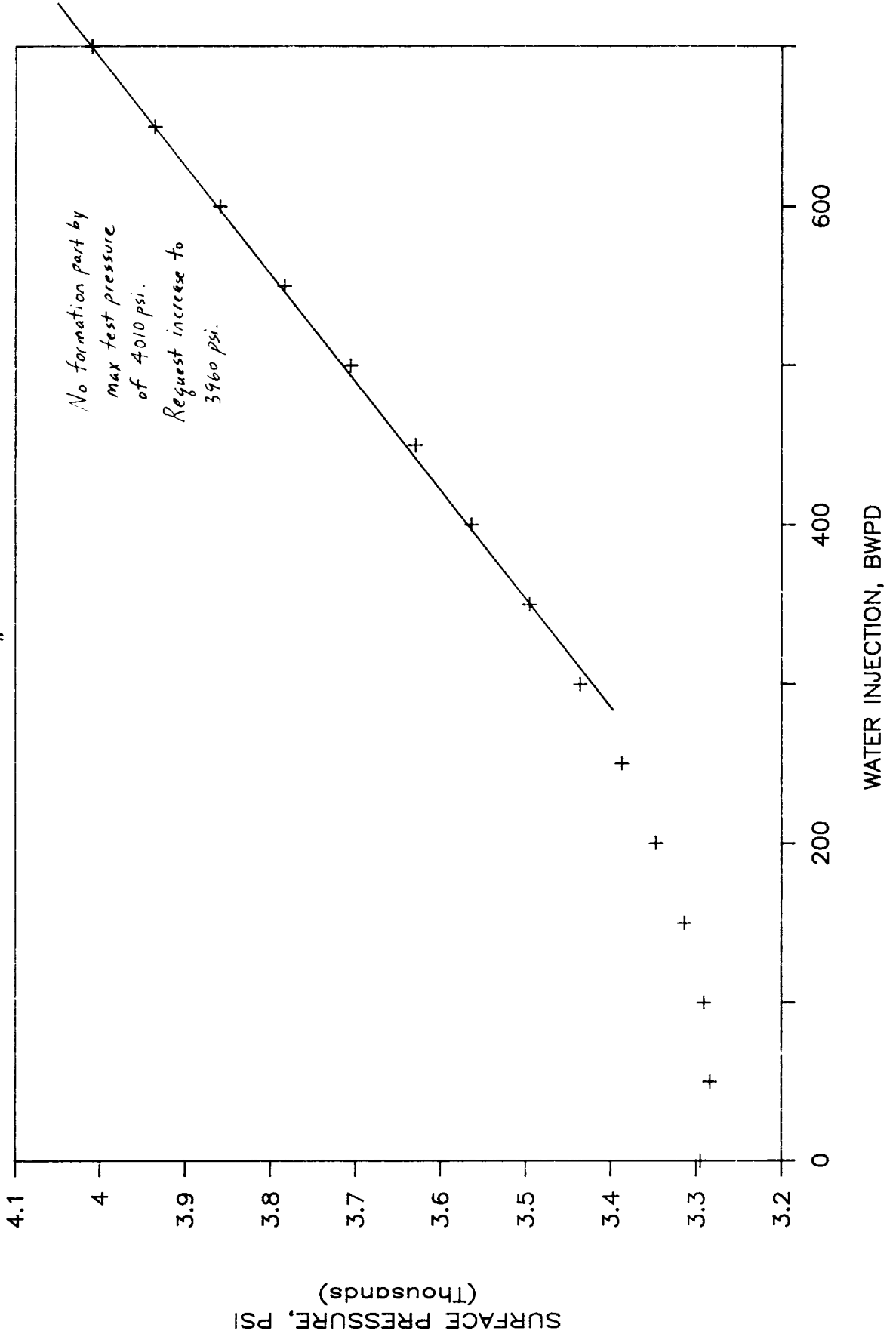
Mobil Exploration & Producing U.S. Inc.
as Agent for
Mobil Producing Texas & New Mexico, Inc.

JWDixon
Attachments
cc: District Director OCD - Hobbs

bcc: Central Files
Regulatory Files
Proration Acct.
Reservoir Engr. Mgr.
Oper. Supv. - E. R. Hanson

MOBIL STEP-RATE TEST

NVAU #152



COMPANY: Mobil Exploration & Production U. S.
 WELL NAME: NVA-1 #132
 LEASE: North Vacuum Abo Dr.
 LOCATION: Lea County, New Mexico
 Unit A, Sec 13, T17N, 33E4E
 TEST DATE: March 7, 1990

STEP-RATE TEST DATA

| SAMPLE POINT NUMBER | SAMPLE TIME | SUBMERG PRESSURE |
|------------------------|-------------|---------------------|
| 30 | 7 : 14 : 22 | 3175 |
| 31 | 7 : 15 : 22 | 3177 |
| 32 | 7 : 16 : 22 | 3178 |
| 33 | 7 : 17 : 22 | 3179 |
| 34 | 7 : 18 : 22 | 3180 |
| 35 | 7 : 19 : 22 | 3180 |
| 36 | 7 : 20 : 22 | 3181 |
| 37 | 7 : 21 : 22 | 3181 |
| 38 | 7 : 22 : 22 | 3181 |
| 39 | 7 : 23 : 22 | 3181 |
| 40 | 7 : 24 : 22 | 3181 |
| 41 | 7 : 25 : 22 | 3181 |
| 42 | 7 : 26 : 22 | 3181 |
| 43 | 7 : 27 : 22 | 3181 |
| 44 | 7 : 28 : 22 | 3181 |
| 45 | 7 : 29 : 22 | 3181 |
| 46 | 7 : 30 : 22 | 3181 |
| 47 | 7 : 31 : 22 | 3181 |
| 48 | 7 : 32 : 22 | 3181 |
| 49 | 7 : 33 : 22 | 3181 |
| 50 | 7 : 34 : 22 | 3181 |
| 51 | 7 : 35 : 22 | 3181 |
| 52 | 7 : 36 : 22 | 3181 |
| 53 | 7 : 37 : 22 | 3181 |
| 54 | 7 : 38 : 22 | 3181 |
| 55 | 7 : 39 : 22 | 3181 |
| 56 | 7 : 40 : 22 | 3181 |
| 57 | 7 : 41 : 22 | 3181 |
| 58 | 7 : 42 : 22 | 3181 |
| 59 | 7 : 43 : 22 | 3181 |
| 60 | 7 : 44 : 22 | 3181 |
| 61 | 7 : 45 : 22 | 3181 |
| 62 | 7 : 46 : 22 | 3181 |
| 63 | 7 : 47 : 22 | 3181 |
| 64 | 7 : 48 : 22 | 3181 |
| 65 | 7 : 49 : 22 | 3181 |
| 66 | 7 : 50 : 22 | 3181 |
| 67 | 7 : 51 : 22 | 3181 |
| 68 | 7 : 52 : 22 | 3181 |

STEP-RATE TEST DATA

| SAMPLE POINT NUMBER | SAMPLE TIME | | | TURBINE PRESSURE |
|------------------------|-------------|----|----|---------------------|
| 69 | 7 | 53 | 22 | 3300 |
| 70 | 7 | 54 | 22 | 3300 |
| 71 | 7 | 55 | 22 | 3300 |
| 72 | 7 | 56 | 22 | 3300 |
| 73 | 7 | 57 | 22 | 3300 |
| 74 | 7 | 58 | 22 | 3300 |
| 75 | 7 | 59 | 22 | 3300 |
| 76 | 8 | 0 | 22 | 3300 |
| 77 | 8 | 1 | 22 | 3300 |
| 78 | 8 | 2 | 22 | 3300 |
| 79 | 8 | 3 | 22 | 3300 |
| 80 | 8 | 4 | 22 | 3300 |
| 81 | 8 | 5 | 22 | 3300 |
| 82 | 8 | 6 | 22 | 3300 |
| 83 | 8 | 7 | 22 | 3300 |
| 84 | 8 | 8 | 22 | 3300 |
| 85 | 8 | 9 | 22 | 3300 |
| 86 | 8 | 10 | 22 | 3300 |
| 87 | 8 | 11 | 22 | 3300 |
| 88 | 8 | 12 | 22 | 3300 |
| 89 | 8 | 13 | 22 | 3300 |
| 90 | 8 | 14 | 22 | 3300 |
| 91 | 8 | 15 | 22 | 3300 |
| 92 | 8 | 16 | 22 | 3300 |
| 93 | 8 | 17 | 22 | 3300 |
| 94 | 8 | 18 | 22 | 3300 |
| 95 | 8 | 19 | 22 | 3300 |
| 96 | 8 | 20 | 22 | 3300 |
| 97 | 8 | 21 | 22 | 3300 |
| 98 | 8 | 22 | 22 | 3300 |
| 99 | 8 | 23 | 22 | 3300 |
| 100 | 8 | 24 | 22 | 3300 |
| 101 | 8 | 25 | 22 | 3300 |
| 102 | 8 | 26 | 22 | 3300 |
| 103 | 8 | 27 | 22 | 3300 |
| 104 | 8 | 28 | 22 | 3300 |
| 105 | 8 | 29 | 22 | 3300 |
| 106 | 8 | 30 | 22 | 3300 |
| 107 | 8 | 31 | 22 | 3300 |
| 108 | 8 | 32 | 22 | 3300 |
| 109 | 8 | 33 | 22 | 3300 |
| 110 | 8 | 34 | 22 | 3300 |
| 111 | 8 | 35 | 22 | 3300 |
| 112 | 8 | 36 | 22 | 3300 |
| 113 | 8 | 37 | 22 | 3300 |
| 114 | 8 | 38 | 22 | 3300 |
| 115 | 8 | 39 | 22 | 3300 |
| 116 | 8 | 40 | 22 | 3300 |
| 117 | 8 | 41 | 22 | 3300 |
| 118 | 7 | 42 | 22 | 3300 |
| 119 | 8 | 43 | 22 | 3300 |
| 120 | 8 | 44 | 22 | 3300 |

STEP-RATE TEST DATA

| SAMPLE POINT NUMBER | SAMPLE TIME | | | TURBIDITY PRESSURE |
|------------------------|-------------|----|----|-----------------------|
| 121 | 8 | 46 | 22 | 343.1 |
| 122 | 8 | 46 | 22 | 343.2 |
| 123 | 8 | 47 | 22 | 343.1 |
| 124 | 8 | 46 | 22 | 343.1 |
| 125 | 8 | 49 | 22 | 343.6 |
| 126 | 8 | 50 | 22 | 343.9 |
| 127 | 8 | 51 | 22 | 344.1 |
| 128 | 8 | 52 | 22 | 343.1 |
| 129 | 8 | 53 | 22 | 343.1 |
| 130 | 8 | 54 | 22 | 343.1 |
| 131 | 8 | 55 | 22 | 343.4 |
| 132 | 8 | 56 | 22 | 343.7 |
| 133 | 8 | 57 | 22 | 343.7 |
| 134 | 8 | 58 | 22 | 343.3 |
| 135 | 8 | 59 | 22 | 343.0 |
| 136 | 9 | 0 | 22 | 343.1 |
| 137 | 9 | 1 | 22 | 343.3 |
| 138 | 9 | 2 | 22 | 343.3 |
| 139 | 9 | 3 | 22 | 343.3 |
| 140 | 9 | 4 | 22 | 343.1 |
| 141 | 9 | 5 | 22 | 343.1 |
| 142 | 9 | 6 | 22 | 343.1 |
| 143 | 9 | 7 | 22 | 343.7 |
| 144 | 9 | 8 | 22 | 343.9 |
| 145 | 9 | 9 | 22 | 343.6 |
| 146 | 9 | 10 | 22 | 343.9 |
| 147 | 9 | 11 | 22 | 343.3 |
| 148 | 9 | 12 | 22 | 343.6 |
| 149 | 9 | 13 | 22 | 343.1 |
| 150 | 9 | 14 | 22 | 343.4 |
| 151 | 9 | 15 | 22 | 343.7 |
| 152 | 9 | 16 | 22 | 343.8 |
| 153 | 9 | 17 | 22 | 343.3 |
| 154 | 9 | 18 | 22 | 343.1 |
| 155 | 9 | 19 | 22 | 343.1 |
| 156 | 9 | 20 | 22 | 343.1 |
| 157 | 9 | 21 | 22 | 343.1 |
| 158 | 9 | 22 | 22 | 343.1 |
| 159 | 9 | 23 | 22 | 343.9 |
| 160 | 9 | 24 | 22 | 343.1 |
| 161 | 9 | 25 | 22 | 343.8 |
| 162 | 9 | 26 | 22 | 343.7 |
| 163 | 9 | 27 | 22 | 343.1 |
| 164 | 9 | 28 | 22 | 343.1 |
| 165 | 9 | 29 | 22 | 343.1 |
| 166 | 9 | 30 | 22 | 343.6 |
| 167 | 9 | 31 | 22 | 343.9 |
| 168 | 9 | 32 | 21 | 343.3 |
| 169 | 9 | 33 | 22 | 343.7 |
| 170 | 9 | 34 | 22 | 343.1 |
| 171 | 9 | 35 | 22 | 343.1 |
| 172 | 9 | 36 | 21 | 343.1 |

STEP-RATE TEST DATA

| SAMPLE POINT NUMBER | SAMPLE TIME | | | UBB/DH PRESSURE |
|------------------------|-------------|---|---------|--------------------|
| 173 | 9 | : | 37 : 22 | 3620 |
| 174 | 9 | : | 38 : 22 | 3620 |
| 175 | 9 | : | 39 : 22 | 3620 |
| 176 | 9 | : | 40 : 22 | 3620 |
| 177 | 9 | : | 41 : 22 | 3620 |
| 178 | 9 | : | 42 : 22 | 3620 |
| 179 | 9 | : | 43 : 22 | 3620 |
| 180 | 9 | : | 44 : 22 | 3620 |
| 181 | 9 | : | 45 : 22 | 3620 |
| 182 | 9 | : | 46 : 22 | 3620 |
| 183 | 9 | : | 47 : 22 | 3620 |
| 184 | 9 | : | 48 : 22 | 3620 |
| 185 | 9 | : | 49 : 22 | 3620 |
| 186 | 9 | : | 50 : 22 | 3620 |
| 187 | 9 | : | 51 : 22 | 3620 |
| 188 | 9 | : | 52 : 22 | 3620 |
| 189 | 9 | : | 53 : 22 | 3620 |
| 190 | 9 | : | 54 : 22 | 3620 |
| 191 | 9 | : | 55 : 22 | 3620 |
| 192 | 9 | : | 56 : 22 | 3620 |
| 193 | 9 | : | 57 : 22 | 3620 |
| 194 | 9 | : | 58 : 22 | 3620 |
| 195 | 9 | : | 59 : 22 | 3620 |
| 196 | 10 | : | 0 : 22 | 3680 |
| 197 | 10 | : | 1 : 22 | 3680 |
| 198 | 10 | : | 2 : 22 | 3694 |
| 199 | 10 | : | 3 : 22 | 3690 |
| 200 | 10 | : | 4 : 22 | 3700 |
| 201 | 10 | : | 5 : 22 | 3700 |
| 202 | 10 | : | 6 : 22 | 3700 |
| 203 | 10 | : | 7 : 22 | 3700 |
| 204 | 10 | : | 8 : 22 | 3700 |
| 205 | 10 | : | 9 : 22 | 3700 |
| 206 | 10 | : | 10 : 22 | 3700 |
| 207 | 10 | : | 11 : 22 | 3700 |
| 208 | 10 | : | 12 : 22 | 3700 |
| 209 | 10 | : | 13 : 22 | 3700 |
| 210 | 10 | : | 14 : 22 | 3700 |
| 211 | 10 | : | 15 : 22 | 3700 |
| 212 | 10 | : | 16 : 22 | 3700 |
| 213 | 10 | : | 17 : 22 | 3700 |
| 214 | 10 | : | 18 : 22 | 3700 |
| 215 | 10 | : | 19 : 22 | 3700 |
| 216 | 10 | : | 20 : 22 | 3700 |
| 217 | 10 | : | 21 : 22 | 3700 |
| 218 | 10 | : | 22 : 22 | 3700 |
| 219 | 10 | : | 23 : 22 | 3800 |
| 220 | 10 | : | 24 : 22 | 3800 |
| 221 | 10 | : | 25 : 22 | 3800 |
| 222 | 10 | : | 26 : 22 | 3800 |
| 223 | 10 | : | 27 : 22 | 3800 |
| 224 | 10 | : | 28 : 22 | 3800 |

ATEP-RATE TEST DATA

| SAMPLE POINT NUMBER | SAMPLE TIME | | | TUBING PRESSURE |
|------------------------|-------------|------|------|--------------------|
| 225 | 10 | : 29 | : 22 | 3657 |
| 226 | 10 | : 30 | : 22 | 3747 |
| 227 | 10 | : 31 | : 22 | 3839 |
| 228 | 10 | : 32 | : 22 | 3877 |
| 229 | 10 | : 33 | : 22 | 3907 |
| 230 | 10 | : 34 | : 22 | 3937 |
| 231 | 10 | : 35 | : 22 | 3967 |
| 232 | 10 | : 36 | : 22 | 3997 |
| 233 | 10 | : 37 | : 22 | 4007 |
| 234 | 10 | : 38 | : 22 | 4037 |
| 235 | 10 | : 39 | : 22 | 4067 |
| 236 | 10 | : 40 | : 22 | 4097 |
| 237 | 10 | : 41 | : 22 | 4127 |
| 238 | 10 | : 42 | : 22 | 4157 |
| 239 | 10 | : 43 | : 22 | 4187 |
| 240 | 10 | : 44 | : 22 | 4217 |
| 241 | 10 | : 45 | : 22 | 4247 |
| 242 | 10 | : 46 | : 22 | 4277 |
| 243 | 10 | : 47 | : 22 | 4307 |
| 244 | 10 | : 48 | : 22 | 4337 |
| 245 | 10 | : 49 | : 22 | 4367 |
| 246 | 10 | : 50 | : 22 | 4397 |
| 247 | 10 | : 51 | : 22 | 4427 |
| 248 | 10 | : 52 | : 22 | 4457 |
| 249 | 10 | : 53 | : 22 | 4487 |
| 250 | 10 | : 54 | : 22 | 4517 |
| 251 | 10 | : 55 | : 22 | 4547 |
| 252 | 10 | : 56 | : 22 | 4577 |
| 253 | 10 | : 57 | : 22 | 4607 |
| 254 | 10 | : 58 | : 22 | 4637 |
| 255 | 10 | : 59 | : 22 | 4667 |
| 256 | 11 | : 0 | : 22 | 4697 |
| 257 | 11 | : 1 | : 22 | 4727 |
| 258 | 11 | : 2 | : 22 | 4757 |
| 259 | 11 | : 3 | : 22 | 4787 |
| 260 | 11 | : 4 | : 22 | 4817 |
| 261 | 11 | : 5 | : 22 | 4847 |
| 262 | 11 | : 6 | : 22 | 4877 |
| 263 | 11 | : 7 | : 22 | 4907 |
| 264 | 11 | : 8 | : 22 | 4937 |
| 265 | 11 | : 9 | : 22 | 4967 |
| 266 | 11 | : 10 | : 22 | 4997 |
| 267 | 11 | : 11 | : 22 | 5027 |
| 268 | 11 | : 12 | : 22 | 5057 |
| 269 | 11 | : 13 | : 22 | 5087 |
| 270 | 11 | : 14 | : 22 | 5117 |
| 271 | 11 | : 15 | : 22 | 5147 |
| 272 | 11 | : 16 | : 22 | 5177 |



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

April 12, 1990

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 1980
HOBBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

| | | | |
|-------------------------|-----------------------|--------|----------|
| Mobil Prod TX & NM Inc. | North Vacuum Abo Unit | #152-B | 13-17-34 |
| Operator | Lease & Well No. | Unit | S-T-R |

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
Supervisor, District I

/bp

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

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2086
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

April 26, 1990

Mobil Exploration & Producing U.S., Inc.
P.O. Box 633
Midland, TX 79702

Attention: G.N. Miller

*RE: Injection Pressure Increase
North Vacuum Abo Unit Well No. 152
Lea County, New Mexico*

Dear Mr. Miller:

Reference is made to your request dated April 4, 1990, to increase the surface injection pressure on the North Vacuum Abo Unit Well No. 152. This request is based on a step rate test conducted on the well on March 7, 1990. 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

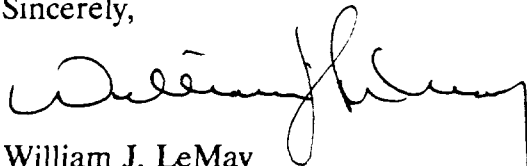
NVAU Well No. 152
Unit B, Section 13, T-17 South,
Range 34 East, NMPM, Lea County,
New Mexico.

3960 PSIG

Injection Pressure Increase
Mobil Exploration & Producing U.S., Inc.
April 26, 1990
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 cursive script, appearing to read "William J. LeMay". The signature is written in dark ink and is positioned above the printed name and title.

William J. LeMay
Director

cc: Oil Conservation Division - Hobbs
File: PMX-140
T. Gallegos
D. Catanach

NO WAITING PERIOD

COMPANY: Abil Ex. & Production - Producing Unit Inc.
ADDRESS: P.O. Box 633
CITY, STATE, ZIP: Midland, Texas 79702
ATTENTION: G. H. Miller

Re: Injection Pressure Increase

Abil Ex. & Production - Producing Unit Inc.
Well No. 150
Rea County, New Mexico

Dear Sir:

Reference is made to your request dated April 4, 1980, to increase the surface injection pressure on Abil Ex. & Production - Producing Unit Inc. Well No. 150. This request is based on a step rate test conducted on the well on March 7, 1980. 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:

| <u>Well & Location</u> | <u>Maximum Injection Surface Pressure</u> |
|--|---|
| <u>Abil Ex. & Production - Producing Unit Inc.</u> | <u>3760 PSI</u> |
| <u>Well No. 150</u> | |
| <u>Abil Ex. & Production - Producing Unit Inc.</u> | |
| <u>Midland, Texas</u> | |

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.

XC: T. GALLEGOS
D. CATANACH
FILE- PMX-140
OCD- 6/1/80