STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

January 26, 1994

CAMBELL, CARR, BERGE
& SHERIDAN
Attorneys at Law
P. O. Box 2208
Santa Fe, New Mexico 87504

RE: CASE NOS. 10869 and 10881
ORDER NO. R-10050

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

Sally Martinez
Administrative Secretary

cc: BLM Carlsbad Office
Tom Kellahin
James Bruce
Karen Aubrey
Rick Brown - OCD
Donna McDonald - OCD

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
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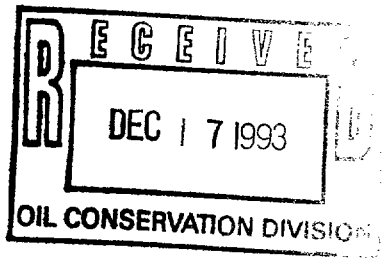
December 17, 1993

HAND-DELIVERED



Mr. David R. Catanach
Hearing Examiner
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

Re: Case No. 10869:
Application of Yates Petroleum Corporation for Amendment of the Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Pool, Eddy County, New Mexico.

Case No. 10881:
Application of Conoco Inc. to Amend Rule 5(b) and Rule 6 of the Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Pool (Division Order R-5353), and for the Extension of Said Pool, Eddy County, New Mexico.

Dear Mr. Catanach:

Pursuant to your request, enclosed is a copy of the initialization deck for the simulation study of part of the South Dagger Draw-Upper Pennsylvanian Pool which Yates offered as its Exhibit 5 in the above-referenced consolidated cases. By copy of this letter, this information is being provided to Conoco, Inc., Marathon Oil Company and Santa Fe Energy Operating Partners, L.P.

If you need any additional information from Yates for your consideration of these applications, please advise.

Very truly yours,

WILLIAM F. CARR
WFC:mlh
Enclosure
cc: Mr. Pinson McWhorter (w/enclosure)
W. Thomas Kellahin, Esq., (Conoco, Inc.)(w/enclosure)
Karen Aubrey, Esq., (Marathon Oil Corp.)(w/enclosure)
James Bruce, Esq., (Santa Fe Energy Operating Partners, L.P.)(w/enclosure)

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*C
*C
*C            ******************************************
*C            *           W O R K B E N C H            *
*C            *          R E L E A S E  01.00.04       *
*C            *     INITIALIZATION DECK FOR SIMBEST II  *
*C            ******************************************
*C            *                                        *
*C            *      PROJECT:  strip3d                 *
*C            *                                        *
*C            *      CASE:                             *
*C            *                                        *
*C            *      DATE:     15-Nov  93              *
*C            *                                        *
*C            *      TIME:     12:22:01                *
*C            *                                        *
*C            ******************************************
*C
*C
*TITLE    Dagger Draw Canyon Reservoir (3-D Strip Model)
*C
*C
*C
*C *PROJECT       strip3d
*C *CASE
*C
*C
*CONTEXT     strip3d
*C
*C
*C ------ START OF BASIC DATA
*C
*C *NOLIST
*C
*SATCORM
*C
*BLK
*C
*GRID     *XYZ       23     3      8
*C
*C            DWSTD           CW       BWINIT         VISW        TRSTD
*MISC         .99955      3.00000E-06   1.0010       .50000       140.00
*C
*STDCON      15.025       60.000
*C
*IDATE       31 12 88
*C
*C
*OUTPUT   *TABLES  *SATTAB *SW  *SO  *SOR *SG  *P  *PDAT  *KX *PHI *TZ
*C
*C
*WINIT    *HTOP *THNET *PHI *PV *RTYPE *IREG *IREGEQ
*WINIT    *KX  *KY  *KZ  *PDAT  *SW  *SG  *API  *BP
*CRVAR    *MATRIX   *CONSTANT   6.00000E-06
*C
*C
*C ------ END OF BASIC DATA
*C
*C
*C
*C ------ START OF TABULAR DATA
*C
*C
*C
*C
*C
```

```
*C        ROCK TABLE     1
*C
*C
*SATWO  *MATRIX     1
*C
*C            SW          KRW         KROW        PCOWD        PCOWI
*C         ---------   ---------   ---------   ---------   ---------
           0.0000E+00 0.0000E+00  1.000         20
            1.000       1.000      0.0000E+00  0.0000E+00
*C
*C
*C
*SWC   *CON
  .2456
*C
*C
*SORW  *CON
   .3019
*C
*C
*KROCW  *CON
  1.0
*C
*KRWRO  *CON
 0.5947
*C
*C
*C
*C
*SATGO  *MATRIX     1
*C
*C            SL          KROG         KRG         PCGOD        PCGOI
*C         ---------   ---------   ---------   ---------   ---------
           0.0000E+00 0.0000E+00  1.000       0.0000E+00
            1.000       1.000      0.0000E+00  0.0000E+00
*C
*SLR  *CON
  .5476
*C
*C
*SGC  *CON
  0.0
*C
*KRGRO *CON
  .049
*C
*KROGC
  .7174
*C
*C
*C
*C
*C
*C        ROCK TABLE     2
*C
*C
*SATWO  *MATRIX     2
*C
*C            SW          KRW         KROW        PCOWD        PCOWI
*C         ---------   ---------   ---------   ---------   ---------
           0.0000E+00 0.0000E+00  1.000         200
            1.000       1.000      0.0000E+00  0.0000E+00
*C
*SATGO  *MATRIX     2
*C
*C            SL          KROG         KRG         PCGOD        PCGOI
```

```
*C          ---------  ---------  ---------   ---------   ---------
           0.0000E+00 0.0000E+00  1.000       0.0000E+00
            1.000       1.000     0.0000E+00  0.0000E+00
*C
*C
*C
*PVTO          1    3014.6
*API        42.700       *CO   9.90000E-06  *VCO  1.44405E-04
*C
*C              PRES        RSO        VO         BO
*C             ------     ------    ------     ------
                14.6       9.79    1.2845     1.0261
                99.7      36.12    1.1974     1.0343
               214.6      65.03    1.1331     1.0440
               414.6     112.25    1.0266     1.0612
               614.7     159.12     .9331     1.0799
               814.7     206.81     .8726     1.1000
              1014.7     255.78     .8182     1.1218
              1214.7     306.26     .7654     1.1452
              1414.7     358.41     .7150     1.1702
              1614.7     412.35     .6677     1.1967
              1814.7     468.15     .6240     1.2248
              2017.7     526.79     .5833     1.2550
              2114.6     555.54     .5651     1.2699
              2214.6     585.69     .5471     1.2857
              2314.6     616.35     .5299     1.3019
              2514.6     679.29     .4976     1.3354
              2714.6     744.43     .4679     1.3705
              2914.6     811.82     .4405     1.4070
              3014.6     846.38     .4275     1.4258
              3514.6    1028.25     .3694     1.5256
              4014.6    1226.04     .3200     1.6347
              4514.6    1441.02     .2769     1.7530
              5014.6    1674.56     .2384     1.8805
              5514.6    1928.22     .2033     2.0173
              6014.6    2203.74     .1705     2.1635
*C
*C
*PVTG *BG      1     .73700
*C
*C               PRES         BG         VISG
*C             --------    --------    --------
                  14.6   205.82939      .01165
                  99.7    29.85942      .01170
                 214.6    13.61605      .01182
                 414.6     6.83082      .01209
                 614.7     4.46630      .01245
                 814.7     3.26792      .01290
                1014.7     2.54744      .01343
                1214.7     2.07009      .01407
                1414.7     1.73393      .01481
                1614.7     1.48748      .01565
                1814.7     1.30182      .01659
                2017.7     1.15738      .01763
                2114.6     1.10036      .01815
                2214.6     1.04822      .01871
                2314.6     1.00190      .01927
                2514.6      .92382      .02043
                2714.6      .86116      .02160
                2914.6      .81027      .02278
                3014.6      .78835      .02336
                3514.6      .70419      .02620
                4014.6      .64784      .02885
                4514.6      .60758      .03132
                5014.6      .57729      .03362
                5514.6      .55356      .03576
```

```
              6014.6       .53436       .03777
*C
*C
*C ------ END OF TABULAR DATA
*C
*C
*C ------ START OF GRID DATA
*C
*C
*C
*DXH      *XVAR
   600.000   600.000   600.000   600.000   600.000   600.000   600.000
   600.000   600.000   600.000   600.000   600.000   600.000   600.000
   600.000   600.000   600.000   600.000   600.000   600.000   600.000
   600.000   600.000
*C
*DYH      *YVAR
   600.000   600.000   600.000
*C
*C
*HTOP     *LAYER
*C
*C        *HTOP     FOR LAYER   1    J =   1
   3556.57   3596.03   3635.55   3675.76   3712.02   3733.01   3746.99   3758.04
   3771.81   3790.11   3809.11   3824.57   3842.67   3858.82   3877.00   3890.52
   3911.88   3926.55   3937.87   3953.24   3974.00   3993.24   4008.95
*C        *HTOP     FOR LAYER   1    J =   2
   3552.86   3591.51   3637.12   3677.62   3711.94   3731.12   3746.50   3759.80
   3772.55   3791.62   3811.62   3826.69   3842.30   3857.13   3873.23   3889.80
   3915.18   3926.37   3938.28   3953.87   3975.05   3992.66   4007.00
*C        *HTOP     FOR LAYER   1    J =   3
   3550.61   3590.09   3635.75   3677.13   3709.45   3730.74   3745.88   3760.38
   3774.33   3794.23   3815.82   3831.98   3846.65   3860.27   3874.79   3892.35
   3910.34   3924.50   3936.57   3950.99   3972.03   3989.87   4005.08
*C
*TH       *VALUE
*C
*C        *TH       FOR LAYER   1    J =   1
   18.1135   19.5943   21.3519   22.9132   25.5034   27.9415   29.7152   30.9986
   31.7228   32.0396   32.1322   32.5299   33.3998   33.9239   34.0207   32.7306
   29.6072   26.9096   26.3845   27.1066   29.6545   39.1631   46.9060
*C        *TH       FOR LAYER   1    J =   2
   25.1961   28.5361   31.8968   34.5739   36.6734   38.2431   38.6439   39.4113
   39.9009   40.3787   41.9386   43.8195   44.6558   45.3603   45.2604   46.2544
   44.7860   41.0580   36.8010   37.2664   40.5376   43.9581   46.9620
*C        *TH       FOR LAYER   1    J =   3
   38.1070   40.7770   42.5664   44.0339   43.8229   43.7853   44.5416   44.4444
   44.0506   43.7317   44.2358   44.0062   44.2224   47.4334   48.4007   48.6604
   47.7839   46.0270   43.7296   42.7195   43.2435   43.8426   44.7441
*C
*C        *TH       FOR LAYER   2    J =   1
   28.1572   31.0979   33.3150   36.7283   40.8708   44.1978   44.9007   45.4173
   46.2297   46.4831   46.3535   45.9267   45.0046   43.8813   42.4280   41.4482
   40.4032   40.2601   41.1638   42.8647   43.2376   41.9672   40.9892
*C        *TH       FOR LAYER   2    J =   2
   23.0863   23.5508   25.3200   26.4814   29.7563   32.3473   35.3658   36.4259
   37.0521   37.4334   37.2985   36.8195   36.1919   35.1592   33.3530   31.2045
   30.2522   28.5219   26.2915   28.7179   34.9535   40.7496   44.5652
*C        *TH       FOR LAYER   2    J =   3
   33.8701   31.9585   30.1824   28.2330   28.6434   28.5541   28.1821   27.8590
   27.3865   27.6892   28.3162   28.4839   27.3595   23.3339   26.8452   29.1224
   27.7849   20.1904   16.6224   17.1273   20.7037   25.9755   31.3839
*C
*C        *TH       FOR LAYER   3    J =   1
   40.3601   40.7612   41.5214   42.8960   42.7391   42.4122   42.2288   41.9319
   42.0466   41.9637   41.5105   40.5514   39.4114   38.3385   37.8354   39.0558
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   40.4703   41.9574   42.8121   42.3204   38.6452   36.4317   34.9154
*C        *TH       FOR LAYER   3    J =   2
   30.0795   30.3639   32.8747   34.1420   34.7437   35.0989   35.3724   34.9692
   34.5531   31.9840   30.7642   29.3233   26.2395   23.0632   20.5503   22.5428
   26.1770   31.8054   34.3334   32.6460   27.6748   24.9687   26.6208
*C        *TH       FOR LAYER   3    J =   3
   19.4517   19.3686   19.1290   19.2908   19.4560   19.8735   20.3476   20.6291
   20.7482   19.4500   17.9365   17.8470   17.5034   17.4692   17.5858   18.8185
   23.3813   27.3015   28.1247   29.8639   30.8695   31.0339   31.9849
*C
*C        *TH       FOR LAYER   4    J =   1
     83.86     83.81     83.47     84.18     85.35     87.09     88.06     88.58
     88.58     88.30     87.52     87.04     87.75     86.26     83.88     80.56
     76.94     82.03     79.43     70.20     65.17     59.19     54.15
*C        *TH       FOR LAYER   4    J =   2
     64.53     64.19     65.46     67.09     68.64     71.91     74.15     75.99
     77.21     77.42     78.02     79.31     79.36     77.95     75.21     70.80
     67.36     70.35     77.00     74.35     71.02     62.49     56.25
*C        *TH       FOR LAYER   4    J =   3
     63.71     63.84     65.19     66.57     67.83     67.65     68.09     68.61
     69.22     69.62     69.41     69.19     68.99     68.75     68.07     67.41
     68.06     67.17     69.13     71.17     65.65     60.47     57.02
*C
*C        *TH       FOR LAYER   5    J =   1
     45.84     45.42     44.73     44.82     44.78     45.17     46.30     47.90
     49.33     50.30     53.24     59.74     63.06     59.17     46.80     46.19
     52.76     62.61     63.18     58.94     56.91     55.85     56.37
*C        *TH       FOR LAYER   5    J =   2
     55.88     56.27     55.38     55.17     55.29     55.60     55.79     55.86
     55.97     56.36     59.21     61.49     63.45     60.55     55.89     60.83
     66.66     64.39     53.18     45.07     43.53     43.14     46.06
*C        *TH       FOR LAYER   5    J =   3
     66.39     66.74     66.81     66.79     66.85     66.55     65.88     65.05
     64.57     63.78     62.87     62.39     61.82     62.57     63.26     64.99
     64.78     60.84     45.63     38.49     38.52     40.07     42.83
*C
*C        *TH       FOR LAYER   6    J =   1
     58.36     58.97     59.87     60.61     60.89     61.28     62.15     62.25
     61.57     58.76     54.55     50.12     47.89     50.67     57.77     61.04
     64.69     78.76     91.00     99.42    106.91    114.06    119.13
*C        *TH       FOR LAYER   6    J =   2
     46.13     46.45     47.85     49.51     51.16     51.90     53.70     53.10
     50.74     49.08     47.48     45.66     45.89     50.57     55.62     56.83
     61.94     73.61     88.57     97.90    105.30    111.23    115.35
*C        *TH       FOR LAYER   6    J =   3
     45.77     46.31     46.52     47.06     47.07     47.27     47.74     47.64
     47.32     46.94     46.38     46.03     46.87     48.37     49.72     51.86
     57.37     72.33     86.29     94.72    103.19    109.19    110.18
*C
*C        *TH       FOR LAYER   7    J =   1
   40.6975   40.6231   40.3255   40.0358   40.1444   40.6172   41.7758   43.3695
   44.8542   46.8670   50.4714   51.0440   47.9960   42.7720   40.1444   41.0355
   39.2130   33.7610   28.2372   24.2276   20.5297   16.7068   15.4587
*C        *TH       FOR LAYER   7    J =   2
   33.0445   32.5008   31.7976   31.8532   32.1316   32.1274   34.1572   36.3809
   38.0770   40.2619   43.8835   47.2931   45.4481   40.9698   38.1613   40.7377
   39.5518   33.9806   27.4436   22.8200   19.6847   17.9663   21.1564
*C        *TH       FOR LAYER   7    J =   3
   26.1029   25.9065   25.8443   26.1883   26.8104   27.3313   27.9768   29.9453
   32.3427   35.6101   40.3340   43.8546   43.4027   40.1053   38.3261   40.4221
   40.3979   37.4496   31.9534   25.2150   20.3483   24.1774   33.7209
*C
*C        *TH       FOR LAYER   8    J =   1
     37.44     40.30     43.53     46.21     47.75     48.98     49.75     49.26
     48.52     45.80     39.94     35.99     35.30     34.89     32.49     28.81
     29.33     31.03     32.48     28.62     27.79     29.96     29.51
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*C        *TH        FOR LAYER   8    J =   2
     31.57      33.32      36.43      39.28      41.15      42.10      41.79      39.44
     36.47      33.12      30.85      30.30      30.56      31.10      31.50      31.21
     33.92      39.26      43.89      41.91      33.78      31.85      34.20
*C        *TH        FOR LAYER   8    J =   3
     25.34      28.24      30.51      32.71      34.60      35.50      34.96      32.21
     28.53      23.88      21.80      24.27      28.74      30.17      32.01      33.99
     39.41      43.89      44.94      44.07      41.75      41.02      45.63
*C
*THNET     *VALUE
*C
*C        *THNET     FOR LAYER   1    J =   13
      .0000      .0000      .0000      .0000      .0000      .0000      .0000      .0000
      .0000      .0000      .0000      .0000      .0000      .0000      .0000      .0000
      .0000      .0000      .0000      .0000     6.1304    16.6962    24.0393
*C        *THNET     FOR LAYER   1    J =   14
     6.1170     5.7918     6.2655     5.6779     5.2481     5.1402     5.8635     6.6820
     7.0146     7.1754     7.1632     6.9860     7.1488     8.7388     9.7881     8.4928
     7.2106     5.2638     5.0920     7.9547    13.6082    19.9643    24.1370
*C        *THNET     FOR LAYER   1    J =   15
    14.1953    15.1203    15.0022    13.8940    14.0574    14.2481    14.9359    15.3609
    14.6892    13.9940    13.2664    12.7500    13.1050    15.7715    20.5051    19.8226
    18.8398    18.2318    18.0534    20.0131    21.8934    22.5655    23.4149
*C
*C        *THNET     FOR LAYER   2    J =   13
     8.0004     8.3959     9.4469     9.6056     9.4375     8.6096     9.2198     9.8557
    10.1222    10.0631    10.0261    10.1530    10.2058    10.5584    11.2330    11.0825
    10.7667    10.0890    10.0808    10.0732     9.8952    10.9696    11.7491
*C        *THNET     FOR LAYER   2    J =   14
     3.3445     3.4789     7.2822     6.9970     5.1127      .8023     2.7675     6.2429
     9.2684     9.5773     9.6051     9.0468     6.9983     2.7433     2.6950     7.5797
     7.5871     8.1473     8.3531     8.5592     8.1731     8.9396     9.8425
*C        *THNET     FOR LAYER   2    J =   15
    10.1714     9.6192     9.4214     8.1147     5.9089     3.6151     3.5620     4.0039
     5.8640     6.5836     6.6950     6.2382     4.9918     3.7418     5.5876     6.7336
    10.0835    13.6795    14.3753    13.4405    13.4226    12.1118    10.1969
*C
*C        *THNET     FOR LAYER   3    J =   13
     9.9484    10.3659    10.5405    11.2278    12.9450    14.6070    21.0599    21.4945
    21.1541    20.9158    20.5404    19.8715    18.9593    18.2640    18.2650    18.9857
    25.3301    29.4186    31.0924    29.5728    23.0242    15.0632     8.8060
*C        *THNET     FOR LAYER   3    J =   14
     3.7765     5.5220     6.8865     7.9155     9.7431    10.2018    12.0174    12.5977
    11.2377    10.4009    10.6423     8.8642     7.4149     7.4276     6.3784     6.6996
     8.6580    10.2070    11.8243    10.0704     6.2214     4.4616     2.9472
*C        *THNET     FOR LAYER   3    J =   15
      .0000      .0000      .0000      .0000      .0000      .0000     1.9466     1.6985
     1.4732     1.3981     1.5554     1.3119     1.2702     5.9128     4.1509     3.6389
     6.9724    15.6926    21.0098    23.5132    24.9429    26.9592    28.6671
*C
*C        *THNET     FOR LAYER   4    J =   13
     49.25      52.47      55.36      57.42      59.73      61.24      63.24      65.42
     67.44      68.95      70.27      71.67      72.52      72.48      70.02      65.36
     63.03      64.51      63.28      58.91      52.44      39.53      32.33
*C        *THNET     FOR LAYER   4    J =   14
     25.08      28.59      30.35      31.73      33.74      36.51      40.07      43.53
     46.94      50.26      52.57      54.10      54.51      53.97      52.14      48.20
     43.65      45.91      51.49      54.03      50.04      38.74      31.24
*C        *THNET     FOR LAYER   4    J =   15
     21.93      23.76      24.82      25.61      26.08      26.00      26.13      27.17
     27.53      27.80      30.20      32.85      34.45      35.45      37.10      38.50
     39.66      37.55      38.40      40.30      38.54      31.64      25.36
*C
*C        *THNET     FOR LAYER   5    J =   13
    37.8599    37.2782    35.7392    34.4192    33.9456    33.8187    34.8174    36.2211
    38.0111    40.9949    45.3728    52.0660    55.8739    49.4504    37.1454    37.9320
```

```
   47.8833   57.6940   62.1566   56.1580   54.1037   54.3396   55.5210
*C        *THNET    FOR LAYER   5    J =   14
   49.9024   48.2832   46.9603   46.5417   46.6345   46.2515   46.5446   47.3715
   48.5129   50.6129   52.9391   55.8485   56.2746   51.2895   46.3551   53.3729
   60.7160   60.4638   43.1779   42.2063   41.0916   42.0254   43.3791
*C        *THNET    FOR LAYER   5    J =   15
   59.6898   59.3447   59.0219   58.4606   57.7477   56.9953   56.4267   56.1769
   56.9642   57.0468   55.1153   53.7538   53.2496   53.2454   55.6477   62.9310
   63.3916   56.2149   43.8646   36.0286   32.2893   32.1127   33.3462
*C
*C        *THNET    FOR LAYER   6    J =   13
    26.16     30.58     39.42     41.81     45.06     47.87     47.17     47.24
    47.04     45.13     42.69     41.50     41.61     50.67     57.77     61.04
    64.69     78.76     88.61     97.40    103.46    106.66    108.30
*C        *THNET    FOR LAYER   6    J =   14
    12.41     15.72     30.43     35.21     36.45     39.00     39.47     38.73
    37.73     35.65     33.95     33.13     35.54     48.06     55.10     56.83
    61.94     73.61     87.70     95.43    102.54    109.15    111.06
*C        *THNET    FOR LAYER   6    J =   15
    25.35     27.49     32.24     34.20     34.87     35.57     36.17     35.92
    35.79     34.91     34.11     34.09     35.66     38.99     46.73     51.86
    57.37     72.33     84.96     94.03    102.60    107.33    106.96
*C
*C        *THNET    FOR LAYER   7    J =   13
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
   1.4517   10.7537   22.7766   24.2276   20.5297   13.9475    9.1507
*C        *THNET    FOR LAYER   7    J =   14
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
   1.1967    9.9171   21.0155   22.4340   19.2881   17.6218   21.0503
*C        *THNET    FOR LAYER   7    J =   15
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .7971    9.6384   18.8301   21.1108   18.9543   21.3384   27.2702
*C
*C        *THNET    FOR LAYER   8    J =   13
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000    5.4667   21.7659   29.5082
*C        *THNET    FOR LAYER   8    J =   14
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000   15.7821   29.9176   34.1982
*C        *THNET    FOR LAYER   8    J =   15
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000    9.6029   27.8475   39.6032   44.0507
*C
*PHI      *VALUE
*C
*C        *PHI      FOR LAYER   1    J =   13
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
    .0000     .0000     .0000     .0000     .0083     .0279     .0458
*C        *PHI      FOR LAYER   1    J =   14
    .0485     .0514     .0550     .0463     .0344     .0309     .0293     .0287
    .0283     .0281     .0282     .0285     .0295     .0297     .0292     .0283
    .0277     .0269     .0266     .0279     .0306     .0385     .0455
*C        *PHI      FOR LAYER   1    J =   15
    .0547     .0525     .0560     .0553     .0505     .0490     .0484     .0465
    .0451     .0443     .0440     .0440     .0443     .0439     .0424     .0411
    .0418     .0406     .0397     .0396     .0406     .0416     .0418
*C
*C        *PHI      FOR LAYER   2    J =   13
    .0321     .0341     .0412     .0427     .0521     .0558     .0507     .0396
```

```
     .0404     .0407     .0413     .0425     .0429     .0434     .0385     .0404
     .0406     .0405     .0403     .0397     .0388     .0392     .0414
*C        *PHI      FOR LAYER   2    J =   14
     .0345     .0348     .0385     .0435     .0576     .0607     .0438     .0381
     .0382     .0385     .0402     .0416     .0407     .0344     .0193     .0395
     .0424     .0416     .0378     .0388     .0400     .0400     .0405
*C        *PHI      FOR LAYER   2    J =   15
     .0418     .0424     .0436     .0487     .0588     .0588     .0437     .0382
     .0368     .0357     .0381     .0396     .0411     .0366     .0320     .0394
     .0407     .0405     .0393     .0396     .0401     .0398     .0397
*C
*C        *PHI      FOR LAYER   3    J =   13
     .0608     .0623     .0712     .0581     .0529     .0515     .0476     .0495
     .0519     .0539     .0549     .0545     .0543     .0570     .0635     .0496
     .0428     .0409     .0404     .0409     .0395     .0399     .0404
*C        *PHI      FOR LAYER   3    J =   14
     .0189     .0315     .0465     .0478     .0467     .0463     .0460     .0492
     .0536     .0577     .0598     .0585     .0550     .0488     .0480     .0429
     .0410     .0404     .0330     .0308     .0308     .0304     .0359
*C        *PHI      FOR LAYER   3    J =   15
     .0000     .0000     .0000     .0000     .0000     .0000     .0015     .0031
     .0042     .0050     .0062     .0083     .0086     .0233     .0283     .0295
     .0227     .0306     .0356     .0366     .0369     .0368     .0386
*C
*C        *PHI      FOR LAYER   4    J =   13
     .0987     .0801     .0787     .0669     .0626     .0572     .0562     .0573
     .0587     .0611     .0636     .0641     .0624     .0593     .0545     .0507
     .0507     .0515     .0511     .0488     .0584     .0556     .0487
*C        *PHI      FOR LAYER   4    J =   14
     .0471     .0504     .0478     .0383     .0289     .0228     .0171     .0158
     .0169     .0199     .0254     .0281     .0257     .0205     .0162     .0143
     .0166     .0272     .0289     .0438     .0545     .0520     .0502
*C        *PHI      FOR LAYER   4    J =   15
     .0250     .0328     .0313     .0259     .0170     .0115     .0058     .0026
     .0038     .0082     .0192     .0244     .0205     .0089     .0068     .0152
     .0186     .0192     .0197     .0344     .0468     .0496     .0523
*C
*C        *PHI      FOR LAYER   5    J =   13
     .0302     .0242     .0289     .0285     .0242     .0199     .0300     .0426
     .0466     .0489     .0502     .0516     .0517     .0502     .0235     .0386
     .0472     .0496     .0501     .0513     .0517     .0520     .0517
*C        *PHI      FOR LAYER   5    J =   14
     .0493     .0474     .0463     .0459     .0451     .0443     .0466     .0495
     .0504     .0510     .0512     .0512     .0497     .0500     .0434     .0487
     .0518     .0521     .0363     .0334     .0373     .0445     .0496
*C        *PHI      FOR LAYER   5    J =   15
     .0600     .0602     .0581     .0576     .0579     .0579     .0563     .0541
     .0526     .0517     .0512     .0508     .0509     .0517     .0531     .0559
     .0535     .0468     .0297     .0250     .0299     .0393     .0467
*C
*C        *PHI      FOR LAYER   6    J =   13
     .0443     .0443     .0495     .0504     .0505     .0503     .0502     .0503
     .0505     .0505     .0500     .0496     .0481     .0459     .0420     .0492
     .0545     .0536     .0500     .0417     .0287     .0249     .0611
*C        *PHI      FOR LAYER   6    J =   14
     .0412     .0412     .0457     .0480     .0493     .0501     .0502     .0500
     .0494     .0482     .0467     .0449     .0414     .0356     .0301     .0398
     .0503     .0533     .0504     .0494     .0376     .0322     .0720
*C        *PHI      FOR LAYER   6    J =   15
     .0400     .0401     .0428     .0452     .0469     .0481     .0482     .0476
     .0461     .0441     .0418     .0395     .0371     .0354     .0308     .0312
     .0352     .0479     .0524     .0504     .0463     .0705     .1094
*C
*C        *PHI      FOR LAYER   7    J =   13
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
```

```
     .0068     .0383     .0406     .0341     .0286     .0264     .0275
*C        *PHI      FOR LAYER   7    J =   14
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0107     .0475     .0492     .0409     .0338     .0312     .0330
*C        *PHI      FOR LAYER   7    J =   15
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0238     .0513     .0521     .0481     .0422     .0389     .0402
*C
*C        *PHI      FOR LAYER   8    J =   13
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0077     .0404     .0555
*C        *PHI      FOR LAYER   8    J =   14
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0275     .0546     .0648
*C        *PHI      FOR LAYER   8    J =   15
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0000     .0000     .0000     .0000     .0000
     .0000     .0000     .0000     .0198     .0463     .0644     .0716
*C
*MOD
*C
  1  23   1  2  4  5  *MULTIPLY  8.0
 16  18   3  3  4  5  *MULTIPLY  8.0
 21  23   1  3   3  3  *SETEQUAL  0.02
 21  23   1  3   4  5  *SETEQUAL  0.04
 21  23   1  3   6  6  *SETEQUAL  0.04
 19  20   1  3   3  3  *SETEQUAL  0.06
 19  20   1  3   4  4  *SETEQUAL  0.15
 19  20   1  3   5  5  *SETEQUAL  0.06
 17  18   1  2  2  5  *MULTIPLY  0.52
  13  13   1  3  4  5  *SETEQUAL  0.01
  14  14   1  3  4  5  *SETEQUAL  0.04
  15  18   1  3  4  5  *SETEQUAL  0.10
   9  11   1  2  4  6  *MULTIPLY  0.3
  1   3   1  2  4  5  *MULTIPLY  0.5
  1   3   1  2  7  7  *MULTIPLY  0.5
 11  13   3  3  5  6  *MULTIPLY  0.0005
 14  15   3  3  4  6  *MULTIPLY  0.05
 16  18   3  3  4  5  *MULTIPLY  0.85
 19  20   3  3  4  6  *MULTIPLY  0.05
*C
*KX  *CON
  1
*C
*MOD
  1 3  1 3  4 4  *MULTIPLY  20
  1 3  1 3  5 6  *MULTIPLY  1
  5  8  1 3  4 4  *MULTIPLY  .20
  5  8  1 3  5 6  *MULTIPLY  55
  9 12  1 3  4 4  *MULTIPLY  .05
  9 12  1 3  5 6  *MULTIPLY  10
 14 15  1 3  4 4  *MULTIPLY   6
 14 15  1 3  5 5  *MULTIPLY   1
 14 15  1 3  6 6  *MULTIPLY   1
 16 17  1 3  2 2  *MULTIPLY   1
 16 17  1 3  3 3  *MULTIPLY   .25
 16 17  1 3  4 4  *MULTIPLY  .5
 16 17  1 3  5 6  *MULTIPLY  .5
 18 20  1 3  3 3  *MULTIPLY  7
 18 20  1 3  4 4  *MULTIPLY  10
 18 20  1 3  5 5  *MULTIPLY  .25
 21 23  1 3  3 3  *MULTIPLY  2
```

```
 21 23  1 3  4 4  *MULTIPLY  5
 21 23  1 3  5 5  *MULTIPLY  2
 21 23  1 3  6 6  *MULTIPLY  3
*C
*C
*C
*KY          *MULT
        1.0000*KX
*C
*C
*C
*TZ   *CON
   0
*C
*C
*RTYPE      *ZVAR
    1   1  1  1  2  2  1  1
*C
*IPVT       *CON
    1.0000
*C
*C
*IREGEQ   *ZVAR
  1  2  3  4  5  6  7  8
*C
*C
*IREG      *VALUE
*C
*C        *IREG      FOR LAYER   1    J =   13
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
*C        *IREG      FOR LAYER   1    J =   14
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
*C        *IREG      FOR LAYER   1    J =   15
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000
*C
*C        *IREG      FOR LAYER   2    J =   13
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
*C        *IREG      FOR LAYER   2    J =   14
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
*C        *IREG      FOR LAYER   2    J =   15
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000    2.0000
*C
*C        *IREG      FOR LAYER   3    J =   13
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
*C        *IREG      FOR LAYER   3    J =   14
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
*C        *IREG      FOR LAYER   3    J =   15
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000    3.0000
```

```
*C
*C       *IREG     FOR LAYER   4    J =   13
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
*C       *IREG     FOR LAYER   4    J =   14
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
*C       *IREG     FOR LAYER   4    J =   15
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000    4.0000
*C
*C       *IREG     FOR LAYER   5    J =   13
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
*C       *IREG     FOR LAYER   5    J =   14
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
*C       *IREG     FOR LAYER   5    J =   15
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000    5.0000
*C
*C       *IREG     FOR LAYER   6    J =   13
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
*C       *IREG     FOR LAYER   6    J =   14
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
*C       *IREG     FOR LAYER   6    J =   15
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000    6.0000
*C
*C       *IREG     FOR LAYER   7    J =   13
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
*C       *IREG     FOR LAYER   7    J =   14
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
*C       *IREG     FOR LAYER   7    J =   15
    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000    7.0000
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KAREN AUBREY
ATTORNEY AT LAW
236 MONTEZUMA
SANTA FE, NEW MEXICO 87501

ALSO ADMITTED IN ARIZONA

TELEPHONE (505) 982-4287
TELEFAX (505) 986-8349

December 16, 1993

HAND DELIVERED

DEC 17 1993

Mr. David Catanach
Hearing Examiner
New Mexico Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, NM 87501

Re: NMOCD Case No. 10881: The Application of Conoco Inc. for Amendment of Rules 5(b) and 6, Order R-5353, South Dagger Draw Pool, and to Expand the Pool, Eddy County, New Mexico

and

NMOCD Case No. 10869: The Application of Yates Petroleum Corporation for Amendment of Rule 5(b), Order R-5353, South Dagger Draw Pool, Eddy County New Mexico

Dear Mr. Catanach:

I enclose a proposed Order submitted by Marathon Oil Company in each of the above referenced cases.

Sincerely,

Karen Aubrey

xc: William F. Carr, Esq.
James Bruce, Esq.
W. Thomas Kellahin, Esq.
Tom Lowry, Regional Counsel
Marathon Oil Company

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING

DEC

CASE NO. 10869
ORDER NO. R-

APPLICATION OF YATES PETROLEUM CORPORATION FOR AMENDMENT OF THE SPECIAL RULES AND REGULATIONS OF THE SOUTH DAGGER DRAW-UPPER PENNSYLVANIAN ASSOCIATED POOL (DIVISION ORDER NO. R-5353), EDDY COUNTY, NEW MEXICO

PROPOSED ORDER OF MARATHON OIL COMPANY

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 4, 1993 at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this ___day of _____1993, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Yates Petroleum Corporation, is the operator of wells in the South Dagger Draw-Upper Pennsylvanian Gas Pool which was created by Division Order No. R-4637 entered October 1, 1973, and has been extended from time to time to include the following acreage:

Township 20 South, Range 24 East, N.M.P.M.

Section 9:	E/2
Section 10	S/2
Section 11	S/2
Section 12:	S/2
Sections 13 through 15:	All
Sections 22 through 26	All

Section 35:	All
Section 36:	N/2

(3) The applicant seeks to amend Rule 5(b) of Order R-5353 which precludes the simultaneous dedication of both oil and gas wells to the same unit.

(4) Marathon Oil Company appeared at said hearing and presented testimony in support of the Application.

(5) Conoco Inc. appeared at said hearing and presented testimony in support of the Application

(6) Santa Fe Energy Partners, L.P. entered its appearance in this case, but presented no testimony.

(7) Nearburg Producing entered its appearance in this case, but presented no testimony.

(8) Chevron U.S.A., Inc., entered its appearance in this case, but presented no testimony.

(9) There was no opposition by any operator or by any interested party to the subject application.

(10) Marathon Oil Company is the operator of six wells located in Section 36, Township 20 South, Range 24 East, N.M.P.M., as follows:

NAME	CLASSIFICATION	STATUS	LOCATION
Indian Hills St. Com #1	Gas	Shut-In	SW/NE
Indian Hills St. Com #3	Oil	Producing	NW/NW
Indian Hills St. Com #4	Oil	Producing	SW/NW
Indian Hills St Com #6	Gas	Shut In	NE/SW
Indian Hills St. Com #7	Gas	Shut-In	SE/NW
Indian Hills St. Com #8	Oil	Producing	SW/SW

(11) Section 36 contains two 320 acre proration units being the N/2 and the S/2.

(12) The South Dagger Draw Pool has been drilled on 40-acre spacing.

(13) The evidence shows that the S/2 of Section 36 contains one oil well, the Indian Hills St. Com #8 and one gas well, Indian Hills St. Com #6. The evidence further shows that without simultaneous dedication which is prohibited by Rule 5(b), either the oil well or gas well must be shut-in resulting in waste of oil or gas reserves.

(14) The evidence shows that the N/2 of Section 36 contains four wells. The Indian Hills St. Com #3 and #4 are producing oil wells. The Indian Hills St. Com #7 was unsuccessfully completed as an oil well and only has potential as a gas well. Indian Hills St. Com #1 is a gas well that is currently shut-in. Neither the Indian Hills St Com #1 nor the #7 can be produced since there are producing oil wells in the proration unit, resulting in waste of gas reserves.

(15) The evidence further shows that Marathon is unable to protect both its oil and its gas reserves from drainage by offset operators with the prohibition of simultaneous dedication. If Marathon chooses to produce the gas wells, it cannot protect its oil reserves when offset by an oil proration unit. Likewise, if the oil wells are produced, the correlative rights to the gas cannot be protected against an offset gas producer.

(16) Further, the evidence shows that the ownership percentages are not identical between the N/2 and the S/2. In the N/2 of Section 36, Marathon Oil Company has a 50% ownership interest, Columbia Gas, has a 25% ownership interest, and Southwest Royalties has a 25% interest. In the S/2 of Section 36, Columbia Gas and Marathon each have a 50% ownership interest.

(17) Under South Dagger Draw Special Pool Rules, Marathon Oil Company could shut-in its producing oil well in the S/2 of Section 36, or convert it to a gas well, produce gas from Indian Hills St. Com #6 and #8, and thereby drain gas reserves from the N/2 of Section 36. Since the ownership is not common, the correlative rights to gas would be impaired for the N/2 interest owners and the correlative rights to oil would be impaired for the S/2 interest owners. Conversely, if the oil wells were shut-in on the N/2 to allow gas production, the violation of correlative rights would be reversed.

(18) The evidence shows that the simultaneous dedication of proration units in the South Dagger Draw Associated Pool will not cause the premature abatement of reservoir energy, or reduce the ultimate oil recovery from the pool and will protect correlative rights and prevent waste.

IT IS THEREFORE ORDERED THAT:

(1) Rule 5(b) of Order R-5353 is hereby amended to permit the simultaneous dedication of both gas wells and oil wells to the same 320-acre spacing and proration unit.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING

DEC

CASE NO. 10869
ORDER NO. R-

APPLICATION OF YATES PETROLEUM CORPORATION FOR AMENDMENT OF THE SPECIAL RULES AND REGULATIONS OF THE SOUTH DAGGER DRAW-UPPER PENNSYLVANIAN ASSOCIATED POOL (DIVISION ORDER NO. R-5353), EDDY COUNTY, NEW MEXICO

PROPOSED ORDER OF MARATHON OIL COMPANY

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 4, 1993 at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this ___day of _____1993, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Yates Petroleum Corporation, is the operator of wells in the South Dagger Draw-Upper Pennsylvanian Gas Pool which was created by Division Order No. R-4637 entered October 1, 1973, and has been extended from time to time to include the following acreage:

Township 20 South, Range 24 East, N.M.P.M.

Section 9:	E/2
Section 10	S/2
Section 11	S/2
Section 12:	S/2
Sections 13 through 15:	All
Sections 22 through 26	All

Section 35:	All
Section 36:	N/2

(3) The applicant seeks to amend Rule 5(b) of Order R-5353 which precludes the simultaneous dedication of both oil and gas wells to the same unit.

(4) Marathon Oil Company appeared at said hearing and presented testimony in support of the Application.

(5) Conoco Inc. appeared at said hearing and presented testimony in support of the Application

(6) Santa Fe Energy Partners, L.P. entered its appearance in this case, but presented no testimony.

(7) Nearburg Producing entered its appearance in this case, but presented no testimony.

(8) Chevron U.S.A., Inc., entered its appearance in this case, but presented no testimony.

(9) There was no opposition by any operator or by any interested party to the subject application.

(10) Marathon Oil Company is the operator of six wells located in Section 36, Township 20 South, Range 24 East, N.M.P.M., as follows:

NAME	CLASSIFICATION	STATUS	LOCATION
Indian Hills St. Com #1	Gas	Shut-In	SW/NE
Indian Hills St. Com #3	Oil	Producing	NW/NW
Indian Hills St. Com #4	Oil	Producing	SW/NW
Indian Hills St Com #6	Gas	Shut In	NE/SW
Indian Hills St. Com #7	Gas	Shut-In	SE/NW
Indian Hills St. Com #8	Oil	Producing	SW/SW

(11) Section 36 contains two 320 acre proration units being the N/2 and the S/2.

(12) The South Dagger Draw Pool has been drilled on 40-acre spacing.

(13) The evidence shows that the S/2 of Section 36 contains one oil well, the Indian Hills St. Com #8 and one gas well, Indian Hills St. Com #6. The evidence further shows that without simultaneous dedication which is prohibited by Rule 5(b), either the oil well or gas well must be shut-in resulting in waste of oil or gas reserves.

(14) The evidence shows that the N/2 of Section 36 contains four wells. The Indian Hills St. Com #3 and #4 are producing oil wells. The Indian Hills St. Com #7 was unsuccessfully completed as an oil well and only has potential as a gas well. Indian Hills St. Com #1 is a gas well that is currently shut-in. Neither the Indian Hills St Com #1 nor the #7 can be produced since there are producing oil wells in the proration unit, resulting in waste of gas reserves.

(15) The evidence further shows that Marathon is unable to protect both its oil and its gas reserves from drainage by offset operators with the prohibition of simultaneous dedication. If Marathon chooses to produce the gas wells, it cannot protect its oil reserves when offset by an oil proration unit. Likewise, if the oil wells are produced, the correlative rights to the gas cannot be protected against an offset gas producer.

(16) Further, the evidence shows that the ownership percentages are not identical between the N/2 and the S/2. In the N/2 of Section 36, Marathon Oil Company has a 50% ownership interest, Columbia Gas, has a 25% ownership interest, and Southwest Royalties has a 25% interest. In the S/2 of Section 36, Columbia Gas and Marathon each have a 50% ownership interest.

(17) Under South Dagger Draw Special Pool Rules, Marathon Oil Company could shut-in its producing oil well in the S/2 of Section 36, or convert it to a gas well, produce gas from Indian Hills St. Com #6 and #8, and thereby drain gas reserves from the N/2 of Section 36. Since the ownership is not common, the correlative rights to gas would be impaired for the N/2 interest owners and the correlative rights to oil would be impaired for the S/2 interest owners. Conversely, if the oil wells were shut-in on the N/2 to allow gas production, the violation of correlative rights would be reversed.

(18) The evidence shows that the simultaneous dedication of proration units in the South Dagger Draw Associated Pool will not cause the premature abatement of reservoir energy, or reduce the ultimate oil recovery from the pool and will protect correlative rights and prevent waste.

IT IS THEREFORE ORDERED THAT:

(1) Rule 5(b) of Order R-5353 is hereby amended to permit the simultaneous dedication of both gas wells and oil wells to the same 320-acre spacing and proration unit.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
WILLIAM P. SLATTERY

PATRICIA A. MATTHEWS
MICHAEL H. FELDEWERT
DAVID B LAWRENZ
TANYA M. TRUJILLO

JACK M. CAMPBELL
OF COUNSEL

JEFFERSON PLACE
SUITE I - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

December 15, 1993

HAND-DELIVERED

Mr. David R. Catanach
Hearing Examiner
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

DEC 15

Re: Case Nos. 10869 and 10881:
Application of Yates Petroleum Corporation for Amendment of the Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Pool, Eddy County, New Mexico.

Application of Conoco Inc. to Amend Rule 5(b) and Rule 6 of the Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Pool (Division Order R-5353), and for the Extension of Said Pool, Eddy County, New Mexico.

Dear Mr. Catanach:

Pursuant to your request I am enclosing the proposed Order of Yates Petroleum Corporation in the above-referenced case.

If you require anything further from Yates to proceed with your consideration of this matter, please advise.

Very truly yours,

William F. Carr

WILLIAM F. CARR
WFC:mlh
Enclosure
cc: Mr. Pinson McWhorter (w/enclosure)
W. Thomas Kellahin, Esq. (w/enclosure)

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

Case Nos. 10869 and 10881
(Consolidated)
Order No. R-_____

APPLICATION OF YATES PETROLEUM
CORPORATION FOR AMENDMENT OF THE
SPECIAL RULES AND REGULATIONS FOR
THE SOUTH DAGGER DRAW-UPPER
PENNSYLVANIAN POOL,
EDDY COUNTY, NEW MEXICO.

APPLICATION OF CONOCO INC. TO
AMEND RULE 5(b) AND RULE 6 OF THE
SPECIAL RULES AND REGULATIONS FOR
THE SOUTH DAGGER DRAW-UPPER
PENNSYLVANIAN POOL (DIVISION ORDER
R-5353), AND FOR THE EXTENSION OF
SAID POOL, EDDY COUNTY, NEW MEXICO.

YATES PETROLEUM CORPORATION'S
PROPOSED ORDER OF THE DIVISION

BY THE DIVISION:

These causes came on for hearing at 8:15 a.m. on December 3, 1993, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this _____ day of December, 1993, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) Yates Petroleum Corporation ("Yates"), applicant in Cause No. 10869, seeks an order deleting Rule 5(b) of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool thereby authorizing simultaneous dedication of both gas wells and oil wells in the same spacing unit.

(3) Conoco Inc. ("Conoco"), applicant in Case No. 10881, seeks an order deleting Rule 5(b) of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool thereby authorizing simultaneous dedication of both gas wells and oil wells to the same spacing unit. Conoco also seeks an order amending Rule 6 of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool to reduce the limiting gas-oil ratio to 4,500 cubic feet of gas for each barrel of oil produced in said pool. Further, Conoco seeks the extension of the South Dagger Draw-Upper Pennsylvanian Pool to include the E/2 of Section 16, E/2 of Section 34 and all of Section 35, Township 20 South, Range 24 East and all of Sections 34 and 35, Township 20 1/2 South, Range 23 East, Eddy County, New Mexico.

(4) These cases were consolidated at the time of hearing and Marathon Oil Company ("Marathon") appeared and presented testimony in support of an order deleting Rule 5(b). Santa Fe Energy Operating Partners, L.P. ("Santa Fe') also appeared in support of the deletion of Rule 5(b).

(5) In support of its application for amendment of Rule 6 of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool to reduce the limiting gas-oil ratio to 4,500 cubic feet of gas for each barrel of oil produced in said pool, Conoco presented evidence that:

(a) The average gas-oil ratio for this pool for oil wells from January through June 1993 was approximately 4,500 to 1; and

(b) Gas withdrawals from this pool should be limited to prevent any adverse impact such withdrawals could have on oil recoveries.

(6) Yates opposed the application of Conoco to reduce the gas-oil ratio for this pool and presented evidence which established that:

(a) The average gas-oil ratio for oil wells in this pool during July, August and September 1993, data was in excess of 4,500 to 1 (Yates Exhibit 3) and that the gas-oil ratio will continue to increase as the reserves in the pool are produced. See Testimony of McWhorter and Majcher.;

(b) This reservoir consists of separate intervals of low vertical and horizontal permeability interspersed with zones of higher vertical and horizontal permeability. This results in low or restricted vertical communication between layers as evidenced by Reservoir, Inc.'s

analysis of the core from Conoco's Dagger Draw No. 12 Well. Testimony of McWhorter.

(c) Even if there were vertical communication between the producing zones around the wellbores, the bulk of the gas cap is located west and south of the oil in the reservoir. This hydrodynamically displaced gas cap does not provide effective pressure support for oil production because of reduced horizontal and vertical permeability over the distances involved.

(d) There are dramatic differences in the pressure encountered in the oil and gas zones which confirms the absence of good communication between these portions of the reservoir. Yates Exhibit 4.

(7) Yates also presented a Reservoir Simulation Study using a 3D cross sectional model of the South Dagger Draw-Upper Pennsylvanian Pool which confirmed that changes in the rate of gas production have little effect on oil recoveries from the pool. (Yates Exhibit 5).

(8) Yates also presented an economic analysis which established that the production from this reservoir has a higher present net worth with an accelerated gas production rate than with gas production curtailed. Yates Exhibit 6.

(9) The evidence presented by Yates demonstrates that a gas-oil ratio of 10,000 to 1 in the South Dagger Draw-Upper Pennsylvanian Pool does not permit production practices which result in waste and that a reduction of the gas-oil ratio as requested by Conoco will not increase the ultimate recovery of oil produced from the pool or otherwise prevent waste or protect correlative rights and should therefore be denied.

(10) In support of the applications to eliminate Rule 5(b) of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool the evidence presented by the parties showed:

(a) There are transition zones in the south and western portions of this pool where, due to structure, the oil column no longer exists;

(b) Because of the transition zones and general entrapment characteristics of this reservoir elsewhere in this pool, operators have spacing units from which they cannot produce the gas from this pool because of existing oil wells and the limitation of Rule 5(b). See Yates Exhibit 2, and Testimony of McWhorter, Majcher and Kent).;

(c) The gas that cannot be produced because of Rule 5(b) is drained by offset operators and the correlative rights of certain operators are thereby impaired.

(11) Amendment of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool by the deletion of Rule 5(b) thereby permitting the simultaneous dedication of oil wells and gas wells to a spacing unit will protect correlative rights and should be approved.

(12) The evidence presented by Conoco established that the transition zone in this reservoir includes the E/2 of Section 16, E/2 of Section 34, and all of Section 35, Township 20 South, Range 24 East, and all of Sections 34 and 35, Township 20 1/2 South, Range 23 East, Eddy County, New Mexico and the application of Conoco to extend the South Dagger Draw-Upper Pennsylvanian Pool to include this acreage should be granted.

IT IS THEREFORE ORDERED THAT:

(1) The applications of Yates Petroleum Corporation (Case 10869) and Conoco Inc. (Case 10881) for deletion of Rule 5(b) of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool as promulgated by Division Order No. R-5353 are hereby granted.

(2) The application of Conoco Inc. (Case 10881) for extension of the South Dagger Draw-Upper Pennsylvanian Pool to include the E/2 of Section 16, E/2 of Section 34 and all of Section 35, Township 20 South, Range 24 East, and all of Section 34 and 35, Township 20 1/2 South, Range 23 East, Eddy County, New Mexico is granted.

(3) The application of Conoco Inc. (Case 10881) for Amendment of Rule 6 of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Pool to reduce the limiting gas-oil ratio to 4,500 cubic feet of gas for each barrel of oil produced in said pool is denied.

(4) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LeMAY
Director

S E A L

KELLAHIN AND KELLAHIN
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN*
*NEW MEXICO BOARD OF LEGAL SPECIALIZATION RECOGNIZED SPECIALIST IN THE AREA OF NATURAL RESOURCES-OIL AND GAS LAW
JASON KELLAHIN (RETIRED 1991)

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

December 13, 1993

HAND DELIVERED

DEC 13 1993

Mr. David R. Catanach
Hearing Examiner
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

Re: NMOCD Case 10881: Application of Conoco Inc. to Amend Rules 5(b) and 6 for South Dagger Draw Pool and to Expand said Pool, Eddy County, New Mexico.

NMOCD Cases 10869: Application of Yates Petroleum Corporation to Amend Rule 5(b) for South Dagger Draw Pool, Eddy County, New Mexico.

Dear Mr. Catanach:

In accordance with your request at the hearing of the referenced cases held on December 3, 1993, and on behalf of Conoco Inc. please find enclosed our proposed order for your consideration.

Very truly yours,

W. Thomas Kellahin

cc: William F. Carr, Esq.
(Yates Petroleum Corporation)
(Chevron USA Inc.)
cc: James Bruce, Esq.
(Santa Fe Energy Operating Partners, L.P.)
(Nearburg Producing Company)
cc: Karen Aubrey, Esq.
(Marathon Oil Company)
cc: Jerry Hoover (Conoco-Midland)

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

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 10881

APPLICATION OF CONOCO INC. TO AMEND RULE 5(B)
AND RULE 6 OF THE SPECIAL RULES AND REGULATIONS
FOR THE SOUTH DAGGER DRAW-UPPER PENNSYLVANIAN
ASSOCIATED POOL, (DIVISION ORDER R-5353),
FOR THE EXTENSION OF SAID POOL,
EDDY COUNTY, NEW MEXICO.

CASE NO. 10869

APPLICATION OF YATES PETROLEUM CORPORATION
FOR AMENDMENT OF RULE 5(B) OF THE SPECIAL
RULES AND REGULATIONS FOR THE SOUTH DAGGER
DRAW-UPPER PENNSYLVANIAN ASSOCIATED POOL,
EDDY COUNTY, NEW MEXICO.

Order R-5353-L-3

CONOCO INC.'S
PROPOSED
ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 2, 1993, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this ____day of December, 1993, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The Applicant in Case 10881, Conoco Inc. ("Conoco"), seeks to amend the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Associated Pool ("South Dagger Draw Pool") and for the extension of said pool, as follows:

(a) to amend Rule 5(b) so as to allow simultaneous dedication of a spacing unit to both gas and oil wells;

(b) to amend Rule 6 to reduce the current limiting gas-oil ratio in South Dagger Draw Pool from 10,000 to 1 to 4500 to 1.

(c) to expand South Dagger Draw Pool to include the "transition area" which currently exists between South Dagger Draw-Upper Pennsylvanian Associated Pool and Indian Basin Gas Pool.

(3) The Applicant in Case 10869, Yates Petroleum Corporation ("Yates") seeks to amend Rule 5(B) of the South Dagger Draw Pool to allow simultaneous dedication of gas and oil wells to a spacing unit BUT opposes Conoco's request to lower the current limiting GOR for South Dagger Draw Pool.

(4) Marathon Oil Company appeared in support of amending Rule 5(B) to allow for simultaneous dedication but took no position concerning the GOR issue.

(5) Santa Fe Energy Operating Partners, L. P., Nearburg Producing Company, Chevron USA Inc, each appeared through counsel but took no position on any issue.

(6) South Dagger Draw Pool is the middle pool of an extensive dolomite fairway hydrocarbon reservoir in Eddy County, New Mexico, currently subdivided into three pools, the southern portion of which is structurally the highest and is classified as a gas pool being designated as the "Indian Basin Upper Pennsylvanian Gas Pool." The northern-most portion, which is structurally the lowest part of this extensive continuous dolomite reservoir, is classified as an oil pool and is designated as the "North Dagger Draw Upper Pennsylvanian Oil Pool."

(7) The middle portion of this continuous reservoir declines structurally from southwest to northeast and represents an extensive transition area from the gas pool to the south (Indian Basin) and the oil pool to the north (North Dagger Draw). This transitional area is classified as an associated oil-gas pool and is designated as the "South Dagger Draw-Upper Pennsylvanian Associated Pool."

(8) This middle, transitional pool ("South Dagger Draw Pool") presents special reservoir management problems associated with the inclusion of gas wells on the southern and western periphery of the pool, oil wells on the northern and eastern side, and a mixture of high GOR oil wells and gas wells through the middle of the pool, which cannot be resolved with traditional rules for either gas or oil pools.

(9) The South Dagger Draw Pool is currently defined as including 6720 acres in Township 20 South Range 24 East as updated by Order No. R-9837, February 1, 1993.

(10) Conoco proposes that the current South Dagger Draw Pool boundaries be expanded to other acreage which contains wells that either have or are currently producing hydrocarbons that are being attributed to the South Dagger Draw production statistics by the Oil Conservation Division consisting of the E/2 Section 16, E/2 Section 34, all of Section 35, S/2 Section 36, Township 20 South, Range 24 East and all of Section 34 and 35, Township 20-1/2 South, Range 23 East.

(11) There was no opposition to Conoco's requested expansion of South Dagger Draw Pool.

(12) South Dagger Draw Pool should be expanded as requested by Conoco in order to provide appropriate regulatory rules for the "transition area" between South Dagger Draw Pool and the Indian Basin Gas Pool.

THE RULE 5(B) ISSUE:

(13) The current rules for the Indian Basin Upper Penn Gas Pool provide for 640-acre gas spacing and proration units with the option for multiple gas wells in a single such unit.

(14) The current rules for the North Dagger Draw Upper Pennsylvanian Oil Pool provide for 160-acre spacing and proration units with the option for multiple oil wells in a single such unit.

(15) The current rules for the South Dagger Draw Pool provide for 320-acre proration and spacing units with the option for multiple oil wells or multiple gas wells BUT preclude the simultaneous dedication of both oil and gas wells to the same unit. (See applicable Rule 5(b) of Associated Pool Rules (Order R-5353).

(16) Precluding the simultaneous dedication of both oil and gas wells to the same unit, providing for limiting gas-oil ratios, and setting limits on gas allowables in an associated pool are regulatory conservation methods imposed to minimize gas production from the gas cap, to avoid the premature abatement of reservoir energy and thereby avoid the reduction in ultimate oil recovery from the pool.

(17) The evidence presented by Conoco, Yates, and Marathon demonstrated that the application of Rule 5(b) of Order R-5353 for South Dagger Draw Pool has and will continue to be an obstruction to the orderly and efficient development and proper depletion of the South Dagger Draw Pool thereby causing waste and violating correlative rights.

(18) Rule 5(B) may be deleted as one of the regulatory conservation methods imposed to minimize gas production from the gas cap in the Pool provided that an appropriate limiting GOR is established to protect the conservation of reservoir energy.

THE RULE 6-GOR ISSUE:

(19) The current MAXIMUM GAS ALLOWABLE for the Indian Basin Upper Penn Gas Pool provide for 6,000 MCFPD per 640-acre gas spacing and proration unit.

(20) The current maximum gas allowable for the South Dagger Draw Pool provide for 14,000 MCFPD per 320-acre spacing unit (GOR of 10,000 to 1 times the top oil allowable of 1,400 BOPD).

(21) The current actual maximum producing rate from any spacing unit in South Dagger Draw Pool is approximately 9,000 MCFGPD from the Yates' operated spacing unit consisting of the W/2 of Section 15, T20S, R24E.

(22) In support of its request to reduce the GOR to 4500 to 1, Conoco provided expert geologic evidence which demonstrated that:

(a) the South Dagger Draw Pool is a brittle, vugular dolomite with good vertical permeability. This combination of vugs, fractures and vertical permeability provide the necessary flow channels to permit gas-cap gas to reach the perforations in wells which would otherwise normally be limited to production from the oil column;

(b) the oil column is overlain by a gas column of varying thickness regardless of structural position within the South Dagger Draw Pool. (See Conoco Exhibits 6 and 7);

(c) many wells in the South Dagger Draw Pool have been routinely perforated in the overlying gas column as evidence by completion and producing records;

(d) Even wells that have been completed only in the oil column, as exhibited by Conoco's completions in Section 35, T20S, R24E, require stimulation treatments such that it is virtually impossible to prevent communication with the overlying gas column and the production of gas-cap gas from oil well completions.

(23) In support of its request to reduce the current limiting 10,000 to 1 GOR to a new limiting 4500 to 1 GOR, Conoco provided expert petroleum engineering evidence which demonstrated that:

(a) the South Dagger Draw Pool is a complex reservoir with a combination of gas-cap expansion, solution-gas drive and weak water influx drive mechanism;

(b) the "gas-cap" in the South Dagger Draw Pool is in pressure communication with the oil column and extends throughout the pool as demonstrated by Conoco's initial pressures in the recently drilled Preston Nos. 5, 8 and 9 oil wells as compared to the 20-year old producing Preston No 1 gas well. These three wells confirm this pressure communication between the oil and gas columns over a 1-1/2 mile area extending across the reservoir;

(c) production data demonstrates that the current producing GOR for the pool is nearly 5 times greater than the original solution gas-oil ratio of 911 SCF/STB as documented by PVT data;

(d) under current rules, the South Dagger Draw Pool is being produced such that approximately 80% of the gas produced from the oil wells in the pool is free gas-cap gas;

(e) under current rules, ten wells in the pool currently account for 42% of the total pool gas production;

(f) the current limiting 10,000 to 1 gas-oil ratio is causing the premature depletion of the gas cap which results in oil being left unrecovered in the reservoir which otherwise would be recoverable and thereby causing waste;

(g) a new limiting 4,500 to 1 gas-oil ratio is needed for South Dagger Draw Pool to prevent the premature depletion of the gas cap which will preserve the ability to maximize oil recovery from this associated pool thereby preventing waste;

(h) the oil is approximately 6 times more valuable than the gas on an equivalent reservoir volume basis and therefore the pool rules and limiting GOR should be geared toward protecting the oil reserves;

(i) since the intent of a limiting GOR is to control gas production to maximize more valuable oil production, the limiting GOR should be based upon the current producing GOR of those wells that are or should be classified as oil wells;

(j) the current producing GOR for the oil wells is 4,500 to 1 which is equivalent to 6,300 MCFGPD per spacing unit;

(k) by allowing the operator of each 320-acre spacing and proration unit to produce gas up to a maximum gas limit of 6,300 MCFPD which would provide the necessary flexibility to produce the oil in preference to the gas.

(24) In support of its request to maintain the current 10,000 to 1 GOR, Yates introduced a reservoir simulation which concluded that the withdrawals from the gas cap would not adversely affect oil production.

(25) Yates' reservoir simulation was based upon the following:

(a) the geologic assumption that there was a significant restriction to vertical flow in the reservoir;

(b) the geologic interpretation that the gas cap was located only along the western edge of the South Dagger Draw Pool and not distributed over the pool as interpreted by Conoco.

(c) the assumption that the limited area simulated in an east-west direction across portions of sections 13, 14 and 15, T36S, R20S, NMPM is representative of the entire South Dagger Draw Pool which all parties agree is an extremely heterogeneous reservoir;

(d) the assumption that the pressure differential between certain selected wells demonstrates limited pressure communication between the gas cap and the oil column;

(e) The engineering assumption that adjustment of porosity and height parameters in the simulator in order to achieve a "history match" for 8 select wells represented a "unique combination" which is characteristic of the performance of all 56 wells in the pool.

(26) The Division finds that the Yates' reservoir simulation does not constitute substantial evidence on the GOR issue because:

(a) it failed to demonstrate that the physical picture of the reservoir(for example, permeability, porosity distributions) described in the simulator was accurate and typical of the entire pool;

(b) the area of simulation was too small and too localized to be characteristic of the performance of the other areas of the pool;

(c) that the simulation results are inconsistent with known production data, including producing GORs, from other areas of the South Dagger Draw Pool.

(d) Yates' geologic model of a vertically isolated oil and gas column is not supported by pressure and production data;

(e) Yates' geologic model of a vertically isolated reservoir is incompatible with their contention that oil/water and gas/water contacts have been tilted due to a dynamic aquifer.

(27) The Division finds that:

(a) based upon current production and pressure data and engineering and geological reservoir evaluations, the current maximum gas allowable for a spacing unit in the South Dagger Draw Pool is probably not achievable by a single gas well and will result in the waste of oil reserves if applied to multiple gas wells in the same spacing unit.

(b) An amendment to Rule 5(b) of Order R-5353 authorizing the simultaneous dedication of both gas wells and oil wells to the same 320-acre spacing and proration unit is appropriate provided an amendment is also made to Rule 6 of Order R-5353 reducing the limiting GOR and thereby reducing gas allowables for proration and spacing units in the South Dagger Draw Pool.

(c) Rule 6 of Order R-5353 should be amended to establish a limiting GOR of 4,500 to 1 which matches the current average producing GOR of all wells that qualify to be classified as oil wells in the Pool in order to prevent excessive premature drainage of the gas cap and the waste of significant oil reserves.

(d) The current average producing GOR of all wells that qualify to be classified as oil wells under current pool rules in the South Dagger Draw Pool is approximately 4,500 cubic feet of gas for each barrel of oil produced. Amendment of Rule 6 of Order R-5353 to include a new limiting GOR of 4,500 to 1 would in effect establish a new maximum gas allowable of 6,300 MCFGPD per standard 320-acre proration and spacing unit and will afford the opportunity to adequately recover both oil and gas reserves without causing undue waste.

(e) Rule 5(b) and Rule 6 should be amended for the South Dagger Draw Pool to include appropriate language to accomplish the following:

(1) A maximum combination of eight oil and gas wells, each located on a separate 40-acre tract, may be simultaneously dedicated to a 320-acre spacing and proration unit;

(2) A new limiting GOR of 4,500 to 1 should be set for each standard 320-acre proration and spacing unit to avoid undue adverse affect on ultimate oil recovery;

(3) The combined gas production from both oil and gas wells in a standard 320-acre spacing and proration unit in the Pool shall not exceed the maximum casinghead gas allowable of 6,300 MCFGPD as established by the new limiting GOR for the Pool.

(28) The conservation objectives of the Division to prevent waste and protect correlative rights are best accomplished by approving the Conoco application and by denying the Yates' application.

IT IS THEREFORE ORDERED THAT:

(1) The application of Yates is hereby denied.

(2) The application of Conoco in Case 10881 is hereby granted.

(3) The Special Rules and Regulations for the South Dagger Draw- Upper Pennsylvanian Associated Pool, Eddy County, New Mexico, as amended by Division Order Nos. R-5353-L and R-5353-L-1 and R-5353-L-2, are hereby amended effective as of January 1, 1994, as follows:

Rule 5(b) A maximum combination of eight oil and gas wells, each located on a separate 40-acre tract, may be simultaneously dedicated to a 320-acre spacing and proration unit;

Rule 6. The limiting gas-oil ratio shall be 4,500 cubic feet of gas for each barrel of oil produced.

(4) The South Dagger Draw-Upper Pennsylvanian Associated Pool is hereby expanded to include the following additional acreage: the E/2 Section 16, E/2 Section 34, all of Section 35, S/2 Section 36, Township 20 South, Range 24 East and all of Section 34 and 35, Township 20-1/2 South, Range 23 East, NMPM.

(5) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director.

SEAL

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November 12, 1993

HAND-DELIVERED

William J. LeMay, Director
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New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

Re: Oil Conservation Division Case No. 10869:
Application of Yates Petroleum Corporation for Amendment of the Special Rules and Regulations of the South Dagger Draw-Upper Pennsylvanian Associated Pool (Division Order No. R-5353), Eddy County, New Mexico

Dear Mr. LeMay:

Yates Petroleum Corporation respectfully requests that this matter which is currently set on the Division docket for the November 18, 1993 hearings be continued to the December 2, 1993 Examiner docket.

Your attention to this matter is appreciated.

Very truly yours,

WILLIAM F. CARR
WFC:mlh
cc: Mr. Randy Patterson
Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210