

**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. 11497
Order No. R-10576**

**APPLICATION OF AMOCO PRODUCTION
COMPANY FOR FOURTEEN UNORTHODOX
INFILL CARBON DIOXIDE GAS WELL
LOCATIONS, UNION COUNTY, NEW
MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 21, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 1st day of April, 1996, 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, Amoco Production Company, seeks an exception to Rule No. (4) of the Special Rules and Regulations for the Bravo Dome 640-Acre Area as promulgated by Division Order No. R-7556, to allow the drilling of the following described fourteen carbon dioxide infill gas wells at unorthodox gas well locations, all located in Union County, New Mexico:

| <u>WELL NAME & NUMBER</u> | <u>WELL LOCATION</u> |
|--------------------------------------|------------------------------------|
| BDCDGU 2135 Well No. 182 | 660' FNL & 660'FWL (D)-18-21N-35E |
| BDCDGU 2234 Well No. 232 | 660' FSL & 660'FWL (M)-23-22N-34E |
| BDCDGU 1835 Well No. 082 | 660' FSL & 1980'FWL (N)- 8-18N-35E |
| BDCDGU 2234 Well No. 262 | 660' FSL & 560'FWL (M)-26-22N-34E |
| BDCDGU 2134 Well No. 243 | 660' FSL & 660'FEL (P)-24-21N-34E |
| BDCDGU 2234 Well No. 223 | 660' FNL & 385'FWL (D)-22-22N-34E |

| | |
|--------------------------|-------------------------------------|
| BDCDGU 2234 Well No. 212 | 660' FSL & 660'FWL (M)-21-22N-34E |
| BDCDGU 2134 Well No. 132 | 450' FSL & 450'FEL (P)-13-21N-34E |
| BDCDGU 1835 Well No. 072 | 1980' FSL & 1980'FWL (K)- 7-18N-35E |
| BDCDGU 2135 Well No. 183 | 660' FSL & 660'FEL (P)-18-21N-35E |
| BDCDGU 1835 Well No. 162 | 660' FSL & 660'FEL (P)-16-18N-35E |
| BDCDGU 1835 Well No. 163 | 660' FNL & 1980'FWL (C)-16-18N-35E |
| BDCDGU 2234 Well No. 213 | 560' FNL & 660'FWL (D)-21-22N-34E |
| BDCDGU 2234 Well No. 172 | 660' FNL & 660'FEL (A)-17-22N-34E |

(3) The applicant further requests the establishment of an administrative procedure whereby additional infill wells proposed to be drilled at unorthodox locations based upon geologic and engineering considerations may be approved administratively by the Division.

(4) At the time of the hearing, it was determined that the BDCDGU 1835 Well No. 072 is located at a standard gas well location, and therefore, the unorthodox location request for this well should be dismissed.

(5) The subject wells are all located within the Amoco Production Company Bravo Dome Carbon Dioxide Gas Unit. In addition, the wells are located within the Bravo Dome 640-Acre Area as defined within Division Order No. R-7556, entered in Case No. 8190 on June 19, 1984.

(6) The Bravo Dome 640-Acre Area is currently governed by Special Rules and Regulations as contained within said Order No. R-7556 which require, in part, 640-acre standard gas spacing and proration units with wells to be located no closer than 1,650 feet from the outer boundary of the section nor closer than 330 feet from any quarter-quarter section line or subdivision inner boundary. The rules further allow the drilling of infill gas wells within a standard spacing unit (Rule No. (2)) provided that such wells are located no closer than 1,320 feet from any other well drilling to or capable of producing from the Bravo Dome 640-Acre Area.

(7) According to applicant's evidence and testimony, it has recently undertaken a study to determine the feasibility of infill drilling within the Bravo Dome 640-Acre Area. Initially, the applicant identified approximately 450 well locations which may be candidates for infill drilling. Utilizing the following described criteria, the applicant has identified the fourteen wells described in Finding No. (2) above as being the top candidates for infill drilling at this time:

- a) areas where infill drilling can maximize ultimate recovery;
- b) areas where infill drilling will result in wells with relatively high deliverabilities (2.5 + MMCFGD); and,
- c) minimize costs by locating wells near existing surface facilities.

(8) According to applicant's testimony, the proposed unorthodox locations for those wells located on its Leg 9 Gathering System, being the BDCDGU Well Nos. 2135-182, 2234-232, 2234-262, 2134-243, 2234-223, 2234-212, 2134-132, 2135-183, 2234-213, and 2234-172, are necessary due to engineering considerations (i.e. reservoir pressure, drainage, ultimate gas recovery, etc.).

(9) Applicant's evidence further indicates that the proposed unorthodox locations for those wells located on its Leg 6 and 7 Gathering System, being the BDCDGU Well Nos. 1835-082, 1835-072, 1835-162, and 1835-163, are based upon geologic as well as engineering considerations, namely the presence of a northwest to southeast trending fault which traverses each of the well's proration units.

(10) To aid in its determination of those areas within the Bravo Dome 640-Acre Area where infill drilling can maximize recovery, the applicant has built a field-wide computer simulation model which is composed of a reservoir model component and a surface facility model component.

(11) The evidence presented indicates that the applicant has obtained a good history match between the computer simulation and past production within the model area. This indicates that applicant's computer simulation should be capable of accurately predicting future field performance.

(12) The computer simulation was utilized by the applicant to select those infill well locations where incremental gas recovery would be maximized.

(13) The results of the reservoir simulation indicate that drilling the infill wells at the proposed unorthodox locations instead of standard well locations within the subject proration units should result in the recovery of an additional 13 BCF of carbon dioxide gas which would otherwise not be recovered, thereby preventing waste.

(14) All of the affected offset acreage is located within the Amoco Production Company Bravo Dome Carbon Dioxide Gas Unit.

(15) The applicant testified that it has examined the affected offset acreage to determine whether or not there are royalty interest owners who have not ratified the Unit Agreement, and therefore may be affected by the proposed unorthodox locations. Applicant determined that there are such interest owners, however, applicant testified that it has historically been unsuccessful in locating these interest owners.

(16) No other offset operator and/or interest owner appeared at the hearing in opposition to the application.

(17) Approval of the subject application will afford the applicant the opportunity to recover additional gas reserves from each of the subject proration units which may otherwise not be recovered, thereby preventing waste, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells and will not violate correlative rights.

(18) Pursuant to Division Rule No. 104.F., which was recently amended by Division Order No. R-10533, future unorthodox gas well locations within the Bravo Dome 640-Acre Area based upon geologic or engineering considerations should qualify for administrative approval, provided however, that the supervisor of the Division's Santa Fe District Office should have the authority to require additional notice by the applicant to those offset interest owners deemed to be affected by any proposed unorthodox location.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Amoco Production Company, is hereby authorized to drill the following described thirteen infill carbon dioxide gas wells within the Bravo Dome 640-Acre Area at unorthodox gas well locations, all located in Union County, New Mexico:

| <u>WELL NAME & NUMBER</u> | <u>WELL LOCATION</u> |
|-------------------------------|------------------------------------|
| BDCDGU 2135 Well No. 182 | 660' FNL & 660'FWL (D)-18-21N-35E |
| BDCDGU 2234 Well No. 232 | 660' FSL & 660'FWL (M)-23-22N-34E |
| BDCDGU 1835 Well No. 082 | 660' FSL & 1980'FWL (N)- 8-18N-35E |
| BDCDGU 2234 Well No. 262 | 660' FSL & 560'FWL (M)-26-22N-34E |
| BDCDGU 2134 Well No. 243 | 660' FSL & 660'FEL (P)-24-21N-34E |
| BDCDGU 2234 Well No. 223 | 660' FNL & 385'FWL (D)-22-22N-34E |
| BDCDGU 2234 Well No. 212 | 660' FSL & 660'FWL (M)-21-22N-34E |
| BDCDGU 2134 Well No. 132 | 450' FSL & 450'FEL (P)-13-21N-34E |
| BDCDGU 2135 Well No. 183 | 660' FSL & 660'FEL (P)-18-21N-35E |
| BDCDGU 1835 Well No. 162 | 660' FSL & 660'FEL (P)-16-18N-35E |
| BDCDGU 1835 Well No. 163 | 660' FNL & 1980'FWL (C)-16-18N-35E |

BDCDGU 2234 Well No. 213
BDCDGU 2234 Well No. 172

560' FNL & 660'FWL (D)-21-22N-34E
660' FNL & 660'FEL (A)-17-22N-34E

(2) Each of the subject wells shall be dedicated to the existing 640-acre standard gas spacing and proration unit on which it is located.

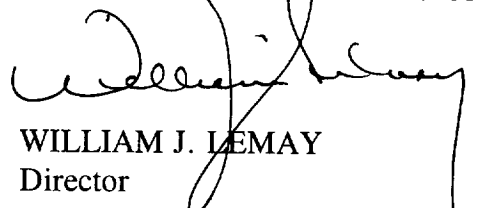
(3) Applicant's request for an unorthodox location approval for its BDCDGU 1835 Well No. 072 is hereby dismissed.

(4) Pursuant to Division Rule No. 104.F., future unorthodox gas well locations within the Bravo Dome 640-Acre Area based upon geologic or engineering considerations shall qualify for administrative approval, provided however, that the supervisor of the Division's Santa Fe District Office shall have the authority to require additional notice by the applicant to those offset interest owners deemed to be affected by any proposed unorthodox location.

(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

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