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

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

MICHAEL H. FELDEWERT
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

November 8, 1994

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco
Santa Fe, New Mexico 87503

Re: Case No. 11122:
In the matter of the hearing called to consider the recommendation of the Bravo Dome Carbon Dioxide Gas Unit Working Interest Owners to Contract the Bravo Dome Carbon Dioxide Gas Unit Area, Harding, Quay and Union Counties, New Mexico

Dear Mr. LeMay:

Enclosed is Amoco Production Company's Proposed Order of the Commission in the above referenced case. Also enclosed is a complete set of the exhibits admitted into evidence at the October 20, 1994 Commission hearing. Copies of this Proposed Order are being sent directly to Commissioners Bill Weiss and Jami Bailey.

As you will recall, at our meeting on September 19, 1994, the question of whether the requirement of four year reviews of this Unit could be abolished by the Order entered in this case. Accordingly, I have included a second Proposed Order which contains additional findings (Nos. 7 through 13) and Order Paragraph (No. 3) which eliminate four year reviews and emphasize the Commission's continuing jurisdiction over unit operations. I have not sent this version of the order to other members of the Commission. Copies of both orders, including Exhibit A thereto are on the disks which are also enclosed.

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

Very truly yours,

WILLIAM F. CARR
WFC:mlh
Enclosures
cc: A. Andrew Gallo (w/o enclosures)

OK for final - use idea and correct it.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION COMMISSION

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

Case No. 11122
Order No. R-_______

IN THE MATTER OF THE HEARING CALLED
TO CONSIDER THE RECOMMENDATION OF
THE BRAVO DOME CARBON DIOXIDE GAS
UNIT WORKING INTEREST OWNERS TO
CONTRACT THE BRAVO DOME CARBON
DIOXIDE GAS UNIT AREA, HARDING,
QUAY AND UNION COUNTIES, NEW MEXICO.

AMOCO PRODUCTION COMPANY'S
PROPOSED
ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on October 20, 1994, at Santa Fe, New Mexico, before the Oil Conservation Commission of the State of New Mexico, hereinafter referred to as the "Commission."

NOW, on this _____ day of November, 1994, the Commission, a quorum being present, having considered the testimony, the record, and the exhibits, and being fully advised in the premises,

FINDS THAT:

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

(2) In the late 1970's, Amoco and other working interest owners proposed the development of a large supply of carbon dioxide gas located in Northeast New Mexico under a unit plan to be called the Bravo Dome Carbon Dioxide Gas Unit, hereinafter referred to as the "Bravo Dome Unit."

(3) The operation of the Bravo Dome Unit is governed by the Bravo Dome Carbon Dioxide Gas Unit Agreement, hereinafter referred to as the "Unit Agreement". The Unit Agreement provided that it would become effective following the approval of the Oil Conservation Division of the Energy and Minerals Department of the State of New Mexico (the "Commission") and the Commissioner of Public Lands of the State of New Mexico, hereinafter referred to as the "Commissioner." (Section 17.1, Bravo Dome Carbon Dioxide Gas Unit Agreement).

(4) Two hearings were held before the Commission in 1980 to consider the application of Amoco Production Company, the operator of the Bravo Dome Unit, hereinafter referred to as "Amoco", for approval of the Unit Agreement. At the hearing, Amoco presented the data available from the wells that had been drilled at that time throughout the area.

(5) On August 14, 1980 and again following rehearing on January 23, 1981, the Commission entered Orders No. R-6446 and No. R-6446-B which granted the application of Amoco for approval of the Unit Agreement.

(6) The Bravo Dome Unit became effective on November 1, 1980.

(7) Although in 1980 a number of wells had been completed in the unit area (Order No. R-6446-B, Finding 12) the Commission found that the developed acreage within the proposed unit was very small compared to the total unit area (Order No. R-6446-B, Finding 13) and that further development would provide the data that would enable the Commission to determine if long term development under the Unit Agreement would prevent waste and be fair to the owners of interest in the unit area (Order No. R-6446-B, Findings 26 and 27).

(8) The Commission established guidelines which defined how it would exercise its continuing jurisdiction over this unit until additional data was obtained by providing in Order Paragraphs 4, 5 and 6 of Order No. R-6446-B as follows:

(4) that the operator of said unit shall be required to periodically demonstrate to the Commission that its operations within the unit are resulting in the prevention of waste and the protection of correlative rights on a continuing basis;

(5) that such demonstration shall take place at a public hearing held at least every four years following the effective date of the unit or at such lesser intervals as the Commission may require; and

(6) that all plans for development and operation and all expansion or contractions of the unit area shall be submitted to the Commission for approval.

(9) Since the entry of Order No. R-6446-B, the Commission has held three public hearings to review the operation of the Bravo Dome Unit and on each occasion has found that operations of the Bravo Dome Unit result in the prevention of waste of carbon dioxide gas and the protection of correlative rights of interest owners within the unit on a continuing basis. (Orders R-6446-C, D and E, Order Paragraphs 1).

(10) At the time of this hearing, 557 wells have been drilled in the area of the Bravo Dome, over 1100 miles of seismic line have been shot consisting of approximately 60,000 shot points, and over 6000 feet of core have been obtained from 45 wells. (Testimony of Herb Wacker, Transcript at 26-27).

(11) There is now ample data to determine that operations of the Bravo Dome Unit under the Unit Agreement will prevent the waste of carbon dioxide gas and protect the correlative rights on a continuing basis and that periodic reviews of unit operations as provided in Order No. R-6446-B are no longer necessary.

(12) The requirement for periodic reviews of unit operations at public hearings to be held at least every four years are no longer necessary to determine that unit operations are resulting in the prevention of waste and the protection of correlative rights and Order Paragraphs 4 and 5 of Order No. R-6446-B which set forth these requirements should be rescinded.

(13) The Commission exercises continuing jurisdiction over the operations of the Bravo Dome Unit and thereby has the right to review the operations of this unit at such times as it deems appropriate.

(14) Section 5 of the Unit Agreement requires:

(a) the Unit Working Interest Owners redetermine the tract participations of each tract in the unit area (Section 5.2); based on the productive acres of each tract as determined by a zero net pay isopachous line based on the extrapolated net pay intervals in all wells in the unit area in accordance with industry-wide acceptable practice for interpreting underground geologic features on maps (Section 5.2.1);

(b) any tract shown to be outside the "then known productive limits of the unit area shall be automatically eliminated from the unit area" (Section 5.2); and

(c) new tract participations shall be calculated by dividing the productive acres in each tract by the total productive acres contained in all tracts in the unit area.

(15) A Bravo Dome Interest Owner Technical Committee was formed in 1993 to review the data on the unit area and to determine the zero net pay isopachous line in the reservoir.

(16) By letter dated August 31, 1994, Amoco Production Company advised the Commission that this Technical Committee had established the zero net pay isopachous line. A meeting with the Commission's staff was held on September 19, 1994 to review the proposed contraction and this issue was set for hearing before the Commission pursuant to Order Paragraph 6 of Order No. R-6446-B.

(17) At the hearing, Amoco presented evidence which established:

(a) The productive interval in the Bravo Dome Unit area is a simple Loessite facies reservoir (Testimony of Wacker, at 34-35) which is comprised of well consolidated sandstone stringers that produce from four separate zones: the Upper Tubb, Middle Tubb, Lower Tubb and Granite Wash formations (Amoco Exhibits 4 and 13, Testimony of Wacker at 36; Testimony of Collier at 103-111) which varies in thickness from approximately 100 feet in the Northwest to more than 400 feet in the Southeast portion of the Bravo Dome Unit (Testimony of Wacker, at 36).

(b) The top of the productive interval is either (1) the top of the Unitized Interval (base of the Cimarron Andydrite) which was determined by well control information (Amoco Exhibit 7, Testimony of Wacker at 45, 46-48) and confirmed and refined by seismic data in the unit area (Amoco Exhibit 7, Testimony of Cosban at 83-84), or (2) the first occurrence of sandstone below the top of the Unitized Interval with porosity greater than the reservoir's 12% porosity cutoff (Amoco Exhibit 8, Testimony of Wacker at 48-49, Amoco Exhibits 14, 15, 16, 17A and 17B, Testimony of Collier at 112-116).

(c) The base of the productive interval is either (1) the gas water contact or (2) in the northwestern portion of the unit, the basement rock (Amoco Exhibit 9, Testimony of Wacker at 49-50, Testimony of Cosban at 86). The gas-water contact in this reservoir is tilted and undulates and its location has been determined by interpretation of well information (Amoco Exhibit 9, Testimony of Wacker at 49-50) and by seismic data (Amoco Exhibits 9, 11 and 12, Testimony of Cosban at 86-94) and refined by the determination of water saturations for each well in the unit area (Amoco Exhibits 18 through 25, Testimony of Collier at 116 through 127).

(d) Non-productive areas within the Unit have been identified by well control information (Amoco Exhibit 10, Testimony of Wacker at 51-53) and seismic data (Amoco Exhibits 11 and 12, Testimony of Cosban at 86-89, 93-94).

(18) All reliable data available to the Unit Working Interest Owners was utilized to define the productive limits of the reservoir in the Bravo Dome Unit area and the most recent technology accepted by the industry to determine the zero net pay isopachous line in the reservoir was used. (Testimony of Wacker at 25-32, 54-55).

(19) The accuracy of the methods utilized to determine the reservoir limits has been confirmed by comparing it to test data from wells located in close proximity to the zero net pay isopachous line. This data shows there are no tests on any wells outside the line which indicated the presence of carbon dioxide gas and all wells inside this line showed the presence of carbon dioxide gas by tests or by log analysis (Amoco Exhibit 27, Testimony of Collier at 129-131).

Case No. 11122
Order No. R-_____
Page 6

(20) The location of the zero net pay isopachous line was identified, its relationship to the tracts within the unit area and the new Unit Boundary, as described in Exhibit A attached hereto and incorporated herein by reference, was reviewed. (Amoco Exhibit 29, Testimony of Allison, at 142-143).

(21) The Working Interest Owners in the Bravo Dome Unit have established a zero net pay isopachous line showing the currently known productive limits of the reservoir in the unit area based on the extrapolated net pay intervals in all wells in the unit area in accordance with industry-wide acceptable practices for interpreting underground geologic features on maps. mapping reservoirs and reservoir limits

(22) The determination of the zero net pay isopachous line in the Bravo Dome Unit area and the resulting contraction of the Unit area will not reduce or otherwise impair or limit the production of carbon dioxide gas from the unit since only non-productive acreage is eliminated from the Bravo Dome Unit (See Amoco Exhibit 27, Testimony of Collier, at 129-131) and ~~therefore approval of this contraction will not cause the waste of carbon dioxide~~. owners whose acreage has been excluded from the Unit (outside the zero net pay isopachous line) can drill wells on the acreage

(23) Approval of the proposed contraction of the Bravo Dome Unit as described on Exhibit A attached hereto and incorporated herein by reference as required by the Unit Agreement (Section 5.2) will afford the owners of carbon dioxide in the unit area the opportunity to produce their just and equitable share of carbon dioxide in this reservoir thereby protecting correlative rights. (Amoco Exhibits 28 through 30, Testimony of Allison at 141-145). will prevent waste of carbon dioxide and

(24) The recommendation of the Bravo Dome Carbon Dioxide Gas Unit Working Interest Owners to contract the Bravo Dome Carbon Dioxide Gas Unit area is in the best interest of conservation and should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The recommendation of the Bravo Dome Carbon Dioxide Gas Unit Working Interest Owners to contract the Bravo Dome Carbon Dioxide Gas Unit area as described in Exhibit A attached hereto and incorporated herein by reference is approved.

(2) This approval shall be effective as of 7:00 o'clock a.m. on the first day of December, 1994.

[margin note:] thereby protecting their correlative rights. Amoco indicated they would release acreage outside the zero net pay isopachous line if a release is requested and Amoco should honor this commitment (Testimony of Allison at 162-163)

(3) Order Paragraphs 4 and 5 of Order No. R-6446-B which require periodic demonstrations by the Unit Operator of the Bravo Dome Carbon Dioxide Gas Unit at public hearings that its operations within the unit area are resulting in the prevention of waste and the protection of correlative rights on a continuing basis are hereby rescinded.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM WEISS, Member

WILLIAM J. LeMAY, Chairman

S E A L

Nov 2 - 1994

Dear Commission Representatives -

As a mineral / royalty owner I have been advised to contact you in my behalf.

On the recent letter & reciept from Amoco the statements presented made no sence to me.

I lost my very ill husband this past June and life has become very difficult for me. We truly depended on the monthly checks recieved from Amoco. Now that he is gone I truly need all the help I can get.

Our parents struggled to settle this land and it was honorable that they retained the mineral rights and pass this on to their

heirs. We children as
heirs wish to remain
true & to our legacy.
Your appreciate so much
efforts to help us.

Thank you so much.

Sincerely -

Mrs. Mary Lou Wilson
P.O. Box 457
Seminole, Tex. 79087

Re: Case No. 11122;
Docket No. 30-94

702 Fairview Lane
Espanola, NM 87532
October 31, 1994

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, NM 87504

Reference: Case No. 11122, Docket No. 30-94

I am opposing the proposed changes of boundaries by AMOCO that were proposed before the Commission recently regarding the Bravo Dome Carbon Dioxide Gas Unit.

AMOCO advised by letter to their mineral and royalty owners that they want to change the boundaries of the Bravo Dome Carbon Dioxide Gas Unit, which I believe effects my mineral rights and royalties. AMOCO's notification letter is very vague and does not reveal clearly how they determined the boundary changes proposed and more importantly AMOCO does not offer any proof that certain portions of the gas unit are not producing as they imply.

I request that the Commission examine thoroughly AMOCO's proposal to ensure that proof is provided by AMOCO about the gas producing areas they lease in the Bravo Dome Carbon Dioxide Gas Unit.

Sincerely yours,

Alois Norris

Alois Norris

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

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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

October 28, 1994

TO ALL INTERESTED PARTIES LISTED ON ATTACHED LIST:

Re: Case No. 11122 - October 20, 1994
In the Matter of the Hearing Called to Consider the Recommendations of the Bravo Dome Carbon Dioxide Gas Unit Working Interest Owners to Contract the Bravo Dome Carbon Dioxide Gas Unit Area

To Whom it May Concern:

Pursuant to your request, enclosed is a copy of the Exhibits tendered by Amoco Production Company at the above-captioned hearing.

The court reporter, Steven T. Brenner, has advised that the transcript, consisting of 187 pages, is now available. You may obtain a copy directly from him at the following address: Rt. 19, Box 89-SB, Santa Fe, New Mexico 87505 or by telephone at (505) 989-9317, or from the Oil Conservation Division at 2040 Pacheco Street, Santa Fe, New Mexico 87505 or by telephone at (505) 827-7132.

Very truly yours,

WILLIAM F. CARR

11-2-94

Ora Lea Tatta
3306 Marion
Amarillo, Tx. 79106

WFC:mlh
Enclosures

Tola Maude Bishop
Kenneth L. Bishop
Joe G. Bishop
Lola B. (Bishop) Jones
Ora L. (Bishop) Tatta
Marilyn K. Bishop

Re the Oil Conservation Comm.
We reserve the right to challenge.

Sincerely,
Ora Lea Tatta

October 21, 1994

New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM

Dear Commissioners:

I was in attendance with my wife Loretta Boardman, representing the Cooper Family interests, at the Bravo Dome Carbon Dioxide Gas Unit hearing (Case Number 11122) conducted before you on October 20, 1994. I am writing this letter on behalf of the Cooper Family to express some concerns we have with portions of the testimony and conclusions presented by employees of the Amoco Production Company at this hearing.

Apparently, the zero-pay isopach line, per the testimony of the project geologist, was generated solely by the computer with no involvement or influence imposed by the team members. According to him, the location of this line was precisely derived and therefore irrefutable by humans. As a matter of fact, this hypothesis is totally invalid since computers accomplish only what they have been programmed to do by humans and then the results should be evaluated by humans to insure the accuracy and acceptability of the computer generated results. The team members need to readily acknowledge responsibility for the final location of the line and the other conclusions and study results since they approved the methodology employed by the software and they collected and entered the basis data into the computer. Consequently, in spite of the testimony to the contrary, the location of the zero-pay line is subject to all of the frailties generally associated with any activity performed by humans.

None of the Amoco team of geologists and engineers were nationally recognized in the oil and gas industry nor, according to their testimony, were nationally recognized geologist or engineer specialists consulted by members of the team during the course of this study. As we know, ground water hydrology, as well as the subsurface study of other fluids and gases such as oil, carbon dioxide and natural gas, is an extremely complicated field that requires many years of experience in order to become highly proficient. This is especially true in New Mexico where the state's geology was eventually molded by many different forces and varying climatic conditions during the formation of its subsurface structures and foundations. Consequently, in

arriving at an impartial determination of the validity of the location of the zero-pay icopach line, hopefully, the commission will recognize the combined relative inexperience level of the study team and will affirmatively consider the use of technical consultants to review the results of the study and the ensuing testimony who are imminently qualified in this complicated field. To do otherwise would ignore a valuable source of expertise that could be extremely beneficial in arriving at an informed and enlightened decision.

The naive statement by Amoco's lead geologist that the boundary limits of the productive area could only recently be exactly predicted because of the use of computers and the result of the recent (1991-1993) technological revolution in the field of geology, akin to the recent technological explosion in the space program, was absurd. He asserted that any subsequent analysis of the area would only produce the exact same results as the present study. He claimed this was true because the scientific methodology and data collection techniques used by the investigating team had achieved such a high level of refinement and reliability that the study results and findings could not be improved upon in the future. This attitude is inconsistent with past facts and enlightened future prognostications. Geologists and engineers were using seismic techniques, computer applications and other high-tech methodology to predict the location of geologic structures and other subsurface conditions over 20-years ago. Since that time, many advances in subsurface exploration and testing technology have occurred and will continue to do so in the future. I have serious reservations with this Amoco's team position and hopefully the full commission will assess and consider its implications in their upcoming deliberations.

The Amoco team also claimed that the location of the ground water table had an appreciable influence on the establishment of the final location of the proposed boundary between the productive and unproductive areas of the Bravo Dome. However, according to their testimony, the team did not consider it important to evaluate the current recharging tendencies associated with the underground water basin. Due to the pronounced effect that the presence of this water table apparently has on the porosity and the permeability of the existing subsurface materials in permitting or impeding the flow of carbon dioxide gas, the determination of the projected trend of the boundaries of the water basin would seem to be a vital parameter in the establishment of the ultimate boundaries of the unproductive areas of the dome. The failure by the team to consider the relevance of this information and to obtain the necessary supporting data to make these projections could be a major flaw in the study. Obviously, if the horizontal extent of the water table is decreasing, the size of the underground carbon dioxide basin should accordingly be increasing.

Lastly, according to the charts and testimony presented by the Amoco witnesses at the hearing, collaboration of the location of the zero-pay isopach line in the southwestern portion of the unit area (this may also be true along the eastern edge of the unit area as well) was facilitated by observing the carbon dioxide production or its lack of production in existing wells or borings on both sides of this line. It was stated that no carbon dioxide gas was obtained from wells to the south of the zero-pay line while, in all instances, wells to the north of this line were carbon dioxide producers. In the absence of other data that was either not presented or is in fact not available, I question the team member's reliance on the information obtained from these wells to add credence to the "exact" location of many miles of the projected zero-pay icopach line. Within the southwestern portion of the dome, use of such data would require the unjustified extrapolation of localized information as far away as two to three townships from the only well in the area that provided the information used in the extrapolation. Hopefully, clarification of this matter will be required and carefully considered by the commission before the commission renders its final decision on the validity of the location of the zero-pay line and the acceptability of the other hypothetical concepts postulated by the Amoco Study Team.

In conclusion, based upon the testimony presented before you on October 20, 1994, I do not believe that the Amoco Production Company proved conclusively and beyond a reasonable doubt the authenticity or accuracy of the projected zero-pay isopach line. Consequently, I strongly recommend that you deny their request to constrict the present limits of the Unitized Formation.

Respectfully yours,

James O. Boardman

James O. Boardman, PE
7609 Summer, NE
Albuquerque, NM 87110

TO WHOM IT MAY CONCERN

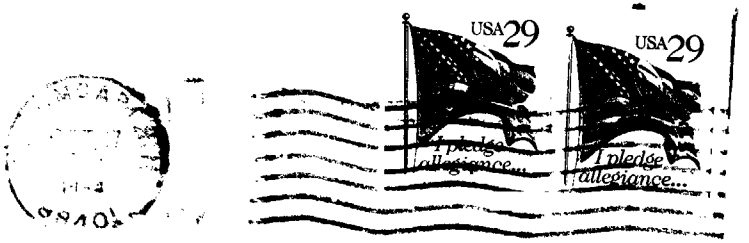
As one of the registered parties of record, I concur with the comments, conclusions and recommendations as stated above.

Date: 10-27-94 Signature: Ethel C Cothern

Ester C Slack

Madie C Prather

Ethel C Cathers
4184 Quay Rd. H 67
Jemez Canon, N.M.
88040



New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, N.M.
87501

October 21, 1994

New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM

Dear Commissioners:

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this matter will be required and carefully considered by the commission before the commission renders its final decision on the validity of the location of the zero-pay line and the acceptability of the other hypothetical concepts postulated by the Amoco Study Team.

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Respectfully yours,

James O. Boardman

James O. Boardman, P.E.
7609 Summer, NE
Albuquerque, NM 87110

TO WHOM IT MAY CONCERN

As one of the registered parties of record, I concur with the comments, conclusions and recommendations as stated above.

Date: 11/1/94 Signature: Virginia C. Shaw

October 21, 1994

New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM

Dear Commissioners:

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Respectfully yours,

James O. Boardman

James O. Boardman, PE
7609 Summer, NE
Albuquerque, NM 87110

TO WHOM IT MAY CONCERN

As one of the registered parties of record, I concur with the comments, conclusions and recommendations as stated above.

Date: Oct-26 Signature: Nellie R. Cooper Johnston

October 21, 1994

New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM

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James O. Boardman

James O. Boardman, PE
7609 Summer, NE
Albuquerque, NM 87110

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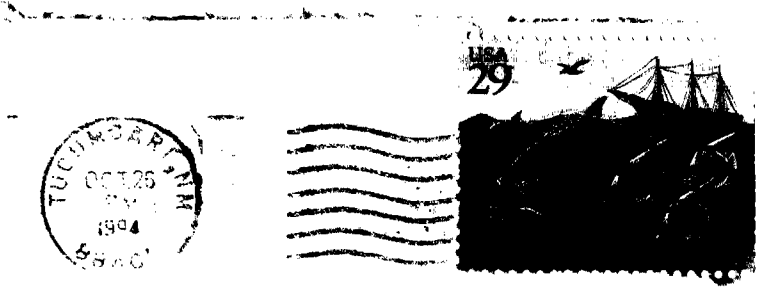
Date: 10/25/94 Signature: Ruby A. Cooper

R. COOPER
709 E. BARNES
TUCUMCARI, NM 88401



NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
310 OLD SANTA FE TRAIL
SANTA FE, NM 87501

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STATE LAND OFFICE
SANTA FE, N.M.

October 21, 1994

New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
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GARY DON COOPER
710 E. BARNES
TUCUMCARI, NM 88401

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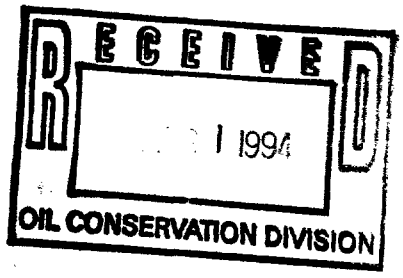
October 21, 1994



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Albuquerque, NM 87110

TO WHOM IT MAY CONCERN

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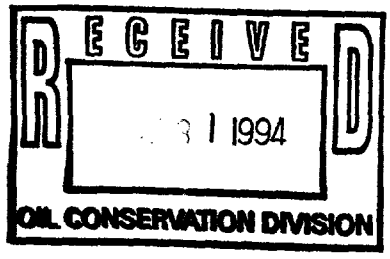
Date: 10-26-94 Signature: Betty Filorene Cooper Cassel
Trustee
Robert Clark Cooper Trust

October 21, 1994



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S/ James O. Boardman

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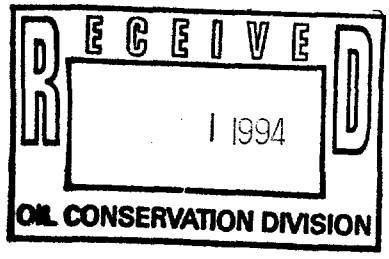
Date: Oct. 23, 1994 Signature: Donna Lee Kemmer

ORIGINAL

October 21, 1994



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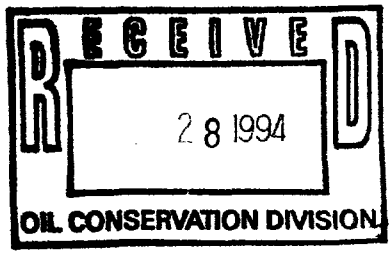
7609 Summer, NE
Albuquerque, NM 87110

TO WHOM IT MAY CONCERN

As one of the registered parties of record, I concur with the comments, conclusions and recommendations as stated above.

Date: 10-24-94 Signature: Margie C. Dube
401 Ross Blvd.
Pecos, Tx. 79772

October 21, 1994



New Mexico Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, NM

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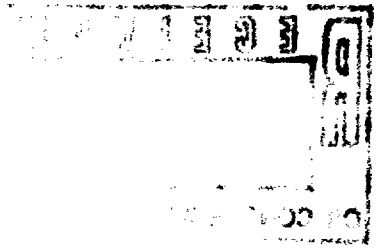

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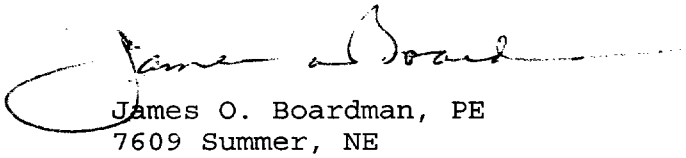

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State Land Office Building
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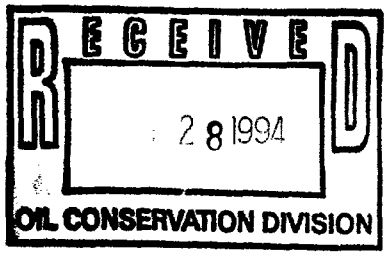
Date: 10/24/94 Signature: Edward E. Cooper

October 21, 1994



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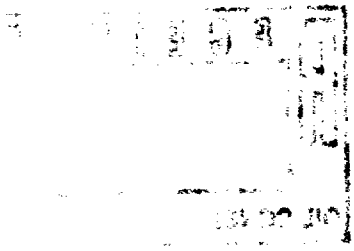

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Date: 10/24/94 Signature: Harry D Cooper

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

MEMORANDUM

TO: BRAVO DOME FILE

FROM: WILLIAM J. LEMAY, Director
Oil Conservation Division

SUBJECT: BRAVO DOME

DATE: OCTOBER 18, 1994

A telephone conversation between Bill LeMay and Don Cooper took place from 8:50 am to 9:05 am on October 18, 1994 in which the Bravo Dome hearing was discussed in a general way. To be a party of record in the proceedings was clarified and questions concerning equity interests were raised but were dismissed by Bill LeMay who explained that OCC jurisdiction does not extend to equity interests.

Don Cooper
tel. call
8:45 – 7:00

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

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THE ROMERO LAW FIRM, P. A.

Dave Romero, Jr.

RECEIVED
OCT 18 1994
OIL CONSERVATION DIV.
SANTA FE

October 14, 1994

New Mexico Oil Conservation Commission
New Mexico State Land Office Bldg.
310 Old Santa Fe Trail
Santa Fe, New Mexico

Dear Commission:

I represent Mr. Bennie Garcia individually and Mr. Bennie Garcia who is the Personal Representative of the Estate of Herbert Garcia who are both interest owners in the Bravo Dome Carbon Dioxide Gas Unit located in Harding, Quay and Union Counties.

Mr. Garcia wishes to be named as a party and objects to the proposed removal of his property entitled to royalty payments. Mr. Garcia or an authorized representative will be at the hearing on the 20th.

Please send me a copy of your rules of procedure.

Sincerely,

THE ROMERO LAW FIRM, P.A.

DAVE ROMERO JR.

BY: Dave Romero, Jr.
Attorney for Bennie Garcia

DER/dmr
lbgarcia

XC: B. Garcia
file

Romero Plaza, Suite #1 P.O. Box 30-30
Las Vegas, New Mexico 87701
(505) 425-7000
FAX: (505) 425-3865

SANDIA FOUNDATION
REAL ESTATE INVESTMENTS
Two Woodward Center Suite 204
700 Lomas Boulevard NE
Albuquerque, NM 87102 (505) 242-2684

Russel D. Hiller III, CCIM
Managing Executive

October 13, 1994

New Mexico Oil Conservation Commission
310 Old Santa Fe Trail
Post Office Box 2088
Santa Fe, New Mexico 87504

RE: Your Case Number 11122 Bravo Dome Carbon Dioxide Gas Unit located in Harding, Quay and Union Counties, New Mexico

Dear Commissioners:

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Yours Truly,

SANDIA FOUNDATION

R. D. Hiller

Russel D. Hiller

RDH:pj

Mrs. Allen ~~[redacted]~~ Wycoff

505/445-2601

85 yrs. old
57 yrs. in NM

Mrs. Sarah Ellen Wikoss (Widow of Allen Wikoss)
300 S. 6th St.
Raton, New Mexico

S. M. BUSH
HC 72 BOX 60
CLAYTON, NEW MEXICO 88415-9601
(505) 374-8796

October 7, 1994

Mr. William J. LeMay
State of New Mexico
Oil Conservation Division
New Mexico State Land Office Building
Morgan Hall
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

RE: CASE 11122

Dear Mr. LeMay

Pursuant to the letter of September 23, 1994, from Amoco Production Company, we would request your assistance in this matter of Amoco excluding payment from some of us, supposedly outside the productive limits of the Unitized Formation in the Unit Area. When Amoco came to this area to plot out the boundaries, their agreement was to be a share and share alike program to which all that signed up agreed. We only ask that you mandate that they (Amoco) live up to their promises and obligations. Although our income from Amoco is minimal, their objective is clear, and ask that you reject their proposal to shrink their financial obligations by downsizing the original boundaries.

Sincerely

Stephen M. Bush

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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.

APPLICATION OF Amoco Production Co
P.O. Box 3092
Houston, TX 77253-3092

PRE-HEARING STATEMENT

This prehearing statement is submitted by Opposition as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT	ATTORNEY
Amoco Production Co	

name, address, phone and contact person

OPPOSITION OR OTHER PARTY	ATTORNEY
Donald Terrence Sewell &	None to be present
Rufus Donald Sewell B.A.'s	
330565-00-3 & 330567-00-9.	
1909 Chandelle N.E. Albuquerque,	
N.M 87112 505-293-0724	

name, address, phone and contact person

STATEMENT OF CASE

APPLICANT
(Please make a concise statement of what is being sought with this application and the reasons therefore.)

Please see attached letter from Amoco Production Co. concerning Section 5.2 of the Bravo Dome Carbon Dioxide Gas Unit Agreement, dated September 29, 1994, and the map pictured on the opposite side showing an imaginary (isopachous) line declaring Zero Net pay areas that had been (positive) pay areas for the p several years.

OPPOSITION OR OTHER PARTY
(Please make a concise statement of the basis for opposing this application or otherwise state the position of the party filing this statement.)

The above correspondence indicates that we who are partial ow of Bravo Dome CO2 Gas Ut TR 0213-A and 0213-B. are being Eler from the pay zone of the Unitized Formation Unit Area and A being put into the "Zero Net pay isopachous line" zone. We, Royalty owners, wish to attend this hearing in order to underst and object, if necessary, the this imaginary line that Amoc has subjectively drawn possibly harming our interests i. Negitive financial manner.

Since this is an isopachous line and no real Explaination of it's e A truely detailed explanation is expectedd. Especially to proper Discriptions: T22N R35E Sec8 SW4 As to CO2 RTS in The Tu Union Cty NM and T-22N R-35E Sec 5, S2 As to CO2 Unio NM.

Pre-hearing Statement
NMOCD Case No. ____
Page 3

PROPOSED EVIDENCE

APPLICANT

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS

OPPOSITION

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS

PROCEDURAL MATTERS
(Please identify any procedural matters which need to be resolved prior to the hearing)

I, Donald Terrence Sewell, and my mother Hazel Inez
Representing my father, Rufus Donald Sewell, represent ourse
At present. We reserve the right to present original doc
and the fact of previous proof by Amoco that our product u
of proven value.

Donald T. Sewell

Amoco Production Company
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253-3092

September 23, 1994

TO: ALL INTEREST OWNERS IN THE BRAVO DOME CARBON DIOXIDE GAS UNIT LOCATED IN HARDING, QUAY AND UNION COUNTIES, NEW MEXICO

Dear Owner:

Amoco Production Company, operator of the Bravo Dome Carbon Dioxide Gas Unit, hereby notifies you that the Unit Working Interest Owners have determined the productive limits of the Unitized Formation in the Unit Area. A plat showing the current Unit boundary and the line designating the productive limits of the Unitized Formation is printed on the back side of this letter. The plat shows: (i) the outline of the current Unit boundary; (ii) the Townships and Ranges; (iii) the section numbering method (shown by way of example in the center of the plat); and (iv) the productive limits of the Unitized Formation. The shaded area lies within the productive limits of the Unitized Formation. Pursuant to Section 5.2 of the Bravo Dome Carbon Dioxide Gas Unit Agreement, any tract outside the productive limits (i.e. outside the shaded area) is automatically eliminated from the Unit Area and the Tract Participation of each tract must be redetermined.

A hearing on this matter has been set before the New Mexico Oil Conservation Commission at 9:00 a.m. on October 20, 1994 in Morgan Hall, New Mexico State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico. The hearing will be limited to the determination of the limits of the Unitized Formation (zero net pay [redacted] line) in the Unit Area.

You are not required to attend this hearing, but as the owner of an interest which may be affected by contraction of the Unit Area, you may appear at the hearing and present evidence. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

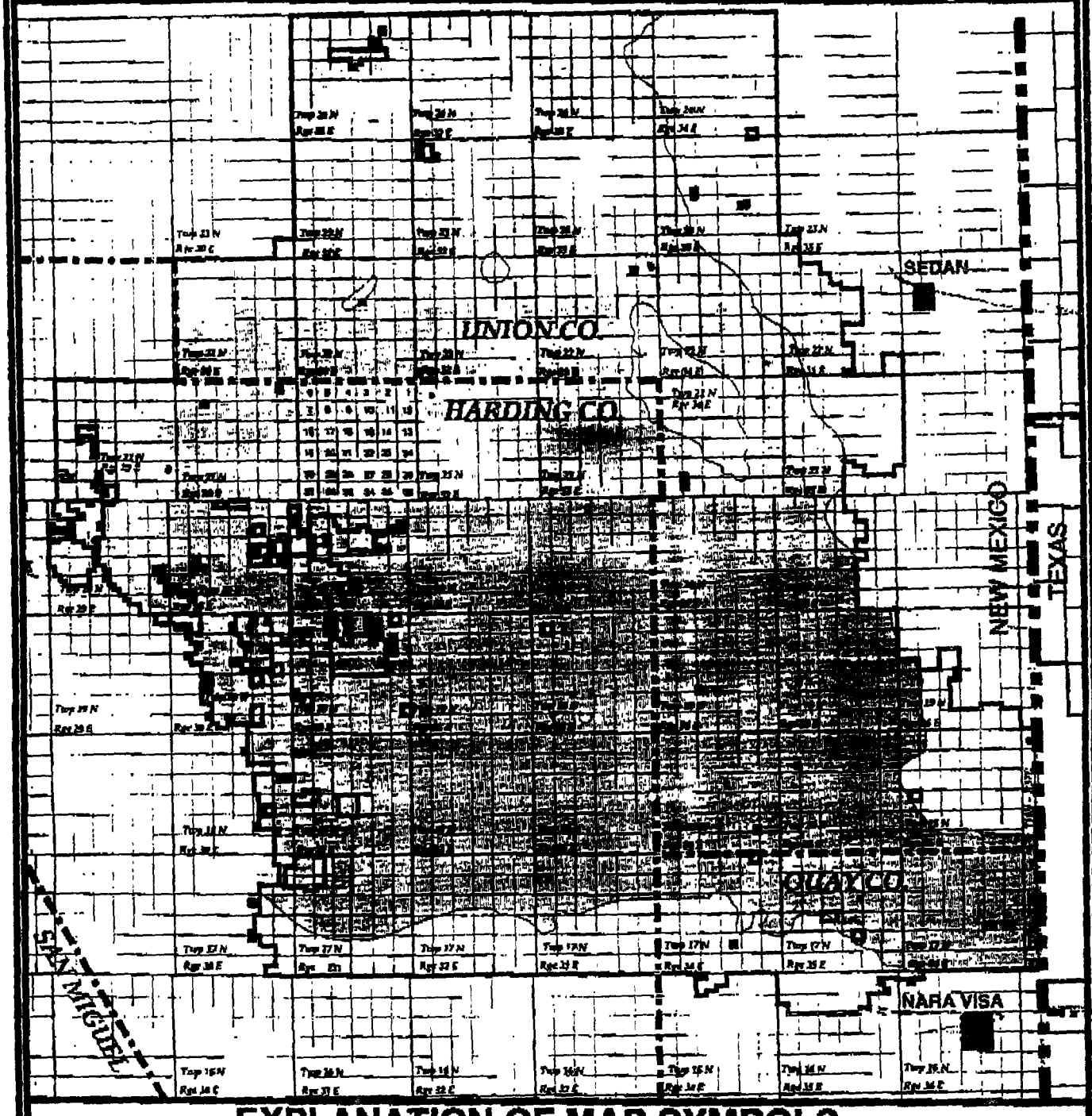
Parties appearing in cases before the Commission have been requested to file a Prehearing Statement substantially in the form prescribed by the Oil Conservation Division (Memorandum 2-90). Prehearing statements should be filed by 4:00 p.m. on the Friday before a scheduled hearing.

827-5800

Very truly yours,

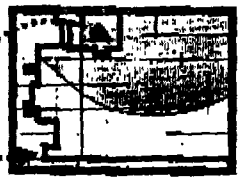
AMOCO PRODUCTION COMPANY

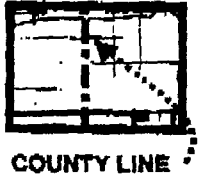
BRAVO DOME CARBON DIOXIDE GAS UNIT



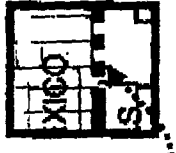
EXPLANATION OF MAP SYMBOLS

CURRENT "BRAVO DOME CARBON DIOXIDE GAS UNIT" BOUNDARY





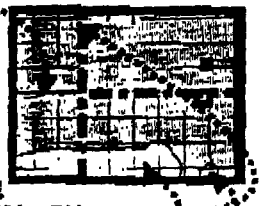
COUNTY LINE



STATE LINE

SHADED AREA REPRESENTS PRODUCTIVE AREA OF THE UNITIZED FORMATION.

UNSHADED AREA INSIDE THE UNIT BOUNDARY REPRESENTS UNPRODUCTIVE AREAS OF THE UNITIZED FORMATION



LOCATION OF SECTIONS WITHIN EACH TOWNSHIP

S. M. BUSH
HC 72 BOX 60
CLAYTON, NEW MEXICO 88415-9601
(505) 374-8796

October 7, 1994

Mr. William J. LeMay
State of New Mexico
Oil Conservation Division
New Mexico State Land Office Building
Morgan Hall
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

RE: CASE 11122

Dear Mr. LeMay

Pursuant to the letter of September 23, 1994, from Amoco Production Company, we would request your assistance in this matter of Amoco excluding payment from some of us, supposedly outside the productive limits of the Unitized Formation in the Unit Area. When Amoco came to this area to plot out the boundaries, their agreement was to be a share and share alike program to which all that signed up agreed. We only ask that you mandate that they (Amoco) live up to their promises and obligations. Although our income from Amoco is minimal, their objective is clear, and ask that you reject their proposal to shrink their financial obligations by downsizing the original boundaries.

Sincerely

Stephen M. Bush

Bravo Dome Carbon Dioxide Gas Unit
September 19,1994 -- Review

I. Locator Map

II. Map of Bravo Dome Carbon Dioxide Gas Unit with wells

III. Map showing Zero Net Pay Isopach Line

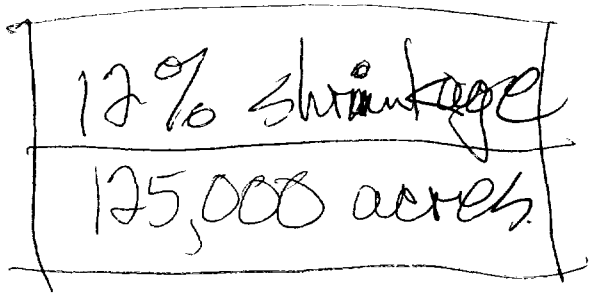
IV. Bravo Dome Reservoir Description Flow
- Depositional Map
- Montage

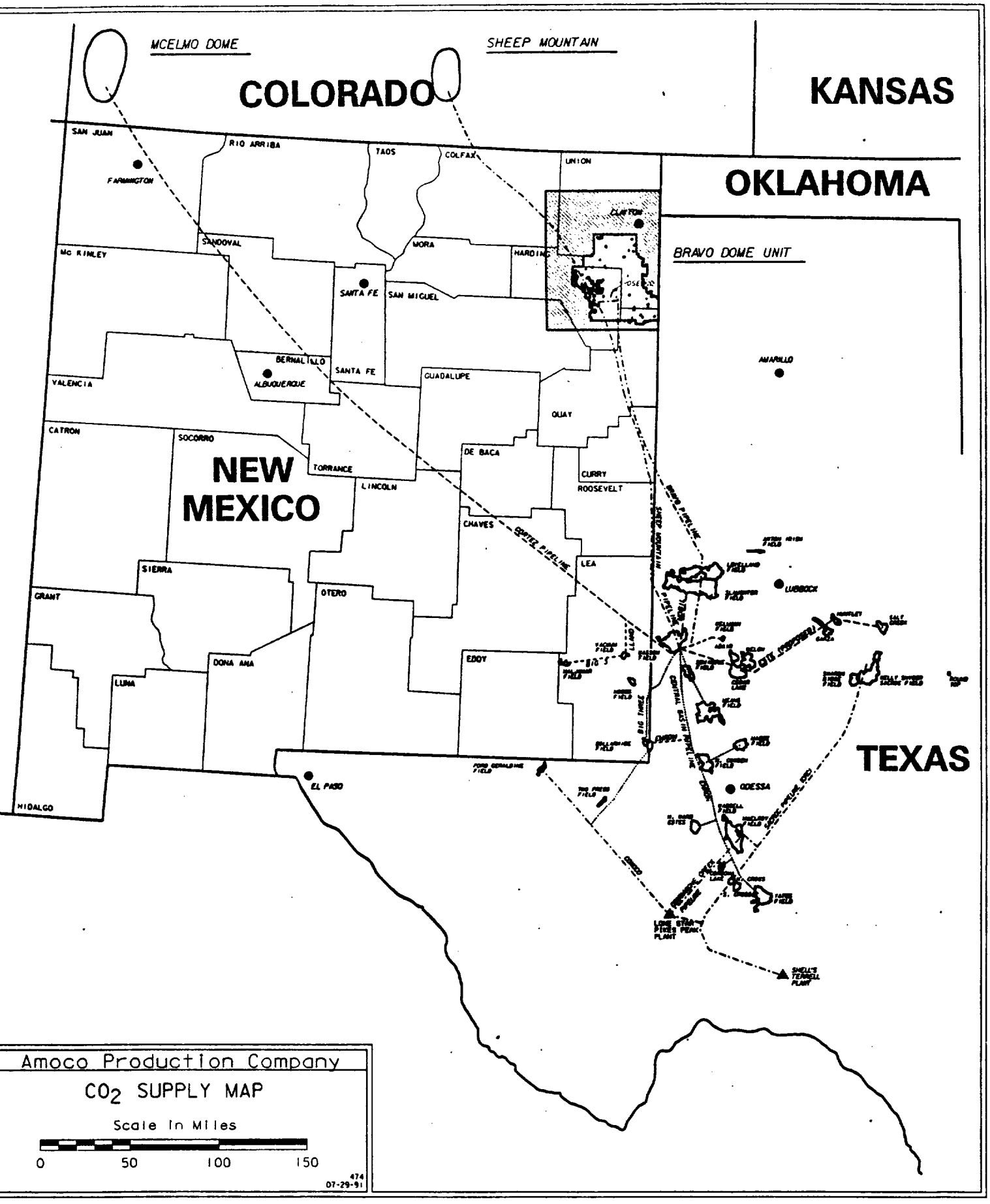
V. Technical Sub Committee Meetings and Concurrence on zero line

VI. Plat showing the Unit Boundary

VII. Exhibits showing the Unit Ownership

VIII. Open Discussion





Amoco Production Company

CO_2 SUPPLY MAP

Scale In Miles

0 50 100 150

474
07-29-91

Bravo Dome Reservoir Description
Zero Net Pay Isopach

Geological

- Regional Paleogeographic Setting
- Depositional Model
- Core description
- Core to log calibration
- Structure Map (Seismic/Well)

Geophysical

- Pick Seismic Horizons (Tubb)
- Make Depth Map
- Bright Spot Technology

Petrophysical

- Core Inspection
- Core analysis ϕ, k, Sw
- Special core analysis m, n, Cap Psi
- Relative Permeability Data

Reservoir

- Electric Logs
- Selective Testing
- Rw - water analysis
  - pickett plots
- Selective Tests
- Bottom Hole Pressure

Map Gas Water Contact

Structure/Gas Water Contact

facies, pore systems, ϕ, k cutoffs

Gas Water Contact

Zero Net Pay Isopach

c:\powerpnt\sam\res.ppt

Bravo Dome Carbon Dioxide Gas Unit - Technical Subcommittee

The purpose of the Bravo Dome Carbon Dioxide Gas Unit Technical Subcommittee - Reservoir Description was to define zero net isopachous line. A total of 97.84% of the working interest ownership participated and took part and made significant contributions to the Reservoir Study that resulted in a better evaluation using industry acceptable methods. Below is a list of the meetings held and the primary outcomes of each:

April 17, 1993	**General Overview of task** **Develop definition of zero net pay isopach** **Discussion of Industry standards**
February 13, 1994	**Work to date and general direction**
July 7, 1994	**Work to date and preliminary zero isopach line.** **Methodology agreement**
September 1, 1994	**Final zero isopach line and Working Interest Owner concurrence.**

The purpose of each of these meetings entailed:

- **Information Sharing / Goals / Timing**
- **Generate a common understanding**
- **Show work performed**
- **Share technology**
- **Peer review - quality of work and confirmation**
- **Meet industry standards**
- **Drive to a completed product / drive to closure.**
- **Develop a consensus on the final product.**

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

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

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

JACK M. CAMPBELL
OF COUNSEL

JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

cc: Roy C. David Mike Rand
Plan to attend if in town.
Bill

August 31, 1994

HAND-DELIVERED

William J. LeMay, Chairman
New Mexico Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87501

Re: ***Bravo Dome Carbon Dioxide Gas Unit Contraction***

Dear Mr. LeMay:

Article 5.2 of the Unit Agreement for the Bravo Dome Carbon Dioxide Gas Unit directs the Working Interest Owners to redetermine the tract participation of each tract within 15 years after the first sales of unitized substances and to contract the unit area to exclude any tract which is outside "the then known productive limits of the Unit Area."

To comply with this requirement, Amoco and a Bravo Dome Working Interest Owner Technical Committee have established a zero net pay isopachous line in the Tubb formation. In accordance with the Unit Agreement, those tracts having no productive acreage now must be eliminated from the Unit Area.

The Unit Agreement was approved by the Oil Conservation Commission by Order No. R-6446-B which was entered on December 1, 1980. This order provides that all "contractions of the unit area shall be submitted to the Commission for approval." Order R-6446-B, Order Paragraph 6.

Pursuant to Article 5.2 of the Unit Agreement this contraction must also be approved by the Commissioner of Public Lands and a meeting has been scheduled between Amoco representatives and the Commissioner of Public Lands to review this contraction on September 19, 1994 at 9:30 a.m.

Amoco would appreciate an opportunity to also meet with you and your staff on September 19, 1994. If you can meet with us at 1:30 p.m. on that date, Amoco will review the proposed contraction and supporting information and it can be determined what additional action will be required to secure the approval of the Commission as required by Order No. R-6446-B.

Very truly yours,

WILLIAM F. CARR
ATTORNEY FOR AMOCO PRODUCTION COMPANY
WFC:mlh
cc: A. Andrew Gallo, Esq.
Leah Taylor, Esq.