MEETING MINUTES
Eunice Monument South Unit
Technical Committee and
Working Interest Owners' Committee

May 10, 1979 - August 25, 1983

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EXHIBIT NO. 21
Case No. 8399
November 7, 1984

Gulf Oil Exploration and Production Company

R. L. Borgan
MANAGER, JOINT OPERATIONS
SOUTHWEST DISTRICT

P. O. Drawer 1150
Midland, TX 79702

July 31, 1979

Working Interest Owners

Re: Proposed Eunice Monument South Unit
Lea County, New Mexico

Gentlemen:

This letter is to inform you of our interest in unitizing the Grayburg-San Andres interval in the south end of the Eunice Monument Field. Two meetings have been held to date and the majority of the Working Interest Owners are in favor of a unitized waterflood project. The area to be studied for possible inclusion in a unit has just been expanded to include additional leases; therefore, some of you have not previously been notified of our unitization effort.

A brief review of the activities to date regarding the proposed unit is as follows: The initial meeting of Working Interest Owners was called by ARCO Oil and Gas Company and was held on May 10, 1979. Their cursory reservoir study showed that a waterflood project would be successful. The study area which ARCO Oil and Gas Company used contained 9,760 acres in the south end of the Eunice Monument Field. During the first meeting of the Working Interest Owners, ARCO Oil and Gas Company reviewed the results of their study and pointed out that Gulf Oil E&P Company apparently has the largest interest in the area which they studied and that Gulf Oil E&P Company was given the option of whether or not they wanted to become the Unit Expeditor and ultimately the Operator for the proposed Unit. Gulf Oil E&P Company subsequently contacted all the Working Interest Owners and advised that they did indeed wish to be the Unit Expeditor and Operator.

A second meeting was then called by Gulf Oil E&P Company for July 26, 1979 in our Midland Office. At this meeting an expanded area of study for possible unitization was presented which included additional acreage to the north, east and south of the original proposed unit area. Copies of the minutes of both these meetings are included for your review and for your record.

It is hereby requested that each Working Interest Owner notify Gulf Oil E&P Company as soon as possible if you are interested in participating in a unitized waterflood project in the expanded study area as defined in

the meeting of July 26, 1979. If you are interested in this proposed project, please provide us with names and addresses for your representatives to a Working Interest Owners Committee and a Technical Committee for future unitization meetings.

Enclosed you will find the following information:

1. Minutes of the initial Working Interest Owners meeting called by ARCO Oil and Gas Company on May 10, 1979.

2. Minutes of the initial Technical Committee meeting called by Gulf Oil E&P Company on July 26, 1979.

3. Handouts given to Technical Committee members at the July 26, 1979 meeting. These include a plat showing the original study area and the expanded study area for possible unitization, a sample copy of a well data sheet we plan to use for data gathering purposes and an outline for the proposed waterflood feasibility study which we plan to perform as the basis for unitization.

If you have any questions concerning this matter, please contact Mr. J. A. Slater or myself in Midland at (915) 682-7301.

Yours very truly,

R L Borgan

R. L. Borgan

JAS/ph
Attachments

Mailing List

Working Interest Owners in Expanded Study Area

Cities Service Oil Company
P. O. Box 1919
Midland, Texas 79701
Attention: E. F. Motter

Burt Fields Estate
11835 Preston Road
Dallas, Texas 75230

William A. and Edward R. Hudson
P. O. Box 198
Artesia, New Mexico 88210

John W. McInnis and Hugh N. Wood
c/o Oil and Gas Services
P. O. Box 763
Hobbs, New Mexico 88240

James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

Southern Petroleum Exploration, Inc.
205 Townsend Bldg.
Casper, Wyoming 82602
Attention: Paul D. Neuenschwander

TEXACO Inc.
Box 3109
Midland, Texas 79701
Attention: D. T. McCreary

Technical Committee
Proposed Eunice Monument South Unit
Lea County, New Mexico

Amerada Hess Corp.
P. O. Box 2040
Tulsa, Oklahoma 74102
Attention: J. F. Sharp

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001
Attention: R. D. Johnson

Apollo Oil Company
Box 1672
Hobbs, New Mexico 88240

ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702
Attention: J. L. Tweed

Earl L. Bruno
Box 5456
Midland, Texas 79702

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attention: R. A. Wright

Continental Oil Company
P. O. Box 460
Hobbs, New Mexico 88240
Attention: D. B. Bolt

Exxon Company, U.S.A.
P. O. Box 1600
Midland, Texas 79702
Attention: E. W. Purdy

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702
Attention: Joe E. King

Gulf Oil E&P Company
P. O. Drawer 1150
Midland, Texas 79702
Attention: D. T. Berlin

Koch Exploration Company
518 Vaughn Bldg.
Midland, Texas 79702

Me-Tex Supply Company
P. O. Box 2070
Hobbs, New Mexico 88240

Nichols & Brady Production Co.
Box 1972
Midland, Texas 79702
Attention: W. E. Brady

Shell Oil Company
P. O. Box 991
Houston, Texas 77001
Attn: Mid-Continent Division
Petroleum Engineer

Sun Production Company
P. O. Box 1861
Midland, Texas 79702
Attention: Charles Dickson

Sun Production Company
P. O. Box 2880
Dallas, Texas 25221
Attention: Herb Scidel

Two States Oil Company
P. O. Box 176
Eunice, New Mexico 88231

Bruce Wilbanks
Western United Life Bldg.
Midland, Texas 79702

Wiser Oil Company
Metro Building
Midland, Texas 79702

Minutes of Operators
Proposed Eunice Monument Waterflood
5-10-79

A meeting of the Working Interest Owners was held at 9:30 A.M. on Thursday May 10, 1979 in ARCO's 1st floor conference room in Midland, Texas. Representatives that attended the meeting are shown on the attached list.

Mr. J. L. Tweed (ARCO) opened the meeting by stating the purpose was to review a waterflood study ARCO had done on the Eunice Monument Field. As he indicated the proposed flood was in Lea County, New Mexico and centered in Township 21 S, R36E, as identified on the handouts.

Mr. Bob Malaise (ARCO) explained that a cursory study had been completed at the request of ARCO's management. This study had not been intended as a unitization study but much of the data could be ~~uni~~tilized in future unitization efforts. He continued by stating the area studied included the South end of the Eunice Monument Field, more specifically, it included 9,760 acres as shown by a cross-hatch outlined area on a handout. He indicated that ARCO realizes that there may be additional areas with waterflood possibilities that could be included as an addition to this proposed boundary. ARCO feels this would be a good waterflood candidate based on the high cumulative production of 86 MMSTBO, as of 1-1-79. In addition, cross sections indicated the pay continuity to be good within the area.

Mr. Malaise described the main zone as being the Grayburg which is at a depth of 3750'. The Grayburg is surrounded by the Queen on the top and the San Andres on the bottom. This zone is a fine crystalline, gray dolomite, interbedded with sand stringers. Mr. Malaise pointed out a generally southwesterly dip to the Grayburg as indicated on a structure map, drawn on the Grayburg top. It was shown on the structure map also a very pronounced dip in the west and southwest proportion of the unit area. Looking at a type log from the Conoco B-8 #5, ARCO estimated the gas-oil contact to be at 3740' (-150'ss) and a water-oil contact to be 3915' (-325'ss). At this point, Mr. Tweed interjected the comment that he felt the gas-oil contact was reliable based on production data and log data, but that the oil water contact may very in certain parts of the field. He further stated that this study used a gross oil column of 175', porosity of 7-8%, and averaged air permeability to be 10-15 MD. Additional fluid and rock properties were shown on a separate handout. Mr. Tweed stated again some of the parameters would be changed when a more detailed study was completed. In reviewing a north/south cross section through the middle of the unit, Mr. Malaise pointed out that to the North the Grayburg contains oil, the Queen gas, and the San Andres appears to be wet. Moving South the oil column is found in the upper Grayburg and lower Queen. In the extreme West area much of the production appears to have been produced from the Queen interval.

Mr. Bob Malaise explained that the development of the Eunice Monument GB started in 1929. Many of the wells were completed open hole with a large number being shot w/nitro. Original-oil-in-place within the proposed unit is 575 MMSTBO based on the parameters already listed. Decline curve analysis on a lease basis, indicated 5 MMSTBO remain to be recovered as of 1-1-79. Ultimate recovery will be between 16-17% of the original oil-in-place. Current GB production is approximately 1700 BOPD. Mr. Malaise stated that the secondary opportunities within the proposed area appear to be very attractive. A A stratified waterflood analysis indicate a secondary potential of 56 MMSTBO or approximately 55% of estimated primary production. He also concluded that the secondary reserves were conservative in nature based on three variables used in the analysis. They were the initial gas saturation at the start of the flood, Sgx (19%), the initial water saturation Swc (35%) and the residual oil saturation, Sor (35%).

In summary, Mr. Malaise stated within the studied area the following parameters were found:

1. Cumulative oil, as of 1-1-79, 87 MMSTO *
2. Acres - 9760
3. Remaining primary - 5.2 MMSTBO
4. Ultimate primary - 95 MMSTBO
5. Estimated secondary - 56 MMSTBO

At this time, Mr. Tweed suggested that a vote be taken concerning the formation of an Engineering Sub Committee for the purpose of studying the Eunice Monument area for possibilities of future waterflooding. All the companies that were represented voted yes concering this vote. In addition, it was pointed out that AMOCO was interested in waterflooding the area but due to a conflict in scheduling, were unable to attend the meeting. At this point, Mr. Tweed indicated that Gulf Oil would have the largest interest within the studied area. He felt that by the time the initial Engineering Sub Committee was formed, Gulf should indicate any desire to expedite and operate a future unit. Mr. R. L. Borgan (Gulf) acknowledged this request.

Mr. Buck (Shell) questioned the reason for the proposed unit outline. Mr. Tweed explained that the unit line had been chosen as much by convenience as anything, although, there were reservoir boundaries to the East and West that would define a logical unit area. To the East, the continuity and quality of pay deteriates. To the West, the structure dips are very deep and there would be a loss of both pay quality and oil column. Mr. Buck suggested that there may be some area both to the North and South that should be included within any future study done. After additional discussion on this matter, Mr. Tweed suggested to charge an Engineering Sub Committee with the responsibility of studying two additional sections North and 1 section South

* contains some Eumont oil

of the proposed area. It was indicated that they would include the Eumont oil zone in a future waterflood study.

Listed below are the agreed charges to be determined by a future Engineering Sub Committee:

1. Update and correct a base map
2. Define area of waterflood study (include 2 sections North and one south of proposed area)
3. Establish a parameter table to include the following:
    1. Current oil/gas rate (12 month period)
    2. Cumulative oil production
    3. Total acres
    4. Remaining primary
    5. Ultimate primary
    6. Secondary reserves (if recommended by Engineering Sub Committee)
4. Prepare water flood study and plan of operation.
5. Define vertical interval to be unitized.

Concerning a future voting procedure, after a lengthy discussion it was decided that the future unit expeditor will send out a letter ballot or will request a vote at the first Engineering Sub Committee meeting concerning the same. The Working Interest Owners requested that ARCO send out a letter with the minutes asking for company representatives for a future Working Interest Owners' Committee and Engineering Sub Committee. The general opinion concerning a voting procedure within the Engineering Sub Committee phase was that each active participant would have one vote. The expeditor would try to get as much agreement as possible during the Engineering Sub Committee phase but would not be required to meet a certain percentage. Also, it was decided any pre unitization expense would be handled by letter ballot once the unit expeditor was confirmed.

It was agreed that the next meeting will be of the Engineering Sub Committee which will be held in the next 4 to 5 weeks. Gulf will determine by this time if they want to expedite and operate. The Engineering Sub Committee will discuss what type of study will be required to meet their charges.

The Working Interest Owners will be notified by letter when the Engineering Sub Committee meeting will be held and will be informed as to the time and place of the meeting. The meeting concluded at 11:20 A.M.

ATTENDANCE LIST
PROPOSED EUNICE MONUMENT WATERFLOOD
WORKING INTEREST OWNERS
MEETING
MAY 10, 1979

Representative	Company	Address & Location
Wayne Wise	Amerada Hess	Southwest Region P. O. Box 840 Seminole, Texas
Jerry Tweed	ARCO Oil & Gas Co.	Midland, Texas
Bob Malaise	" " " "	P. O. Box 1610
Jeff Robinson	" " " "	
Don Farris	" " " "	Box 1710, Hobbs, NM 882
Hugh Ingram	Continental	P. O. Box 460
Jerry Hoover	"	Hobbs, New Mexico 88240
W. A. Goudeau	Chevron USA Inc.	P. O. Box 1660
Rick Wright	" " "	Midland, Texas 79702
O. V. Struckey	Getty Oil	P. O. Box 1231 Midland, Texas 79702
R. L. Borgan	Gulf Oil	Box 1150 Midland, Texas 79702
Steve Collins	Me-Tex Supply Co.	P. O. Box 1320 Hobbs, New Mexico 88240
W. H. Brady	Nichols & Brady	Box 1972 Midland, Texas 79702
W. E. Buck	Shell Oil	Box 991
A. J. Fore	Shell Oil	Houston, Texas 77001

MINUTES OF TECHNICAL COMMITTEE MEETING
PROPOSED EUNICE MONUMENT SOUTH UNIT
JULY 26, 1979

The first Technical Committee meeting of the Proposed Eunice Monument South Unit was held at 1:30 p.m. on Thursday, July 26, 1979. The meeting was held in Gulf's fourth floor conference room in Midland, Texas.

The chairman of the Technical Committee, Mr. D. T. Berlin opened the meeting by asking each member to introduce himself. Mr. Berlin reminded the Committee members that Gulf had become Unit Expeditor instead of Arco because of Gulf's larger interest in the proposed unit.

Mr. Berlin then discussed renaming the project the Proposed Eunice Monument South Unit to avoid confusion with Texaco's Eunice Monument Unit. There was no opposition, and the name change was agreed on by all those present.

Mr. Berlin discussed voting procedures within the Technical Committee. He pointed out that while voting in the Technical Committee would not be binding, it should reflect a consensus of opinion of the Technical Committee on the various aspects of their work and assist the Working Interest Owners in determining the viability of the unit. A motion was made, seconded and passed that each company represented at a meeting would have one vote.

The charges of the Technical Committee were reviewed and are as follows:

1. Generate a correct base map.
2. Delineate waterflood study area.
3. Form a parameter table which includes the following:
    a. Current oil and gas production (12 months)
    b. Cumulative oil production
    c. Total acres
    d. Remaining primary reserves
    e. Ultimate primary reserves

f. Secondary reserves

4. Develop a waterflood study and a plan of operation.

5. Define vertical interval to be unitized.

To accomplish these charges, Mr. Berlin indicated preference for the expeditor method. In this method, Gulf would be responsible for the basic work with assistance in data gathering from each operator in the study area. Committee meetings would be called periodically to review progress and interpretive matters such as remaining reserves and net pay calls.

Mr. J. A. Slater, Chief Secondary Recovery Engineer for Gulf, reviewed the progress to date on the base map. He indicated that the base map was not completed and that verification of the map would be needed by each operator at a future date. He also commented that legal descriptions of all leases would be requested at a later date from each of the operators in the study area. Mr. Slater passed out a map of the project area, a sample well data form and a study outline. The additions to Arco's proposed study area were marked on the maps. Mr. Slater stated that this area was a maximum and would likely be reduced. The proposed study area now contains approximately 14,600 acres.

Mr. Slater reviewed the well status map. Because of the large number of inactive well locations in the study area, he felt that usable wellbores may have to be added to the parameter list at a later date. Three maps were presented which have been contoured by a computer on a Cal Comp plotter. These included cumulative oil production, current oil production rate, and current water production rate. It was noted that several wells had produced over 750,000 barrels of cumulative oil and most of the wells had produced in excess of 250,000 cumulative barrels of oil. Mr. Slater commented that several

wells had been successfully plugged back for water shut-off indicating the water was either bottom water or zonal water encroachment and probably not an active water drive. Also, Texaco's Eunice Monument Unit had not encountered any water problems after eight years of injection.

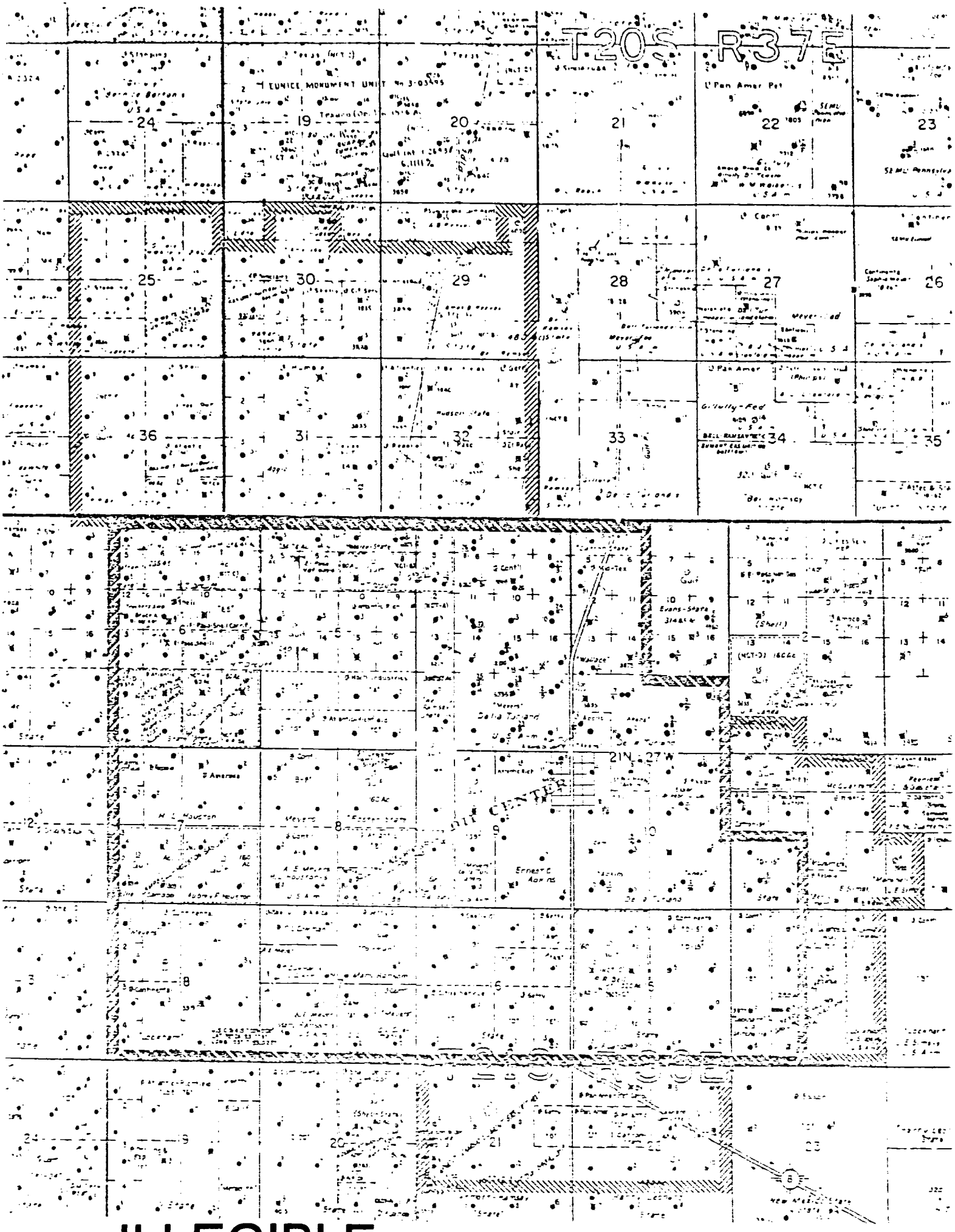
Mr. Slater asked that a listing of all well data such as logs, cores, and fluid samples be forwarded to Gulf as quickly as possible. Until this listing is received, it will be difficult to begin reservoir characterization.

After reviewing the proposed outline for the waterflood study, Mr. Slater asked Mr. C. L. Hedrick to comment on the amount and quality of geologic data available. Mr. Hedrick indicated the poor quality of the logs may prevent most of them from being of any value. He then reiterated the need for well data lists to aid in reservoir characterization. He also commented that he has not yet been able to define the vertical section which should be unitized.

Mr. Berlin then commented that a ballot authorizing sharing of pre-unitization expense had been mailed to the Working Interest Owners. Ballots have been received which represent about 71 per cent of the working interest ownership. All of the ballots received were voted in favor of sharing pre-unitization expenses. Mr. Berlin closed the meeting at 2:35 p.m. with the understanding that Gulf would call the next meeting by letter when appropriate.

Attendance List
Technical Committee Meeting 7-26-79
Proposed Eunice Monument South Unit

Name	Company	Title	Location
Dave Berlin	Gulf	Manager of Engineering	Midland
Jim Slater	"	Chief Sec. Rec. Engr.	"
Jay Spencer	"	Sr. Res. Engineer	"
Blake Jared	"	Summer Res. Engineer	"
Bill Thomas	Getty	Staff Engineer	"
Jerry Hoover	Conoco	Engineer	Hobbs
Alvie J. Fore	Shell	Engineer	Houston
E. W. Purdy	Exxon	Sr. Staff Engineer	Midland
Gene Clark	"	Sr. Geologist	Andrews
Rick Wright	Chevron	Pet. Engineer	Midland
Dick Borgan	Gulf	Manager-Jt. Operations	"
Hugh Ingram	Conoco	Conservation Coord.	Hobbs
Carroll Hedrick	Gulf	Sr. Geologist	Midland
Huan Pham	Arco	Engineer	"
Joe Martin	Sun	Res. Engineer	"



ILLEGIBLE

PROPOSED EUNICE MONUMENT SOUTH UNIT

Outline for Waterflood Feasibility Study

1. Gather data - logs, core analyses, production, pressure data.
2. Complete a geologic study - X sec's., structure maps, isopach maps.
3. Define the area and the vertical section to be unitized.
4. * Determine remaining primary oil by decline curve analysis.
5. Generate a table of parameters.
6. * Construct a map showing oil recovery in Bbls/acre-ft. This shows where the primary oil was produced.
7. Process core data - If necessary, run waterflood tests to determine S_{wi}, S_{ro}, and calculate K_{ro}/K_{rw} curves if core samples are available.
8. Proceed with waterflood pattern study - investigate possible patterns.
9. Determine recoverable oil by waterflooding.
10. * Determine water requirements and source - includes water compatability studies.
11. Project Waterflood performance - injection rates and water and oil production.
12. Design waterflood plant, injection water distribution system, and production facilities.
13. * Develop equipment needs and costs and cost of installation.
14. Define a produced water disposal system and provide a design with equipment and installation costs.
15. Determine drilling and well workover requirements and estimate costs.
16. Run project economics.
17. Propose a participation formula if project is feasible.

*

The study can be performed largely by Gulf Oil Exploration and Production Company. Technical Committee meetings will be called at various key points throughout the study to review work done up to that point. If assistance is required from other members of the Technical Committee, that help will be requested at the appropriate time.

*Time for Technical Committee meeting to review progress.

Gulf Oil Exploration and Production Company

J. M. Thacker
GENERAL MANAGER PRODUCTION
SOUTHWEST DISTRICT

P. O. Drawer 1150
Midland, TX 79702

February 18, 1982

Re: Proposed Eunice Monument
South Unit
Lea County, New Mexico

Working Interest Owners
Address list Attached

Gentlemen:

Attached are the minutes of the Technical Committee meeting which was held February 2, 1982, at the Gulf Building in Midland, Texas. Please review these minutes and provide the data which has been requested from each Operator. The following information will be required by Gulf on or before March 19, 1982, in preparation for the next Technical Committee Meeting.

1. Completed Well Data Sheets on all candidate unit wells.

2. Legal descriptions of all unit leases, as listed in the meeting minutes.

3. Copies of the C-115 Operator's Monthly Report for all unit leases for the months of November and December 1981.

4. Current Working Interest Ownership for each unit lease.

Enclosed you will also find copies of three handouts which were distributed at the meeting. These include a summary of oil and gas production for January through June 1981, a plot of monthly oil production since 1968 for the unit, and a comparison of various estimates of Original Oil In Place and recovery rates for the unit.

If you did not respond to our letter of January 11, 1982, providing names of individuals to be contacted regarding Technical Committee and Working Interest Owners' group activities, please do so at your earliest opportunity.

If you have questions concerning the Technical Committee meeting or the Unitization study, please contact Mr. Larry Millikan at (915) 685-4945, or Mr. Tom Wheeler at (915) 685-4938.

Yours very truly,

J. M. THACKER

TSW/dr
Attachments

cc: Mr. R. C. Anderson
Gulf Oil E&P Company
Hobbs, New Mexico

Mr. L. L. Fuller
Gulf Oil E&P Company
Midland, Texas

Amerada Hess
. O. Box 2040
Tulsa, Oklahoma 71402

Amoco Production Company (USA)
P. O. Box 3092
Houston, Texas 77001
Attn: Mr. H. M. Brown

Apollo Oil Company
P. O. Box 1672
Hobbs, New Mexico 88240
Attn: Mr. Alan Ralston

ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702
Attn: Mr. Huan Pham

Earl R. Bruno
P. O. Box 5456
Midland, Texas 79701

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attn: Mr. S. K. Schubarth

Cities Service Company
P. O. Box 1919
Midland, Texas 79702
Attn: Mr. E. F. Motter

Conoco, Inc.
P. O. Box 460
Hobbs, New Mexico 88240
Attn: Mr. David L. Wacker

Exxon Company, U.S.A.
P. O. Box 1600
Midland, Texas 79702
Attn: Joint Interest Manager

Bart Fields, Jr.
11935 Preston Road
Dallas, Texas 75230
Attn: Mr. Jerry Doughman

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702
Attn: Mr. J. R. Howard

Mr. Doyle Hartman
P. O. Box 10426
Midland, Texas 79702

W. A. & E. R. Hudson
P. O. Box 198
Artesia, New Mexico 88210

Koch Exploration Company
1110 Gibraltar Savings Center
Midland, Texas 79702

Me-Tex Companies
P. O. Box 2070
Hobbs, New Mexico 88240
Attn: Mr. Mark Veteto

Nichols & Brady Production Company
P. O. Box 1972
Midland, Texas 79702

James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

Shell Oil Company
P. O. Box 991
Houston, Texas 77001

Sun Production Company
P. O. Box 1861
Midland, Texas 79702
Attn: Mr. M. L. Schroeder

TEXACO Inc.
P. O. Box 728
Hobbs, New Mexico 88241-0728
Attn: District Engineer

TEXACO Inc.
P. O. Box 3109
Midland, Texas 79702-3109
Attn: Division Vice President

The Wiser Oil Company
P. O. Box 192
Sistersville, W. VA. 26175

Two States Oil Company
P. O. Box 176
Eunice, New Mexico 88231

Bruce Wilbanks
P. O. Box 763
Midland, Texas 79702

Minutes of Technical Committee Meeting
Proposed Eunice Monument South Unit
February 2, 1982

The Technical Committee meeting was held at 9:00am, February 2, 1982, at the Gulf Building, Midland, Texas. Representatives from 11 companies having working interests within the proposed unit were present. Total acreage ownership represented was approximately 85% of the unit.

Mr. D. T. Berlin, chairman of the Technical Committee, opened the meeting and reviewed the status of the unitization effort since the initial ARCO study of 1979. Mr. Berlin also briefly summarized the charges to the Technical Committee which are as follows:

1. Generate a base map for the proposed unit
2. Delineate a waterflood study area
3. Form a parameter table with the following information:

    a. Current oil and gas production
    b. Cumulative oil production
    c. Total Acres
    d. Remaining Primary Reserves
    e. Ultimate Primary Reserves
    f. Secondary Reserves

4. Develop a waterflood study and plan of operation
5. Define the vertical interval to be unitized

Mr. C. D. Stenberg, Gulf Staff Geologist, reviewed the general geology of the unit area, and specifically the characteristics of the Eumont and Eunice Monument pools. Mr. Stenberg discussed the cross sections of unit wells which were constructed using all available logs in the field. He noted that a significant number of wells do not have logs available, and many of the existing logs are old ES logs which are of limited analytical value.

Mr. Ray Hoffman, Project Geologist, discussed the results of his survey of production histories for proposed unit wells. He emphasized that many of the proposed unit wells have multiple completions and have accumulated production from Eunice Monument, Eumont and other zones. He noted that the Well Data Sheets provided by some operators did not include perforations, depths, or plug back data which are vital to Gulf's evaluation of well status within the field.

Mr. Hoffman presented Gulf's tentative nomination of the vertical interval to be unitized as including the interval from the base of the San Andres to approximately 90' above the top of the Grayburg zone. This upper limit is being proposed because of the numerous wells which have completion locations which include the upper Grayburg and lower Eumont zones, and the fact that the apparent oil column extends through the Grayburg up into the lower Eumont. The definition of the vertical interval will be a subject of discussion at the next Technical Committee meeting, when more analysis of the unit wells will be presented.

Mr. Tom Wheeler, Project Engineer, summarized Gulf's efforts to date in satisfying the charges to the Technical Committee, as outlined by Mr. Berlin. Mr. Wheeler stated that the base map has been digitized and can be modified to accept future changes in unit boundary, or the addition or deletion of wells. He also noted that the unit boundary has not been changed since the 1979 Technical Committee meetings, and includes all but 17 known Eunice Monument wells in the immediate vicinity which are not included in other units or proposed units. The next Technical Committee will be asked to review the boundary again to determine whether other acreage may be unitized. This review will be especially critical if the unitized interval is expanded to include the 90' portion of the lower Eumont oil zone.

The following discussion was presented concerning the draft Unitization Parameters.

1. Current Oil and Gas Production - A tabulation including January 1981 through June 1981 production for each Tract was presented to the Committee. Gulf will update the data through December 1981, which will be the cut-off date for unitization parameter data.

2. Cumulative Oil Production - Data for this parameter will also be accumulated through December 1981 for each Tract. The cumulative production through June 1981 was 109,943,000 STB from Unit leases.

3. Acreage - The acreage data being used in the draft parameter table is for comparison purposes only. The acreage values are based upon Operator status only, and will be adjusted to reflect acreage by Working Interest Owner as that information is provided by each operator.

4. Remaining Primary Reserves - This parameter was derived by a summation of the calculated remaining primary reserves of each individual tract. New Tract decline curves will be generated when the production data is available for each lease through the cut-off date.

5. Ultimate Primary Reserves - This calculation will be made when final decline curves are completed on each Tract.

6. Secondary Reserves - The estimate of Secondary Reserves cannot be accurately made because of the lack of core, log and reservoir data. Various estimates have been attempted and give a Secondary Recovery range of 9 to 12 percent of the Original Oil in Place, or an additional recovery of 50 MMSTB to 63 MMSTB of oil. Additional data is being gathered from analysis of a recent Eunice Monument core, however, most current estimates of Secondary Recovery are being based on a Rule-of-Thumb estimate of 50% of primary Ultimate.

Since their is no way to calculate secondary recovery by tract, the Technical Committee recommends that it be dropped as a Participation Parameter.

Another parameter which is being evaluated is the Useable well-count. This parameter will be finalized when Operators complete their review of the status of all candidate Unit wells.

Meeting attendees agreed that all parameters should be updated through December 1981 and that each possible parameter would be discussed at the next meeting. Gulf requested that the Operators provide the following information as soon as possible for presentation at that meeting.

1. Review all well data sheets for accuracy, and submit new sheets as required.

2. Provide Gulf with a legal description of all leases, including exact acreage, if that information was not previously provided. (Each operator was given a specific list of properties in question).

3. Provide Gulf with C-115 production reports for November and December, 1981, on all properties within the proposed Unit.

4. Provide accurate Working Interest Ownership information for each Tract in the unit.

Meeting attendees agreed to proceed with the Unitization effort and to hold the next meeting in approximately two months. Gulf will schedule the meeting and notify all Operators by letter.

EUNICE MONUMENT SOUTH UNIT

TECHNICAL COMMITTEE
(2-2-82)

NAME	COMPANY/POSITION	LOCATION
Dave Berlin	Gulf-Mgr of EOR Opns	Midland
Ray Clark	Gulf-Area Reservoir Eng.	Hobbs
Mike Brown	Amoco-Div. Resv. Engr	Houston
Steve White	Amoco-Sr. Petr. Engr	Houston
Albert J. Kunkel, Jr.	Getty-Engr	Midland
Mark Veteto	Me-Tex Engr. Conslt.	Hobbs
Steve Schubarth	Chevron/Petr. Engr.	Midland
Chuck Hageogeorge	Chevron/Div. Geo.	Midland
E. W. (Bill) Purdy	Exxon	Midland
Wm. P. Aycock	Doyle Hartman	Midland
Rebecca A. Egg	Cities Service/Res. Engr	Midland
Tom Huzzey	Cities Service/Reg. Res. Eng	Midland
Ken Mueller	Sun E&P Company	Midland
Nicholas E. Douglas	Conoco	Hobbs
C. D. Stenberg	Gulf	Midland
H. Q. Pham	ARCO	Midland
C. L. Diedrich	ARCO	Midland
W. A. Goudeau	Chevron U.S.A., Inc.	Midland
Tom Wheeler	Gulf Oil Corporation	Midland
R. E. Hoffman	Gulf Oil Corporation	Midland
L. R. Millikan	Gulf Oil Corporation	Midland

OPERATORS NOT PRESENT FOR TECHNICAL COMMITTEE MEETING
(2-2-82)

Amerada Hess

Apollo Oil & Gas Company

Bert Fields, Jr.

Hudson & Hudson

Nichols & Brady

James Rasmussen

Shell Oil Company

Koch Exploration Company

Texaco, Inc.

Bruce Wilbanks

Two States Oil Company

Wiser Oil Company

Gulf Oil Exploration and Production Company

J. M. Thacker
GENERAL MANAGER PRODUCTION
SOUTHWEST DISTRICT

P. O. Drawer 1150
Midland, TX. 79702

May 17, 1982

Re: Eunice Monument
South Unit
May 4, 1982, Technical
Committee Meeting Minutes

Technical Committee Members
Address List Attached

Gentlemen:

Attached are the minutes of the Technical Committee meeting which was held May 4, 1982, in Midland, Texas. The committee formally adopted a definition of the unitized interval, recommended final changes to the Unit boundary, and assigned decline rates to all active Unit properties. These final decline curves, reserve calculations, and additional data requests will be distributed for your review and comments as soon as possible.

The process of forming a parameter table will be significantly expedited if each Operator will begin a detailed review of all wellbores within the Unit to determine which can be contributed to the Unit. In the near future you will be asked to indicate which wellbores you plan to commit.

If you have questions concerning this Technical Committee meeting please contact Mr. Larry Millikan at (915) 685-4945, or Mr. Tom Wheeler at (915) 685-4938.

Yours very truly,

J. M. Thacker

TSW/ac
Attachments

cc: Mr. R. C. Anderson
Gulf Oil E&P Company
Hobbs, N.M. 88240

Mr. L. L. Fuller
Gulf Oil E&P Company
Midland, T.X. 79702

Amerada Hess
P. O. Box 840
Seminole, Texas 79360
Attn: Mr. George Garrett

Amerada Hess
P. O. Box 2040
Tulsa, Oklahoma 74102
Attn: Mr. H. C. Kidd

Amoco Production Company (USA)
P. O. Box 3092
Houston, Texas 77001
Attn: Mr. H. M. Brown

Apollo Oil Company
P. O. Box 1672
Hobbs, New Mexico 88240
Attn: Mr. Alan Ralston

ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702
Attn: Mr. Huan Pham

Earl R. Bruno
P. O. Box 5456
Midland, Texas 79701

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attn: Mr. S. K. Schubarth

Cities Service Company
P. O. Box 1919
Midland, Texas 79702
Attn: Mr. E. F. Motter

Conoco, Inc.
P. O. Box 460
Hobbs, New Mexico 88240
Attn: Mr. David L. Wacker

Exxon Company, U.S.A.
P. O. Box 1600
Midland, Texas 79702
Attn: Joint Interest Manager

Bert Fields, Jr.
11835 Preston Road
Dallas, Texas 75230
Attn: Mr. Jerry Doughman

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702
Attn: Mr. J. R. Howard

Ralph L. Gray
P. O. Box 198
Artesia, New Mexico 88210

Mr. Doyle Hartman
P. O. Box 10426
Midland, Texas 79702

W. A. & E. R. Hudson
1000 First National Building
Fort Worth, Texas 76102

Koch Exploration Company
1110 Gibraltar Savings Center
Midland, Texas 79702

Me-Tex Companies
P. O. Box 2070
Hobbs, New Mexico 88240
Attn: Mr. Mark Veteto

Nichols & Brady Production Company
P. O. Box 1972
Midland, Texas 79702

James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

Shell Oil Company
P. O. Box 991
Houston, Texas 77001

Sun Production Company
P. O. Box 1861
Midland, Texas 79702
Attn: Mr. M. L. Schroeder

TEXACO Inc.
P. O. Box 728
Hobbs, New Mexico 88241-0728
Attn: District Engineer

TEXACO Inc.
P. O. Box 3109
Midland, Texas 79702-3109
Attn: Division Vice President

The Wiser Oil Company
P. O. Box 192
Sistersville, W. VA. 26175
Attn: Mr. Charles P. LaRue

Two States Oil Company
P. O. Box 176
Eunice, New Mexico 88231

Bruce Wilbanks
P. O. Box 763
Midland, Texas 79702

Minutes of Technical Committee Meeting

Proposed Eunice Monument South Unit

May 4, 1982

The Technical Committee meeting began at 9:00 a.m., May 4, 1982, at the Midland Center, Midland, Texas. Representatives of 15 operators having working interests within the proposed Unit were present. The attendees represented 93% of the Unit acreage.

Mr. D. T. Berlin, chairman of the Technical Committee, opened the meeting by introducing Gulf personnel. Mr. Berlin announced the agenda items and briefly reviewed the Technical Committee voting procedure. He then turned the meeting over to Mr. Tom Wheeler to proceed with the Committee discussion.

Mr. Wheeler began by reviewing the status of the data which has been requested from Unit Operators. Approximately two thirds of the Unit Operators have not complied with all data requests, and some have not answered any Unit correspondence. Mr. Wheeler asked that the Information Request summary, Attachment 1, be reviewed by all Operators. A complete parameter table cannot be constructed until all Operators have provided correct information regarding the tract legal descriptions and Working Interest divisions.

Mr. Wheeler introduced the three agenda items for the day as follows:

1. Definition of the vertical limits of the unitized interval
2. Finalization of the Unit boundary
3. Committee consensus of the Tract production decline curves

He reminded the participants that the goal of the Committee was to provide recommendations to the Working Interest Owners on these three topics.

During the discussion of the vertical interval to be unitized, Mr. Wheeler described the five alternatives which have been investigated by Gulf. The bottom of the interval must be the base of the San Andres formations to include the area's most prolific water production zone, however, the five alternatives for the top of the interval are as follows:

1. Top of the Grayburg Formation
2. Top of the Penrose Formation
3. An intermediate marker between the upper Penrose sand and lower Penrose carbonate section
4. A subsea datum
5. A combination of 1 and 4 (above)

Each alternative has advantages and disadvantages, however, after an extensive analysis of the cross sections from the Unit, Gulf engineers and geologists had concluded that the following vertical limit definition should be proposed to the Working Interest Owners: "The Unitized Interval shall include the formations from a lower limit defined by the base of the San Andres formation, to an upper limit defined by the top of the Grayburg formation or a -100 foot subsea datum, whichever is higher."

The significant advantages of this definition include the following:

1. Includes all known Eumont Oil and Eunice Monument Oil production in the Unit area
2. Excludes most gas well completions in the area
3. Minimizes the number of workovers required to prevent waterflooding non-unitized formations
4. Exposes the total oil productive interval in the Unit area to Waterflood operations

When no other alternatives were presented by Committee members for consideration, the Committee unanimously accepted the above definition of the Unit vertical limits.

The second discussion topic, final boundary selection, involved review of all properties adjacent to the current boundary to determine whether additional acreage should be included in the Unit. After discussion the Committee voted to include three tracts which have current or past Eunice Monument oil production. The three tracts are outlined on Attachment 2, and are identified below.

1. Tract 114 - 80 acres of Amoco "State 'C' Tract 11" Lease located in S/2 SE/4 Section 2, Township 21 South, Range 36 East, Lea County, New Mexico.
2. Tract 115 - Amoco "McQuatters" lease covering N/2 NE/4 Section 11, Township 21 South, Range 36 East, Lea County, New Mexico.
3. Tract 116 - 40 acres of Conoco "Lockhart B" Lease located in NW/4 NW/4 Section 13, Township 21 South, Range 36 East, Lea County, New Mexico.

Mr. Huan Pham presented ARCO's recommendation that the Committee consider adding three tracts as listed below:

1. Arco "Ida White" Lease - 80 acres in N/2 SE/4 Section 35, Township 20 South, Range 36 East.
2. Arco "Endure State" Lease - 160 acres in SE/4 Section 12 Township 21 South, Range 35 East.
3. Arco "State 176" Lease - 280 acres composed of N/2 NW/4, SE/4 NW/4 and W/2 E/2 Section 19, Township 21 South, Range 36 East.

The Technical Committee voted against the addition of the Arco tracts.

The Committee heard a request from Ms. Pam Morphew, representing the interests of Doyle Hartman and James Rasmussen, to delete tracts 70 and 113 from the Unit. These adjacent 40 acre tracts are located in the eastern portion of the Unit. Tract 70 is the Hartman operated Rasmussen State lease which has a high GOR Eunice Monument oil well, the #1 Rasmussen State, and an abandoned Eunice Monument well, the #1 Rasmussen State 'G'. Tract 113 has the abandoned #2 Rasmussen State 'G' Eunice Monument oil well. After discussion the Committee voted to recommend to the Working Interest Owners that the tracts not be excluded from the Unit at this time.

The last agenda item was the finalization of production decline curves. All curves were individually reviewed, declined and approved by group consensus. Reserve calculations will be based on these decline curves.

The meeting was adjourned following completion of the decline curve review.

EUNICE MONUMENT SOUTH UNIT
TECHNICAL COMMITTEE MEETING
MAY 4, 1982

Representative	Company	Location
P. E. Nelson	Amerada Hess	Seminole, TX.
Jeff Herman	Amerada Hess	Tulsa, OK.
Bill Boggess	Amerada Hess	Tulsa, OK.
Bob Anthony	Amerada Hess	Seminole, TX.
Tracy Tenison	Amerada Hess	Monument, NM.
Preston Julian, Jr.	Amoco	Houston, TX.
Steve R. White	Amoco	Houston, TX.
Huan Q. Pham	Arco	Midland, TX.
Cynthia L. Diedrich	Arco	Midland, TX.
Ron White	Arco	Midland, TX.
Stephen Schubarth	Chevron	Midland, TX.
Charles G. Hagegeorge	Chevron	Midland, TX.
Rebecca A. Egg	Cities Service	Midland, TX.
Ron McWilliams	Conoco	Hobbs, NM.
Nicholas E. Douglas	Conoco	Hobbs, NM.
E. W. Purdy	Exxon	Midland, TX.
Albert J. Kunkel, Jr.	Getty	Midland, TX.
Dave Berlin	Gulf	Midland, TX.
Larry Millikan	Gulf	Midland, TX.
C. D. Stenberg	Gulf	Midland, TX.
Ray E. Hoffman	Gulf	Midland, TX.
Tom Wheeler	Gulf	Midland, TX.
W. A. Brunkhorst	Gulf	Midland, TX.
R. M. Ellis	Gulf	Midland, TX.
Jeff Ortwein	Gulf	Hobbs, NM.
Clay Carson	Gulf	Hobbs, NM.
Pam Morphew	Doyle Hartman	Midland, TX.
Mark Veteto	Me-Tex	Hobbs, NM.
Dale Nichols	Nichols & Brady	Midland, TX.
Will Brady	Nichols & Brady	Midland, TX.
Pam Morphew	Rasmussen	Midland, TX.
Dave Mut	Shell	Houston, TX.
Kenneth Mueller	Sun	Midland, TX.
Brad Browning	Sun	Midland, TX.
James Schneider	Sun	Midland, TX.

Gulf Oil Exploration and Production Company

J. M. Thacker
GENERAL MANAGER PRODUCTION
SOUTHWEST DISTRICT

March 4, 1983

P. O. Drawer 1150
Midland, TX 79702

Technical Committee Members
Address List Attached

Gentlemen:

Re: Eunice Monument South Unit
Technical Committee Meeting

Attached are minutes of the Technical Committee meeting which was held February 25, 1983, in Midland, Texas. The committee completed the review of the parameter table, and heard a presentation of the preliminary facility design and cost estimate for the Unit. Committee members reviewed all lease decline curves during the meeting as a result of a vote to update the Unit data base from the previous cutoff of January 1, 1982, to a new data cutoff of October 1, 1982.

The work and recommendations of the Technical Committee are currently being summarized for presentation in the Engineering Report to Working Interest Owners.

If you have questions concerning this Technical Committee meeting, please contact Mr. Tom Wheeler at (915) 685-4938.

Yours very truly,

D. T. Berlin

D. T. BERLIN
Chairman, Technical Committee

TSW:ac

Attachment

cc: R. C. Anderson
Gulf Oil Company
Hobbs, NM. 88240

F. H. Martin
Gulf Oil Company
Midland, TX. 79702

EUNICE MONUMENT SOUTH UNIT
TECHNICAL COMMITTEE MEETING
FEBRUARY 25, 1983

Representative	Company	Location
Bob Anthony	Amerada Hess	Seminole, TX.
Bill Baum	Amerada Hess	Seminole, TX.
Jeff Herman	Amerada Hess	Tulsa, OK.
Greg Pankratz	ARCO	Midland, TX.
Will Brady	Brady Production	Midland, TX.
Stephen Schubarth	Chevron	Midland, TX.
Rebecca Egg	Cities Service	Midland, TX.
Carey Darr	Conoco	Hobbs, NM.
N. E. Douglas	Conoco	Hobbs, NM.
Glenn Luce	Exxon	Midland, TX.
Albert J. Kunkel, Jr.	Getty	Midland, TX.
Dave Berlin	Gulf	Midland, TX.
Larry Millikan	Gulf	Midland, TX.
Tom Wheeler	Gulf	Midland, TX.
Ray E. Hoffman	Gulf	Midland, TX.
Steve Burk	Gulf	Midland, TX.
Stanton Chapman, Jr.	Gulf	Hobbs, NM.
Sheila McLean	Shell	Houston, TX.
Brad Browning	Sun	Midland, TX
James Schneider	Sun	Midland, TX.
W. R. Skalenda	Texaco	Hobbs, NM.

PROP. ED EUNICE MONUMENT SOUTH . IT
LEA COUNTY, NEW MEXICO

Amerada Hess
P. O. Box 840
Seminole, Texas 79360
Attn: Mr. George Garrett

Amerada Hess
P. O. Box 2040
Tulsa, Oklahoma 74102
Attn: Mr. H. C. Kidd

Amoco Production Company (USA)
P. O. Box 3092
Houston, Texas 77001
Attn: Mr. H. M. Brown

Apollo Oil Company
P. O. Box 1672
Hobbs, New Mexico 88240
Attn: Mr. Alan Ralston

ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702
Attn: Mr. Huan Pham

Earl R. Bruno
P. O. Box 5456
Midland, Texas 79701

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attn: Mr. S. K. Schubarth

Cities Service Company
P. O. Box 1919
Midland, Texas 79702
Attn: Mr. E. F. Motter

Conoco, Inc.
P. O. Box 460
Hobbs, New Mexico 88240
Attn: Mr. David L. Wacker

Exxon Company, U.S.A.
P. O. Box 1600
Midland, Texas 79702
Attn: Joint Interest Manager

Bert Fields, Jr.
11835 Preston Road
Dallas, Texas 75230
Attn: Mr. Jerry Dougliman

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702
Attn: Mr. J. R. Howard

Ralph L. Gray
P. O. Box 198
Artesia, New Mexico 88210

Mr. Doyle Hartman
P. O. Box 10426
Midland, Texas 79702

W. A. & E. R. Hudson
1000 First National Building
Fort Worth, Texas 76102

Koch Exploration Company
1110 Gibraltar Savings Center
Midland, Texas 79702

Me-Tex Companies
P. O. Box 2070
Hobbs, New Mexico 88240
Attn: Mr. Mark Veteto

Nichols & Brady Production Company
P. O. Box 1972
Midland, Texas 79702

James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

Shell Oil Company
P. O. Box 991
Houston, Texas 77001

Sun Production Company
P. O. Box 1861
Midland, Texas 79702
Attn: Mr. M. L. Schroeder

TEXACO Inc.
P. O. Box 728
Hobbs, New Mexico 88241-0728
Attn: District Engineer

TEXACO Inc.
P. O. Box 3109
Midland, Texas 79702-3109
Attn: Division Vice President

Two States Oil Company
P. O. Box 176
Eunice, New Mexico 88231

Two States Oil Company
Suite 1401
Mercantile Commerce Building
Dallas, Texas 75201
Attn: Mr. Walter Crane

Bruce Wilbanks
P. O. Box 763
Midland, Texas 79702

The Wiser Oil Company
P. O. Box 192
Sistersville, W. VA. 26175
Attn: Mr. Charles P. LaRue

MINUTES OF TECHNICAL COMMITTEE MEETING
PROPOSED EUNICE MONUMENT SOUTH UNIT
FEBRUARY 25, 1983

The Technical Committee meeting began at 9:00 a.m., February 25, 1983. Representatives of twelve operators having working interests within the proposed unit were present. The attendees represented approximately 90% of the unit acreage.

Mr. Dave Berlin, chairman of the Technical Committee, opened the meeting by introducing the agenda for the day. After his welcoming remarks he introduced Mr. Tom Wheeler to lead the Committee discussion.

Mr. Wheeler reviewed three events which had occurred since the previous Technical Committee Meeting. Ballot Number 1 was sent to Committee members on September 22, 1982, requesting members to decide whether "Useable Wellbores" should be proposed as a parameter for a final parameter table. Respondees to the ballot voted to eliminate the possible parameter (Attachment 4).

Proposals to reevaluate the final decline curves of Tracts 34, 55, and 68 were presented in Ballot Number 2 on October 25, 1982. Respondees to this ballot accepted changes for Tracts 34 and 55, but rejected the proposed change for Tract 68 (Attachment 5).

Due to a division of ownership in the Fields Turner State Lease, Tract 24, an additional tract has been added. The 40 acre proration unit located in the NW/4 NE/4 of Section 32, T20S, R37E has been designated Tract 118 on the index and map.

Mr. Stan Chapman, presented an overview of a preliminary facility design for the proposed Unit. The preliminary design and cost estimate were prepared as a basis for the economic analysis which will be presented in the report to Working Interest Owners. Mr. Chapman stated that the design consisted of a single central battery with 12 satellite batteries located throughout the field, each serving from 8 to 20 producing wells. A single injection plant is located at the central battery. The water supply system will consist of treatment and filtration systems at the central battery, and nine water supply wells located in the central area of the proposed unit.

The estimated cost summary for the Unit facilities is shown in Attachment 6, by major cost category. Total cost is estimated to be approximately $62,510,000. Among the assumptions used to develop the cost estimate were the following criteria:

1. The Unit will be developed on an 80 acre 5-spot waterflood pattern, with agreements allowing injection in Unit boundary wells within 3 years.

2. All equipment will be Class A.

3. No dual wells will be allowed in the Unit.

4. Plugged and abandoned wells will not be re-entered.

5. Estimates of remedial work are based on information from well data sheets and records of the New Mexico Oil Conservation Commission.

Preliminary minimum and optimum secondary recovery predictions for the Unit were presented by Mr. Wheeler. He emphasized that the lack of reservoir data has made it impossible to use most common prediction methods. The minimum recovery case was prepared using an empirical prediction method developed by Bush & Helander, based on average data for a number of Oklahoma waterfloods. Using a form of this method produced a calculated secondary to primary recovery ratio of approximately 18%, which is obviously a pessimistic ratio for a typical Grayburg/San Andres flood.

The optimum recovery case was constructed using average data from a number of Texas and New Mexico carbonate floods in which Gulf is an operator or partner. This data included values for average response times, peak recovery times and rates, decline rates, etc. The average data was combined with a secondary to primary recovery ratio of .5 to construct the recovery estimate in Attachment 7.

These two recovery estimates were combined with the previous cost estimate to generate the economic summary shown in Attachment 9. The costs were expended in the early years of the project as shown in Attachment 8. By using the expenditure schedule and recovery prediction, each owner may perform an economic analysis consistent with his respective guidelines to estimate the Unit economics.

The only economic parameter on Attachment 9, which does not appear attractive for either the minimum or optimum recovery cases is the payout. This payout is based solely on the recovery cases and the expenditure schedule, and does not take into account the very large remedial program which should increase recovery in the early years even before the flood begins to respond to injection. We believe that the actual payout will be less than this calculated payout and we do not believe that this factor, standing alone, should be used to judge the merits of the project.

The parameter table, Attachment 10, was briefly discussed in the committee and no changes were suggested to the format. Thirty-three Working Interest Owners have been identified and are shown on the table. Ownership of properties operated by Apollo, Hartman, Rasmussen and Wilbanks have not been provided, and in each case the operator will continue to be carried as 100% owner and royalty owner. In addition to these Working Interest Owners, approximately 325 royalty owners have been identified. Companies which have not yet provided royalty ownership for inclusion in the Unitization program include Apollo, Bruno, Conoco, Getty, Hartman, Rasmussen, Two States and Wilbanks. These companies were asked to provide the royalty ownership data at their earliest opportunity.

Gulf presented and briefly discussed three recommendations which the company intends to present to the Working Interest Owners. The three recommendations are as follows:

1. Recommend that the Working Interest Owners' Committee outline a method of crediting or penalizing owners during the initial inventory adjustment to resolve the inequities which may arise from some owners withholding wellbores from the Unit.

2. Recommend that in view of the operational problems caused by maintaining dual wells in the Eumont gas zone, and other considerations, the owners not allow dual completions in Unit wellbores.

3. Recommend that a "demand well clause" be included in the Unit Operating Agreement to enable the operator to expedite development of the Unit in an orderly fashion.

The Committee next heard a suggestion by Exxon that the old data cutoff date of January 1, 1982, be updated and that all decline curves be reviewed by the Committee. After a lengthy discussion, a formal poll was taken which resulted in a vote of 7 to 5, affirming that the data base should be updated and that decline curves should be reviewed. A second vote was called which resulted in a 7 to 5 decision affirming that the new data cutoff would be set at October 1, 1982, and that the data used in the "Current Oil Production" parameter of the table would consist of January 1 through September 30, 1982 production.

Following this vote the Committee was adjourned to review the updated decline curves. Only eighteen of eighty curves were changed by the Committee. These changes are summarized in Attachment 11.

Gulf Oil Exploration and Production Company

J. M. Thacker
GENERAL MANAGER PRODUCTION
SOUTHWEST DISTRICT

June 10, 1983

P. O. Drawer 1150
Midland, TX 79702

Working Interest Owners
Address List Attached

Gentlemen:

Re: Working Interest Owners' Meeting
Proposed Eunice Monument South Unit
Lea County, New Mexico

Attached are minutes of the Working Interest Owners' Meeting which was held on June 1, 1983. Gulf will be forwarding ballots in the near future to all Working Interest Owners to cover the four issues which were considered during the meeting, and are discussed in the minutes.

Yours very truly,

J. M. THACKER

TSW:ac

Attachment

cc: R. C. Anderson
P. O. Box 670
Hobbs, New Mexico 88240

D. L. Joiner
P. O. Box 1150
Midland, Texas 79702

F. H. Martin
P. O. Box 1150
Midland, Texas 79702

PROPOSED EUNICE MONUMENT SOUTH UNIT
MINUTES OF WORKING INTEREST OWNERS' MEETING

JUNE 1, 1983

The Working Interest Owners' Committee convened with members from 14 companies present, representing approximately 96% of the Working Interest in the proposed unit. Mr. Frank Martin, Gulf, opened the meeting by reviewing the history of the proposed unit area since discovery in 1929. He also outlined the Unitization effort since the original meeting called by Arco in 1979.

The first discussion topic involved selection of an informal voting procedure for the committee. Mr. Martin proposed that the cumulative oil recovery percentage, as presented in the proposed parameter table, be used as a basis of determining the voting percentage for each owner. The actual procedure selected by the owners is discussed in the voting recap section of these minutes.

Mr. Martin introduced Mr. Dave Berlin who presented the Technical Committee recommendation for establishing a Unit Boundary. Mr. Berlin reviewed the Technical Committee work which has expanded the unit area from the original Arco proposal of 9,700 acres to the current area of 14,280 acres. Mr. Bruce Landis, Amoco, requested that the Owners add an additional 640 acres to the unit. This new acreage consists of the Amoco Gilluly 'A' Lease in Section 24-20S-36E, Conoco Reed 'B' Lease acreage in Section 24-20S-36E, and Conoco Reed 'B' Lease acreage in the E/2, NE/4, Section 23-20S-36E (See Attachment 1). Mr. Landis stated that Amoco preferred that the acreage be removed from the Amerada Hess Monument Unit study area and placed in the Eunice Monument South Unit. Mr. Landis explained that the additional 640 acres would benefit the EMSU because the secondary recovery potential is higher than the average EMSU tract. He further stated that the original boundary between the Eunice pool and the Monument pool ran along the northern edge of sections 23 and 24 and this was a logical boundary for the Northern portion of the EMSU. Amoco also noted that their property in Section 24 is part of the same Federal Gilluly Lease as EMSU Tract 3 and that the Mineral Management Service would favor including the entire lease in the proposed unit. After some discussion the Committee agreed to formally vote upon Amoco's request after the remainder of the presentation was completed. The results of the ballot are discussed in the voting recap section which follows.

Mr. Berlin presented the requests by Mr. Doyle Hartman and Mr. James Rasmussen to have their property, Tracts 70 and 113 respectively, removed from the Unit. Mr. Berlin pointed out that the wells in and around the leases in question have good production cumulative figures and, therefore, should have good secondary recovery potential. Unless the leases are unitized the injection pattern in this portion of the field will have to be significantly altered and a significant portion of the unit's secondary recovery potential will be lost. A vote on this request by Hartman and Rasmussen was tabled until the afternoon session and is discussed in the voting recap section of these minutes.

Mr. Berlin introduced Mr. Tom Wheeler, who presented a summary of the Technical Committee efforts to define a vertical interval for the proposed unit using the following guidelines: (1) unitize all Eunice Monument production if possible, (2) include the entire continuous oil column within the unit area, (3) define an interval which will allow a reasonable waterflood possibility without affecting nonunitized formations. Mr. Wheeler discussed at length the alternatives which were evaluated as the top of the interval and pointed out the advantages and disadvantages of each choice. Mr. Wheeler reviewed the process which was used to attempt to define the gas-oil contact for the unit area. He then presented the Technical Committee recommendation for defining the vertical interval as follows:

> "The unitized interval shall include the formations from a lower limit defined by the base of the San Andres formation, to an upper limit defined by the top of the Grayburg formation or a -100 foot subsea datum, whichever is higher."

Some owners expressed concern over the use of a subsea datum as part of the interval definition since this is not a common practice. Mr. Wheeler pointed out that Technical Committee members were aware of this problem, however, the Technical Committee was of the opinion that a two part definition was necessary to enable flooding of the entire oil productive zone within the unit area.

Mr. Landis stated that Amoco was concerned that there was a risk of oil and/or water being forced up into the gas formation above the Grayburg. This would cause a loss of revenue to the unit because of the lost oil, and a legal liability if gas wells were damaged as a result of waterflood operations.

Gulf representatives pointed out that while there is not sufficient quantitative log and core information to conclusively prove that there is no vertical communication between the oil and gas pools, there is no evidence to show that the pools are in communication. In fact there is significant information from production tests in wells to show that the interval from sea level to approximately -100 feet subsea is not productive of either oil or gas. From this information and the observation that gas productive intervals and oil productive intervals throughout the unit area are generally well segregated by this nonproductive zone, Gulf believes that the use of good operating procedures in monitoring and confining injection water, and keeping producing wells pumped off will reduce the risk of driving oil and/or water up into the overlying gas zone.

At this point Amoco asked to present their alternate definition for Committee vote, but agreed to table the vote until the presentation was concluded.

Mr. Wheeler continued the presentation by reviewing the major points of the preliminary design and cost estimate as outlined in the Technical Committee Report. The assumptions which were used as a basis for the preliminary design and cost estimate are presented on page 28 of the Report.

Mr. Wheeler presented the project secondary recovery estimates for the unit as discussed in the Technical Report and illustrated in Figure 96 of the Report.

Steve Schubarth of Chevron noted that the forecasted recovery did not show a loss of production which would result in the early life of the project when active wells are converted to injection wells. He also stated that in his judgment the peak response of the Optimum Recovery Case was excessively high based upon a comparison of the peak primary production rate. Mr. Wheeler acknowledged that the loss of production in early years due to conversions was not shown, but pointed out that the expected results of the extensive remedial and drilling program planned for that same time period would offset this drop in production to some extent, and that neither effect could be calculated because of the phasing of the work schedules. Mr. Berlin pointed out that a direct comparison between peak primary and secondary production levels was not valid in every case because of the number of floods which respond with oil and/or total fluid volumes in secondary phase peaks in excess of their primary peaks because of higher reservoir pressures. Historical production volumes have also been significantly reduced by proration practices. Amoco and other operators also expressed agreement with the Technical Committee's recommended projection, stating that it closely matched models for other Grayburg floods.

At this point Mr. Wheeler presented the economic summaries for the minimum and optimum recovery cases. This summary is presented in the Technical Report, and as Attachment 2 of these minutes.

Mr. Berlin presented the wellbore status summary for the Unit as shown in Attachment 3. For this presentation, every 40-acre proration unit was examined to determine the status of the wellbores, to the extent that information was available from the Operator. The categories shown on the summary chart are briefly described as follows:

1. Active Oil Producers - an active Eumont or Eunice Monument oil Producer (Total 219).

2. Duals - wells actively producing Eumont gas and either Eumont or Eunice Monument oil (Total 5).

3. T/A Wells - wells which have no current production, and may be either T/A oil wells or wells which were originally oil producers then plugged back to the gas zone and later T/A'd (Total 46).

4. P/A Wells - wells which have been plugged in accordance with New Mexico requirements (Total 28).

5. P/B to Gas - wells which have recorded oil production in the Eumont or Eunice Monument but have been plugged back and are currently producing Eumont Gas (Total 51).

6. Undrilled or Unproduced - 40-acre locations which have never been drilled, have had dry holes drilled, or have wellbores through the oil zone which have never recorded oil production from the Eumont or Eunice Monument (Total 13).

The wellbore count under each category is assigned to individual owners based upon their Working Interest for each tract in the Unit.

Mr. Berlin proposed a 'Useable Wellbore' definition to be used in evaluating all wellbores which operators propose to contribute to the unit. This definition is shown in Attachment 4 along with two other conditions which are designed to assure that wellbores claimed for credit are in serviceable condition. Gulf, as operator of the future unit, believes that an inventory credit should be assigned to wellbores which are contributed to the unit, in order to induce all operators to reenter the T/A wellbores and P/A wellbores, and to recomplete low reserve gas wells to provide them for Unit operation. Gulf believes that the two items listed as "Other Considerations" in Attachment 4 will be necessary to insure that wellbores provided to the unit for credit are actually useable, and that the unit does not bear unnecessary risk and expense by accepting the wellbores without warranty provisions in the unit agreement.

A number of owners expressed reservation about the length of the warranty period proposed in the second provision. These owners stated that the two year warranty was excessive since the wellbore was not being operated under their direct control. Gulf responded that the time period was selected based upon the realistic view that it would take at least two years, and probably longer, to have an opportunity to examine each wellbore. Mr. Thornton, Sun, stated that he believed that no warranty should be imposed, and that the Unit should bear the risk associated with accepting all wellbores in "as is" condition.

The discussion then turned to the subject of wellbore value. Mr. Berlin reviewed Gulf's efforts to determine an appropriate value for contributed wellbores. Given the range of possible values from zero to $250,000 (approximate cost to drill and complete a Eunice Monument well) the problem is to assign an equitable value which will induce owners to provide as many wellbores as possible to the unit, but will not cause the unit to bear an extremely high initial remedial or drilling cost. In evaluating the possible value of an old wellbore to the unit, Gulf showed that a number of physical problems are likely to arise with these old wellbores during the life of the waterflood which will cause additional costs that would not normally be expected from a new wellbore. Gulf believes that these problems, including casing repairs, resqueezing old zones, repairing poor cement jobs, lining old open hole completions, etc., reduce the utilitarian value of the old wellbores to a level which can be approximated by a $100,000 value.

During the ensuing discussion owners appeared divided as to whether the value should be higher or lower than the proposed $100,000 value. In view of the fact that the wellbore value determination will rely on the definition of a "Useable Wellbore," and that this definition will be influenced by the selection of the vertical interval, further discussion was tabled pending the selection of a unitized interval.

VOTING RECAP

Procedure:

The voting procedure used by the committee was based upon the percentage of cumulative oil production assigned to each owner. Pass/fail criteria was selected as the following:

1. To pass a question, 75% of the total unit interest must vote in favor of the question, except

2. a negative vote by Gulf must be joined by at least two other owners having a combined ownership of 5% or greater to fail a question.

The intent of the procedure was to avoid giving Gulf sole veto power over any proposition. While this was the intent, it also allows for an equally unfair situation which was not obvious until after the meeting. Under the above criteria any owner or group of owners might propose a question which could be passed without any clear majority of ownership approving the question due to abstentions.

In view of the above problem Gulf will not agree to these criteria in the future unless they are modified to provide a majority value of at least 65% as the minimum votes required to pass a question in the event of a no vote by Gulf unsupported by at least two other opertors having a combined percentage of at least 5%.

Results of Voting:

The first proposal submitted for formal vote was Amoco's request to include additional acreage in the proposed unit. The proposed acreage is outlined on Attachment 1. Before the vote owners agreed that if the proposal failed to pass, the matter would be referred to the Technical Committee if that committee was reconvened. The result of the ballot was that 39.5 percent favored inclusion of the additional acreage (erroneously reported as 52% in the meeting), 35.6 opposed inclusion, and 20.4 abstained; therefore, the proposal was defeated. The vote by owner is detailed in Attachment 5.

The second proposal involved the request by Doyle Hartman and James Rasmussen to be excluded from the unit. By voice vote, owners unanimously agreed to retain the two properties in the unit at this time.

The third formal vote was called regarding Amoco's proposed alternate definition for "Vertical Interval" which read as follows:

> "UNITIZED FORMATION means that subsurface portions of the unit area commonly known as the Queen, Penrose, Grayburg and San Andres Formation, or their correlative equivalents with those continuous stratigraphic intervals occurring between the base of the Seven Rivers Formation and the top of the Glorietta Formation, and which are the same formations the tops of which were penetrated in the Continental Oil Company (USA) Myer "B" No. 4, Well No. 23, located approximately 660' FSL and 1980' FEL of Section 4, T-21-S, R-36-E, Lea County, New Mexico, and which are indicated on the Welex Company well survey, and labelled as the Acoustic Velocity Log, dated October 30, 1962, for the particular well with the formations (and tops) as Queen (3370'), Penrose (3494'), Grayburg (3657'), San Andres (4152'), and the base of the San Andres and the top of the Glorietta at 5220', all depths of which were measured from the Kelly Bushing of the drilling rig, which indicated a surface elevation of 3595' above sea level."

Amoco restated that the purpose of redefining the unitized interval to include a larger portion of the overlying Eumont Gas zone was to preclude future liability which would arise if oil and water damaged gas wells in the area. Other owners pointed out that there was no known basis for unitizing a pool to prevent future liability. Gulf pointed out that the upper limit of the Amoco proposed interval did not include the entire gas zone and, in fact, would fall in the completion interval of several known wellbores and that there would be no known way of segregating past or future production from the unitized and nonunitized portion of the completion interval in these wellbores. Gulf further noted that this new definition would cause new owners, who own rights to gas only, to be included in the unit study. These companies have no oil production and will not benefit from secondary operations; therefore, they have no immediate incentives to join a unit.

Following a lengthy discussion Amoco agreed that the upper limit was not appropriate and proposed amending their definition to include all formations from the top of the Eumont Gas pool (top of the Yates formation) to the base of the Eunice Monument pool (base of the San Andres formation).

The result of the ballot was that 21.7% favored adoption of the Amoco proposal, 52.3% opposed adoption, and 21.4% abstained; therefore, the proposal failed. Results of the ballot are shown in Attachment 6.

The final ballot involved the Technical Committee recommendation for definition of the vertical interval. The result of the ballot was that 64.2% favored adoption of the Technical Committee definition, 14.3% opposed, and 17% abstained; therefore, the proposed definition was not adopted. Results of this ballot are shown in Attachment 7.

Future Action

The result of the ballots was that the unit was left without a definition for the unitized interval. To help resolve the problem the owners asked Gulf to reballot all Working Interest Owners on the two proposed definitions, and to approach the Oil Conservation Division of New Mexico to attempt to determine if either or both suggestions might be feasible to that agency. Gulf agreed to both requests.

Gulf was also asked to resubmit the Amoco proposal to add additional acreage to the unit to all owners for reballot. Gulf also agreed to this request.

Gulf also agreed to begin attempting to identify all operators in the Eumont Gas pool within the unit boundary. Gulf will prepare requests for information to be submitted to all known operators as soon as possible.

No further topics were proposed for discussion and the meeting was adjourned.

EUNICE MONUMENT SOUTH
WORKING INTEREST OWNERS' MEETING

JUNE 1, 1983

Name	Company	Location
J. C. Hefley	Amerada Hess	Tulsa
Jeff Herman	Amerada Hess	Tulsa
Randy Couch	Amoco	Houston
Pat Garrett	Amoco	Houston
Lloyd Hoelscher	Amoco	Houston
J. R. Lamar	Amoco	Houston
Bruce A. Landis, Jr.	Amoco	Houston
Allen Harvey	Arco	Midland
C. R. Leggott	Arco	Midland
Greg Pankratz	Arco	Midland
Will Brady	Brady Production	Midland
Don D. Allen	Chevron	Midland
Carl Fesmire	Chevron	Midland
D. G. Simalke	Chevron	Midland
Stephen Schubarth	Chevron	Midland
Tom Huzzey	Cities Service	Midland
Glen Kellerhals	Cities Service	Midland
J. A. Motter	Cities Service	Midland
Matt Rudolf	Cities Service	Midland
Hugh Ingram	Conoco	Hobbs
Ron McWilliams	Conoco	Hobbs
David Wacker	Conoco	Hobbs
R. R. Hickman	Exxon	Midland
Glenn Luce	Exxon	Midland
Bill Nolan	Exxon	Midland
Rich Wheeler	Exxon	Midland
Jason Bailey	Getty	Midland
R. C. Anderson	Gulf	Hobbs
D. T. Berlin	Gulf	Midland
D. L. Joiner	Gulf	Midland
F. H. Martin	Gulf	Midland
C. D. Stenberg	Gulf	Midland
Tom Wheeler	Gulf	Midland
Mark Veteto	Me-Tex	Hobbs
Sheila McLean	Shell	Houston
Gail Ratterree	Shell	Houston
Brad Browning	Sun	Midland
Mel Schroeder	Sun	Midland
Herb Seidel, Jr.	Sun	Dallas
Joe Thornton	Sun	Dallas
Steve Schlarb	Texaco	Midland

WORKING INTEREST OWNERS

Amerada Hess
P. O. Box 2040
Tulsa, Oklahoma 74102
Attn: Mr. J. C. Hefley, Mgr.
Joint Venture-U.S., Onshore

Amerada Hess
P. O. Box 840
Seminole, Texas 79360
Attn: Mr. George Garrett

Amoco Production Company (USA)
P. O. Box 3092
Houston, Texas 77253
Attn: Mr. Bruce A. Landis, Jr.

Apollo Oil Company
Box 1737
Hobbs, New Mexico 88240
Attn: Mr. Alan Ralston

ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702
Attn: Mr. C. R. Leggott

Brady Production Company
P. O. Box 9128
Midland, Texas 79703

Earl R. Bruno
P. O. Box 5456
Midland, Texas 79704

Mr. John Catron
Catron Working Interest Accts.
Catron, Catron and Sawtell
P. O. Box 788
Santa Fe, New Mexico 87501

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attn: Mr. W. A. Goudeau

Cities Service Company
P. O. Box 1919
Midland, Texas 79702
Attn: Mr. K. D. Van Horn

Conoco, Inc.
P. O. Box 460
Hobbs, New Mexico 88240
Attn: Mr. Mark K. Mosely

Exxon Company, U.S.A.
P. O. Box 1700
Midland, Texas 79702
Attn: Mr. R. R. Hickman

Bert Fields, Jr.
11835 Preston Road
Dallas, Texas 75230
Attn: Mr. Jerry H. Doughman

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702
Attn: Mr. Raymond H. Blohm

Mr. Doyle Hartman
P. O. Box 10426
Midland, Texas 79702

Mr. Kenneth Heddley
P. O. Box 569
Tijeras, New Mexico 87509

William A. and Edward R. Hudson
1000 First National Building
Fort Worth, Texas 76102

Koch Exploration Company
1110 Gibralter Savings Center
Midland, Texas 79702

George H. Landreth
206 Bluff Crest
San Antonio, Texas 78216

W. A. Landreth
908 The Texas Building
Fort Worth, Texas 76102

ME-TEX Companies
P. O. Box 2070
Hobbs, New Mexico 88240
Attn: Mr. Burton Veteto

Mr. James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

Jeanne Fields Shelby, Agency
#9591-00
Republic National Bank
Trust Oil & Gas Department
P. O. Box 241
Dallas, Texas 75221

Shell Oil Company
P. O. Box 991
Houston, Texas 77001
Attn: Mr. B. G. Ratterree

Sun Exploration and Production Co.
Campbell Center II
P. O. Box 2880
Dallas, Texas 75221
Attn: Mr. J. W. Thornton

Sun Production
P. O. Box 1861
Midland, Texas 79702
Attn: Mr. M. C. Schroeder

Texaco, Inc.
P. O. Box 728
Hobbs, New Mexico 88241
Attn: District Engineer

Texaco, Inc.
P. O. Box 3109
Midland, Texas 79702
Attn: Division Vice President

Fred Turner, Jr., Estate
P. O. Box 910
Midland, Texas 79702

Two States Oil Company
Suite 1401
Mercantile Commerce Bldg.
Dallas, Texas 75201
Attn: Mr. Walter Crane

Two States Oil Company
P. O. Box 176
Eunice, New Mexico 88231

Mr. Bruce Wilbanks
P. O. Box 763
Midland, Texas 79702

The Wiser Oil Company
P. O. Box 192
Sistersville, W. VA. 26175
Attn: Mr. Charles P. LaRue

Wiser Oil Company
905 Oil & Gas Building
Wichita Falls, Texas 76301
Attn: Mr. Bob Gilmore

Gulf Oil Exploration and Production Company

D. L. Joiner
MANAGER TECHNICAL
WESTERN DIVISION

September 16, 1983

P. O. Drawer 1150
Midland, TX 79702

Working Interest Owners
Address List Attached

Gentlemen:

Re: Proposed Eunice Monument South Unit
Lea County, New Mexico

Enclosed are minutes of the August 25, 1983, Working Interest Owners Meeting for the proposed unit, which was attended by representatives of approximately 93% of the unit Ownership.

As discussed in the minutes, two written ballots are enclosed with this letter. The first ballot, labeled Working Interest Owner Committee Ballot #4, is a result of the group's attempt to select a method of inducing owners to contribute all "Useable Wellbores" to the unit. Each owner's vote on this ballot will be the equivalent of his decimal percentage of Cumulative Oil Recovery. The second ballot submitted for your consideration is labeled Working Interest Owner Committee Ballot #5. This ballot is a ratification of the participation formula which, during the meeting, received the support of 82.3% of the total unit working interest ownership. You are requested to complete the two ballots and return them to the address indicated on the ballots before October 7, 1983.

During a review of the ballots following the meeting an error was discovered in the division of interest of Tract 99, the Gulf Frona Leck Lease. The data for the lease indicated that ARCO held a 14.29% working interest with Getty holding a 28.57% working interest. The percentage values are in fact reversed. As a result, the parameter table values in the Technical Committee Report are in error for ARCO and Getty. Additionally, a telephone conversation with Mr. Edward R. Hudson, Jr., resulted in the consolidation of the Hudson interests from three accounts to two accounts in the parameter table, with no other interests being affected. We are enclosing a corrected parameter table, Table 8A, which reflects these changes. We regret any inconvenience these errors may have caused.

Yours very truly,

D. L. JOINER

TSW:ac
Enclosures
cc: Mr. R. C. Anderson
Gulf Oil Company
P. O. Box 670
Hobbs, New Mexico 88240

Amerada Hess
P. O. Box 2040
Tulsa, Oklahoma 74102
Attn: Mr. J. C. Hefley, Mgr.
Joint Venture-U.S., Onshore

Amoco Production Company (USA)
P. O. Box 3092
Houston, Texas 77253
Attn: Mr. Bruce A. Landis, Jr.

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Box 1737
Hobbs, New Mexico 88240
Attn: Mr. Alan Ralston

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Midland, Texas 79702
Attn: Mr. C. R. Leggott

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P. O. Box 9128
Midland, Texas 79703

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P. O. Box 5456
Midland, Texas 79704

Mr. John Catron
Catron Working Interest Accts.
Catron, Catron and Sawtell
P. O. Box 788
Santa Fe, New Mexico 87501

Chevron U.S.A., Inc.
P. O. Box 1660
Midland, Texas 79702
Attn: Mr. W. A. Goudeau

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P. O. Box 1919
Midland, Texas 79702
Attn: Mr. K. D. Van Horn

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P. O. Box 460
Hobbs, New Mexico 88240
Attn: Mr. Mark K. Mosely

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P. O. Box 1700
Midland, Texas 79702
Attn: Mr. R. R. Hickman

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11835 Preston Road
Dallas, Texas 75230
Attn: Mr. Jerry H. Doughman

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P. O. Box 1231
Midland, Texas 79702
Attn: Mr. Raymond H. Blohm

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P. O. Box 10426
Midland, Texas 79702

Mr. Kenneth Heddley
P. O. Box 569
Tijeras, New Mexico 87509

William A. and Edward R. Hudson
1440 Interfirst Tower
801 Cherry
Fort Worth, Texas 76102

Koch Exploration Company
1110 Gibralter Savings Center
Midland, Texas 79702

George H. Landreth
206 Bluff Crest
San Antonio, Texas 78216

W. A. Landreth
908 The Texas Building
Fort Worth, Texas 76102

ME-TEX Companies
P. O. Box 2070
Hobbs, New Mexico 88240
Attn: Mr. Burton Veteto

Mr. James W. Rasmussen
P. O. Box 5537
Midland, Texas 79701

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Trust Oil & Gas Department
P. O. Box 241
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P. O. Box 991
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Attn: Mr. B. G. Ratterree

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P. O. Box 2880
Dallas, Texas 75221
Attn: Mr. J. W. Thornton

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P. O. Box 728
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P. O. Box 3109
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Suite 1401
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Attn: Mr. Walter Crane

Mr. Bruce Wilbanks
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Midland, Texas 79702

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P. O. Box 192
Sistersville, W. VA. 26175
Attn: Mr. Charles P. LaRue

Wiser Oil Company
905 Oil & Gas Building
Wichita Falls, Texas 76301
Attn: Mr. Bob Gilmore

EUNICE MONUMENT SOUTH UNIT
WORKING INTEREST OWNERS MEETING

AUGUST 25, 1983

The Working Interest Owners' Meeting was convened at 9:00 a.m., August 25, 1983, with Mr. Dave Berlin serving as chairman. Mr. Berlin welcomed the attendees who represented approximately 93% of the total unit working interest, and briefly reviewed the agenda for the day.

The first discussion topic was a review of the voting procedure for the group. During the previous WIO meeting of June 1, 1983, a procedure was used which had the following provisions:

1. A question requires a vote of 75% or greater of the working interest owners to pass, except

2. If Gulf votes against a question, two other owners with a combined share of 5% or greater must join Gulf to defeat a question.

Subsequent to the last meeting Gulf pointed out that these provisions did not require a minimum percentage of ownership to pass a question if Gulf did not secure the required ownership to defeat the vote. This allowed the possibility of question passing with a minority of support in the event of numerous abstentions. Mr. Berlin suggested that Gulf would prefer that the criteria be amended to require a minimum of 51% of the working interest to support a question before it could be passed. After discussion, other owners agreed that this was a reasonable procedure for the committee to use until actual participation is negotiated as a basis for balloting.

Mr. J. R. Lamar, Amoco, presented a statement to the group regarding the previous ballots by the owners on the unitized interval definition and the request by Amoco to add acreage in Sections 23 and 24, Township 20 South, Range 36 East, to the unit. Mr. Lamar outlined Amoco's continued concern that the vertical interval definition was unorthodox and should contain reference to specific formation tops within the unit area. He suggested that the definition in its final form contain references to a type log with the formations clearly designated on the log. Mr. Lamar further requested that the owners reconsider the previous request to add the additional acreage to the unit. In support of this request Mr. Lamar distributed a revised parameter table and decline curves for the owners to review.

Mr. Ron McWilliams, Conoco, informed the group that the BLM had stated opposition to adding the acreage in the E/2 NE/4 of Section 23 to the unit as Amoco had proposed. The BLM had objected to splitting the Conoco, et al, Lease in Section 23 and had suggested that all of the

acreage in the Conoco Lease be included, or that the 80 acres in the Section 23 be deleted from the Amoco proposal. Amoco then agreed to change their proposal to include only the 580 acres operated by Conoco and Amoco in Section 24. Owners suggested that the question for vote should be whether to accept or reject the boundary for the unit as proposed by the Technical Committee; therefore, the final question was stated as follows: "Do you favor maintaining the boundary for the proposed unit as recommended by the Technical Committee?" The result of the vote was that 78.7% voted for the question, 14.7% voted against, with 6.6% of the ownership not present. Individual votes are recorded in Attachment 1.

Mr. Berlin presented the definition of "Useable Wellbores" which had been introduced in the June meeting, but not adopted because there was no corresponding vertical interval definition of the unitized formation. After discussion by the Committee, the proposed definition was changed slightly and now reads as shown in Attachment 2. The group also discussed three other considerations which affect the classification of wellbores and their transfer to the unit, and these considerations are also presented in Attachment 2.

Consideration 2 was a major topic of discussion because of the requested two year warranty. Gulf suggested that this period represented an estimate of the time which would be required to actually examine all wellbores in the unit. A number of operators expressed reluctance to warrant wellbores which they were not operating, even though they understood the need for some type of guarantee that wellbores contributed to the unit were, in fact, "useable". A few operators stated that the unit should bear all risks associated with the acceptance of contributed wellbores. After considerable discussion, a compromise was reached by the owners which is summarized as follows:

1. Any wellbore actively producing from the unitized interval at the effective date of unitization shall be accepted as a useable wellbore if all other non-unitized intervals in the wellbore have been squeezed off.

2. Any well which is not actively producing from the unitized interval at the effective date of unitization shall not be accepted as useable until first entry by the unit operator, or the end of a two year time period, whichever occurs first.

The owners further agreed to add a "demand well clause" to the unit instruments to insure that wells are turned over to the unit operator in a timely manner. The general provisions of the clause will require operators to turn over all active wells within the unitized interval immediately upon the date of unitization, but would allow operators to retain and produce wellbores which were single completions in other zones until that wellbore was required for unit operations. Upon demand by the unit operator, the owner will be required to give up the wellbore within 30 days.

The next discussion topic involved selection of a method for resolving the inequity which will arise if some operators do not contribute a useable wellbore on each 40-acre proration unit which has recorded production from the unitized interval. The two methods under consideration were (1) an inventory adjustment for useable wellbores, or (2) a penalty assessment for every non-contributed wellbore. The primary reason that one of these methods is needed for the unit is that a large number of wells have been recompleted to the Eumont Gas Zone, or are temporarily abandoned in the unitized interval, and some method must be found to induce operators to return as many wellbores as possible to the unit. Of the two suggested methods, Mr. Berlin pointed out that the inventory adjustment basically gives credit for an operator having a useable wellbore, while the penalty method is a direct assessment to an operator for not contributing a wellbore.

During discussion of these methods it was pointed out that the inventory method would be more complicated to administer, and that it offered some disadvantage in that in the case of an operator who had a unit participation percentage in excess of his percentage of the unit wellbores, he might be deficient in the adjustment and be caused to pay additional money to the unit even though he contributed all the wellbores he had ever operated.

Mr. Berlin offered a hypothetical example which demonstrated the two methods. This example is shown in Attachment 3. After further discussion it appeared that the group consensus was to adopt the penalty method, and a formal vote was called with the question stated as follows: "Do you favor assessing a penalty for non-contributed wellbores?" The question received an affirmative vote of 74.994% and therefore, failed to pass. The group then agreed to submit the question to the entire ownership as a written ballot. The committee ballot is shown in Attachment 4.

Gulf requested that the group consider the proposed $100,000 figure as a suggested value for existing wellbores, and comment regarding whether the value was adequate, too high, or too low. Following a brief discussion, an informal ballot was taken in which the group unanimously agreed that the value of $100,000 would be an appropriate amount to use in either the inventory adjustment or penalty methods.

Following a break for lunch, the committee began the negotiation of unit participation. As a first order of business, the group unanimously voted to accept the parameter table contained in the Technical Committee Report as the basis for negotiating participation. A corrected copy of this table is included as Attachment 5 to these minutes.

A total of 9 formulas were presented for group consideration. The results of each ballot are recorded beginning with Attachment 6. When no formula received more than the required 75% vote of the Working Interest Owners, Conoco requested that Formula 2 be reconsidered and renumbered Formula 2A. Conoco changed their vote from No to Yes,

which gave a total affirmative vote in excess of 82%. At this time ARCO and other representatives noted that a possible compromise of the parameters of Formula 2 could gain additional support of the formula, and asked if any such compromise could be suggested to the group. When no adjustment to the formula was suggested, one additional two phase formula was evaluated and rejected. The group requested that Formula 2A be proposed by written ballot to the entire Working Interest Ownership.

Under the agenda item "Other Topics," the group heard a request by Conoco for a study to more closely define the water-oil and gas-oil contacts within the unit area. Conoco's letter, Attachment 15, requests a technical committee to perform this study when the well records become available. Mr. Berlin suggested that Gulf, as the Unit Operator, should perform the actual study and compile the information as part of the overall remedial plan for the unit. He suggested that other owners might dedicate members of their technical staff to the study on a full time basis to observe and participate in the work, or that Gulf could publish the results of the study for other owners to review. Mr. Berlin also noted that the time element would be most critical since the records would not be made available to the Unit Operator until the date of unitization and that the study would be a full time task which could be more efficiently performed by the Unit Operator, than by a committee. Mr. Berlin stated that Gulf agreed with Conoco that additional work should be performed when data becomes available, and Gulf would attempt to devise a plan for the study which would allow other owners to participate in the work or review the results.

As a final item for group discussion, Mr. Berlin noted that to date two owners have contacted Gulf with a request to sell their property to the unit. Mr. Berlin stated that Gulf would negotiate the purchase of these properties, then offer all owners an opportunity to purchase their respective percentage in each property.

EUNICE MONUMENT SOUTH UNIT
WORKING INTEREST OWNERS' MEETING

AUGUST 25, 1983

Name	Company	Location	Phone
Lloyd E. Hoelscher	Amoco	Houston	(713) 556-3141
J. R. Lamar	Amoco	Houston	(713) 556-3898
Bob Leggott	ARCO	Midland	(915) 684-0149
Greg Pankratz	ARCO	Midland	(915) 684-0155
Craig Payken	ARCO	Midland	(915) 684-0151
Jerry Tweed	ARCO	Midland	(915) 684-0149
Will Brady	Brady Production	Midland	(915) 699-7367
D. D. Allen	Chevron	Midland	(915) 684-4441
W. A. Goudeau	Chevron	Midland	(915) 684-4441
S. K. Schubarth	Chevron	Midland	(915) 684-4441
D. G. Simolke	Chevron	Midland	(915) 684-4441
Glen Kellerhals	Cities Service	Midland	(915) 685-5849
Matt Rudolf	Cities Service	Midland	(915) 685-5850
Hugh Ingram	Conoco	Hobbs	(505) 393-4141
Dave Wacker	Conoco	Hobbs	(505) 393-4141
Ron McWilliams	Conoco	Hobbs	(505) 393-4141
Ken Ebeling	Exxon	Midland	(915) 685-9643
Glenn Luce	Exxon	Midland	(915) 685-9651
Jason Bailey	Getty	Midland	(915) 686-3400
Dave Berlin	Gulf	Midland	(915) 685-4943
Ganesh Thakur	Gulf	Midland	(915) 685-4945
Tom Wheeler	Gulf	Midland	(915) 685-4938
Sheila McLean	Shell	Houston	(713) 870-3866
Don Pfau	Shell	Houston	(713) 663-2494
Mel Schroeder	Sun	Midland	(915) 688-0435
H. A. Seidel, Jr.	Sun	Dallas	(214) 739-9181
J. W. Thornton	Sun	Dallas	(214) 739-9238
Steve Guillot	Texaco	Hobbs	(505) 393-7191

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 01

Parameters:		
	Cumulative Production	50%
	Remaining Primary Reserves	25%
	Current Production	25%

OWNER	YES	NO	ABSENT
Amerada			.015159
Amoco		.077448	
Apollo			.005355
Arco	.190325		
Brady	.002146		
Bruno			.002132
Catron			.005964
Chevron	.065302		
Cities		.010741	
Conoco		.089201	
Exxon		.051074	
Fields			.000583
Getty	.078295		
Gulf	.305862		
Hartman			.000828
Heddley			.000262
Hudson, E			.000087
Hudson, W & E			.000495
Koch			.003917
Landreth			.002717
Me-Tex			.002852
Rasmussen			.000650
Shelby			.000583
Shell	.066387		
Sun		.009870	
Texaco	.006045		
Turner			.000875
Two States			.001586
Wilbanks			.002211
Wiser			.001049
Total	.714362	.238334	.047305

Attachment 6

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 02

Parameters:		
	Cumulative Production	50%
	Remaining Primary Reserves	40%
	Current Production	10%

OWNER	YES	NO	ABSENT
Amerada			.013020
Amoco	.080397		
Apollo			.004359
Arco	.196117		
Brady		.002117	
Bruno			.002095
Catron			.005706
Chevron	.068942		
Cities	.009955		
Conoco		.093264	
Exxon		.048614	
Fields			.000581
Getty		.074097	
Gulf	.300536		
Hartman			.000766
Heddley			.000262
Hudson, E			.000087
Hudson, W & E			.000494
Koch			.003438
Landreth			.002642
Me-Tex			.002904
Rasmussen			.000650
Shelby			.000581
Shell	.066957		
Sun		.009414	
Texaco	.006355		
Turner			.000872
Two States			.001520
Wilbanks			.002211
Wiser			.001049
Total	.729259	.227506	.043237

Attachment 7

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 02A

Parameters:		
	Cumulative Production	50%
	Remaining Primary Reserves	40%
	Current Production	10%

OWNER	YES	NO	ABSENT
Amerada			.013020
Amoco	.080397		
Apollo			.004359
Arco	.196117		
Brady		.002117	
Bruno			.002095
Catron			.005706
Chevron	.068942		
Cities	.009955		
Conoco	.093264		
Exxon		.048614	
Fields			.000581
Getty		.074097	
Gulf	.300536		
Hartman			.000766
Heddley			.000262
Hudson, E			.000087
Hudson, W & E			.000494
Koch			.003438
Landreth			.002642
Me-Tex			.002904
Rasmussen			.000650
Shelby			.000581
Shell	.066957		
Sun		.009414	
Texaco	.006355		
Turner			.000872
Two States			.001520
Wilbanks			.002211
Wiser			.001049
Total	.822523	.134242	.043237

Attachment 8

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 03

Parameters:		
	Cumulative Production	70%
	Remaining Primary Reserves	15%
	Current Production	15%

OWNER	YES	NO	ABSENT
Amerada			.016879
Amoco		.075117	
Apollo			.004815
Arco		.186035	
Brady		.002077	
Bruno			.002936
Catron			.006643
Chevron		.060588	
Cities	.013200		
Conoco		.086407	
Exxon	.060209		
Fields			.000588
Getty	.085241		
Gulf	.301153		
Hartman			.001022
Heddley			.000367
Hudson, E			.000105
Hudson, W & E			.000595
Koch			.004710
Landreth			.003273
Me-Tex			.003604
Rasmussen			.000910
Shelby			.000588
Shell		.056987	
Sun	.011590		
Texaco	.006782		
Turner			.000883
Two States			.002132
Wilbanks			.003095
Wiser			.001469
Total	.478175	.467211	.054614

Attachment 9

Proposed Eunice Monument South Unit

Formula No. 04

Parameters:		
	Cumulative Production	50%
	Remaining Primary Reserves	35%
	Current Production	15%

OWNER	YES	NO	ABSENT
Amerada			.013733
Amoco	.079414		
Apollo			.004691
Arco	.194187		
Brady	.002126		
Bruno			.002108
Catron			.005792
Chevron	.067728		
Cities		.010217	
Conoco		.091910	
Exxon		.049434	
Fields			.000582
Getty		.075497	
Gulf	.302311		
Hartman			.000786
Heddley			.000262
Hudson, E			.000087
Hudson, W & E			.000494
Koch			.003598
Landreth			.002667
Me-Tex			.002886
Rasmussen			.000650
Shelby			.000582
Shell	.066767		
Sun		.009566	
Texaco	.006252		
Turner			.000873
Two States			.001542
Wilbanks			.002211
Wiser			.001049
Total	.718785	.236624	.044593

Attachment 10

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 05

Parameters:		
	Cumulative Production	40%
	Remaining Primary Reserves	30%
	Current Production	30%

OWNER	YES	NO	ABSENT
Amerada			.014299
Amoco	.078614		
Apollo			.005625
Arco	.192470		
Brady	.002181		
Bruno			.001730
Catron			.005624
Chevron	.067659		
Cities		.009511	
Conoco		.090598	
Exxon		.046506	
Fields			.000581
Getty		.074823	
Gulf	.308216		
Hartman			.000732
Heddley			.000210
Hudson, E			.000078
Hudson, W & E			.000444
Koch			.003521
Landreth			.002439
Me-Tex			.002476
Rasmussen			.000520
Shelby			.000581
Shell	.071087		
Sun		.009010	
Texaco	.005676		
Turner			.000871
Two States			.001313
Wilbanks			.001769
Wiser			.000839
Total	.725903	.230448	.043652

Attachment 11

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 06

Parameters:		
	Cumulative Production	55%
	Remaining Primary Reserves	30%
	Current Production	15%

OWNER	YES	NO	ABSENT
Amerada			.014520
Amoco	.078339		
Apollo			.004722
Arco	.192149		
Brady	.002114		
Bruno			.002315
Catron			.006005
Chevron	.065943		
Cities		.010962	
Conoco		.090534	
Exxon		.052128	
Fields			.000584
Getty	.077933		
Gulf	.302021		
Hartman			.000845
Heddley			.000289
Hudson, E			.000092
Hudson, W & E			.000519
Koch			.003876
Landreth			.002819
Me-Tex			.003066
Rasmussen			.000715
Shelby			.000584
Shell		.064322	
Sun	.010072		
Texaco	.006384		
Turner			.000875
Two States			.001690
Wilbanks			.002432
Wiser			.001154
Total	.734955	.217946	.047102

Attachment 12

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 07

Phase II:

Parameters: 5% Net Acres 75% Remaining Reserves 20% Current Prod.
Phase I:
50% Primary Ultimate 50% Cumulative Production

OWNER	Phase I YES	NO	ABSENT	Phase II YES	NO	ABSENT
Amerada			.007516			.018609
Amoco	.088032				.072781	
Apollo			.004685			.003971
Arco	.209377				.181804	
Brady	.002219				.001987	
Bruno			.000609			.003918
Catron			.003999			.007432
Chevron	.082111				.055447	
Cities		.003902		.016082		
Conoco	.102712			.083703		
Exxon	.026447			.070999		
Fields			.000643			.000594
Getty	.054131			.093025		
Gulf	.306073				.294403	
Hartman			.000352			.001249
Heddley			.000053			.000496
Hudson, E			.000096			.000127
Hudson, W & E			.000541			.000719
Koch			.001240			.005598
Landreth			.001302			.003944
Me-Tex			.001859			.004538
Rasmussen			.000140			.001229
Shelby			.000643			.000594
Shell	.088679				.045531	
Sun		.005574		.013624		
Texaco	.005122			.007744		
Turner			.001070			.000892
Two States			.000386			.002792
Wilbanks			.000280			.004183
Wiser			.000210			.001985
Total	.964902	.009476	.025624	.285177	.651953	.062870

Attachment 13

Participation Formula Ballot
Proposed Eunice Monument South Unit

Formula No. 08

Parameters: 100% Current Production - Phase I
100% Primary Ultimate - Phase II

OWNER	Phase I YES	NO	ABSENT	Phase II YES	NO	ABSENT
Amerada			.017989			.017758
Amoco		.073447			.073943	
Apollo			.010025			.003938
Arco		.181742			.184007	
Brady		.002417			.002000	
Bruno			.000244			.003694
Catron			.005125			.007202
Chevron		.064953			.057377	
Cities	.007214			.015276		
Conoco		.082644			.085191	
Exxon	.036435			.068086		
Fields			.000577			.000593
Getty	.074925			.090392		
Gulf	.335387			.294715		
Hartman			.000554			.001185
Heddley			.0			.000468
Hudson, E			.000043			.000122
Hudson, W & E			.000245			.000692
Koch			.003532			.005298
Landreth			.001575			.003780
Me-Tex			.000798			.004344
Rasmussen			.0			.001159
Shelby			.000577			.000593
Shell		.087988			.048174	
Sun	.007089			.013077		
Texaco		.003167		.007601		
Turner			.000866			.000889
Two States			.000440			.002633
Wilbanks			.0			.003944
Wiser			.0			.001872
Total	.461050	.496358	.042590	.489147	.450692	.060164

Attachment 14

Mark K. Mosley
Division Manager
Production Department
Hobbs Division
North American Production

Conoco Inc.
P.O. Box 460
726 E. Michigan
Hobbs, NM 88240
(505) 393-4141

August 19, 1983

Gulf Oil Exploration
P. O. Drawer 1150
Midland, TX 79702

ATTN: D. L. Joiner

Eunice-Monument South Unit, Lea County, New Mexico

The Technical Committee's Report of April, 1983, on the captioned unit did not provide a very detailed discussion on the initial and present water-oil and gas-oil contacts within the unit. We understand this was due to the poor response to your request for well data from several of the operators. We therefore recommend the technical committee be given a further charge to develop a detailed plan of operation for the unit with particular emphasis on injection intervals to be used in each well. We recognize work on this charge cannot commence until detailed well records become available, but a committee effort should shorten the time and manpower requirements that would otherwise fall upon Gulf, as unit operator, to provide.

We would appreciate a brief discussion on this charge at your August 25th meeting.

Sincerely,

M K Mosley

REM:mhe

Attachment 15

EUNICE MONUMENT SOUTH UNIT
WORKING INTEREST OWNERS' MEETING

AUGUST 25, 1983

Name	Company	Location	Phone
Lloyd E. Hoelscher	Amoco	Houston	(713) 556-3141
J. R. Lamar	Amoco	Houston	(713) 556-3898
Bob Leggott	ARCO	Midland	(915) 684-0149
Greg Pankratz	ARCO	Midland	(915) 684-0155
Craig Payken	ARCO	Midland	(915) 684-0151
Jerry Tweed	ARCO	Midland	(915) 684-0149
Will Brady	Brady Production	Midland	(915) 699-7367
D. D. Allen	Chevron	Midland	(915) 684-4441
W. A. Goudeau	Chevron	Midland	(915) 684-4441
S. K. Schubarth	Chevron	Midland	(915) 684-4441
D. G. Simolke	Chevron	Midland	(915) 684-4441
Glen Kellerhals	Cities Service	Midland	(915) 685-5849
Matt Rudolf	Cities Service	Midland	(915) 685-5850
Hugh Ingram	Conoco	Hobbs	(505) 393-4141
Dave Wacker	Conoco	Hobbs	(505) 393-4141
Ron McWilliams	Conoco	Hobbs	(505) 393-4141
Ken Ebeling	Exxon	Midland	(915) 685-9643
Glenn Luce	Exxon	Midland	(915) 685-9651
Jason Bailey	Getty	Midland	(915) 686-3400
Dave Berlin	Gulf	Midland	(915) 685-4943
Ganesh Thakur	Gulf	Midland	(915) 685-4945
Tom Wheeler	Gulf	Midland	(915) 685-4938
Sheila McLean	Shell	Houston	(713) 870-3866
Don Pfau	Shell	Houston	(713) 663-2494
Mel Schroeder	Sun	Midland	(915) 688-0435
H. A. Seidel, Jr.	Sun	Dallas	(214) 739-9181
J. W. Thornton	Sun	Dallas	(214) 739-9238
Steve Guillot	Texaco	Hobbs	(505) 393-7191

Attachment 16

OIL CON
Santa Fe
Case No. 8397 Exhibit No. 21-A
Submitted by: Gulf
Hearing Date: