TECHNICAL COMMITTEE REPORT

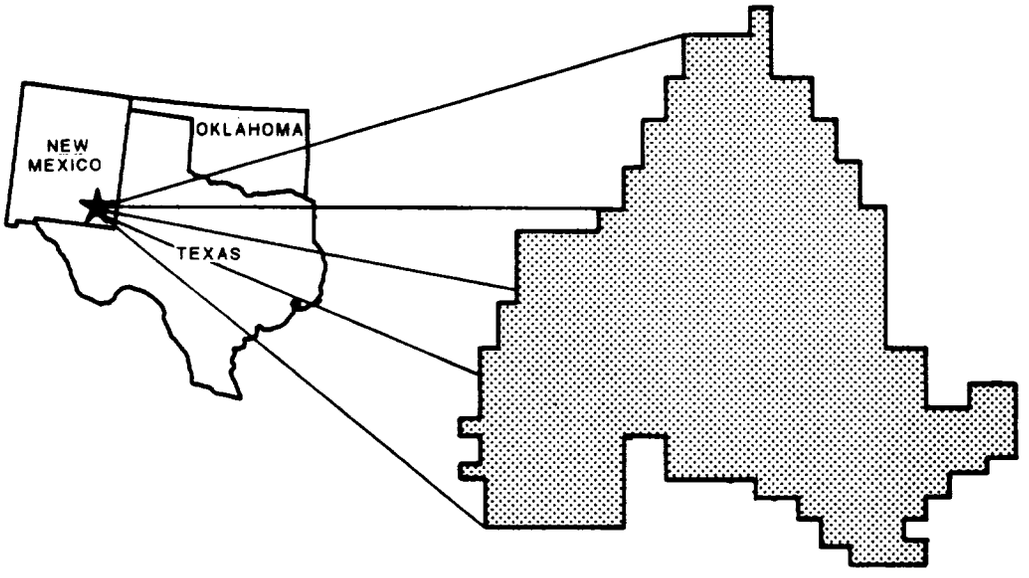
PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

LEA COUNTY, NEW MEXICO

EVALUATION OF PRIMARY RESERVES,

ASSESSMENT OF WATERFLOOD POTENTIAL, AND

PROPOSAL FOR A WATERFLOOD DEVELOPMENT PLAN



NOVEMBER 7, 1990

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CONCLUSIONS

1. Remaining primary reserves as of August 1, 1989 are 14.1 MMSTB of oil and 39.4 BCF of gas. Due to complexity of production histories and reservoir mechanics, specifically non-declining tracts and potential plug backs, remaining primary reserves contain a degree of uncertainty. Because of this, remaining primary reserves should be considered best effort estimates.

2. Secondary recovery potential is 48.8 MMSTB for the study area -- this value is based on a well-by-well assessment of waterflood potential using a variable secondary/primary (S/P) ratio approach. Complexities in reservoir characteristics and reservoir mechanics contribute to uncertainty in secondary recovery potential.

   This assessment represents the best effort of the Technical Committee using all available data. Overall results compare well with published estimates of recovery (incremental and ultimate after waterflooding) as a percent of original oil-in-place and S/P ratios for neighboring Grayburg/San Andres waterfloods.

3. Secondary reserves for the proposed waterflood plan are 43.8 MMSTB -- approximately 90 percent of the potential secondary oil in the study area. The proposed development plan concentrates on the most promising waterflood areas. Phased development will capitalize on increased reservoir knowledge and allow for modifications in pattern development, ultimately optimizing economically floodable areas. Future expansion outside the proposed development may be possible if flood performance is better than anticipated.

4. The proposed waterflood plan is economically attractive for the North Monument Grayburg/San Andres Study Area. For a constant oil price of $18/BBL and a capital investment of 57.1 MM$, incremental analysis of the proposed waterflood yields:

   - Discounted cash flow rate of return = 20.6 percent.
   - Net present value at 15 percent discount = $22.0 million.
   - Ratio of capital investment to incremental recovery = $1.30/BBL.

5. The Technical Committee believes that the exhaustive effort conducted to date is sufficient for completion of the assigned charges, and any additional time and money spent on this endeavor will neither significantly improve the estimates of primary and secondary reserves, nor substantially impact the proposed waterflood plan.

RECOMMENDATIONS

1. Unitize the Grayburg and San Andres formations within the study area for the purpose of implementing a waterflood to improve oil recovery from 29 percent of OOIP under status quo to 37 percent of OOIP under waterflooding.

2. A data acquisition program should be conducted to improve the reservoir description and aid in future reservoir management decisions. This includes utilizing the acquired data to modify pattern development and optimize the economically floodable areas. Key elements of this program include:

   - Acquisition and analysis of Grayburg/San Andres cores from 16 new wells.
   - Comprehensive logging programs for all new wells.
   - Comprehensive surveillance program.

3. Waterflood performance should be continually monitored and the plan modified based on:

   - Results of the data acquisition program.
   - An ongoing analysis of flood performance.

4. A comprehensive evaluation of the technical and economic feasibility of area-wide CO2-flooding should be implemented at an appropriate time.

INTRODUCTION

PURPOSE

This report has been prepared in accordance with the charge to the Technical Committee (Figure 1) as assigned by the Working Interest Owners (WIO) at their meeting of January 17, 1990. Specific topics addressed in this report include:

- Remaining primary reserves by tract.
- Secondary reserves by tract.
- Proposed waterflood development plan and performance forecast.
- Project facilities and cost estimates.
- Economic evaluation of the proposed waterflood plan.
- Tabulation of potential participation parameters.

PREVIOUS TECHNICAL COMMITTEE WORK

Technical Committee studies have been ongoing since the first WIO meeting held on May 10, 1981. This effort can be divided into three distinct periods as summarized below:

- **Period 1.** Evaluate a fieldwide unit for CO2-flooding -- May, 1981 to September, 1986.
- **Period 2.** Evaluate a fieldwide unit for waterflooding -- September, 1986 to January, 1989.
- **Period 3.** Evaluate the North Monument study area for waterflooding -- January, 1989 to August, 1990.

Period 1

Studies during this period were directed towards evaluating the technical and economic feasibility of implementing a CO2-flood in the assigned study area (original area larger than that considered in this study). Results of the Technical Committee investigation were summarized in a two-part report plus addendum dated July 1, 1986.

Although the prospects of conducting a CO2-flood appeared to be favorable under the economic conditions present prior to 1986, a sharp drop in oil prices resulted in a reevaluation of project objectives. At the meeting of September 10, 1986, the WIO established a new charge that concentrated on developing the waterflood potential of the original study area.

Period 2

Results of the Technical Committee investigation were summarized in a report dated November, 1988. This report concluded that waterflooding was economically attractive, and recommended that the entire study area be unitized for the purpose of conducting a staged waterflood project.

Although supported by a majority of the WIO, the report and recommendations did not receive the 75 percent approval required for acceptance. Dissenting owners were concerned about:

- Including an area with no waterflood reserves (due to a natural water drive producing mechanism) in the unit for its future CO2-flood potential.
- Uncertain waterflood potential of the lower Grayburg.

Period 3

Although no Technical Committee meetings were held during 1989, a milestone was reached when Chevron completed an independent geological and engineering study that confirmed the waterflood potential of the lower Grayburg and supported the secondary reserve estimates in the Technical Committee report of November, 1988.

At the meeting of January 17, 1990, the WIO approved a new charge to the Technical Committee (Figure 1), and a new boundary for the study area (Figure 2) that excludes large areas with limited or questionable waterflood potential. The committee was directed to complete these charges using the methodology previously established and documented in the report of November, 1988.

REMAINING PRIMARY RESERVES

OVERVIEW

Remaining primary reserves were evaluated by tract using methodology previously established by the Technical Committee. Reserves for the entire study area as of August 1, 1989 are 14.1 MMSTB of oil and 39.4 BCF of gas. Key steps in the evaluation process are summarized below:

- Update production data by well through July, 1989 (latest data available at the time this evaluation commenced).
- Verify production data and tract ownership.
- Evaluate reserves by tract using decline curve analysis wherever possible.
- Determine annual decline factors using a computer program -- obtain an exponential decline from a least-squares fit of the production data.
- Use the Life Index (LI) approach to evaluate reserves on tracts with no decline.
- Apply the LI as an upper limit to reserves for all tracts.

In the LI method, current producing rate is multiplied by a set time period (the LI) to determine remaining primary reserves. Duration of the LI for this application was 11.15 years; this value was obtained as described below:

- LI of 14.4 years used in the evaluation of primary reserves as of 5-1-86.
- 3.25 years elapsed from 5-1-86 to the current evaluation date of 8-1-89.
- Current LI of 11.15 years = 14.4 years - 3.25 years.

To assure consistency between declining and non-declining tracts, the LI of 11.15 years was used as a 'cap' or upper limit to reserves for all tracts. This assured that tracts with low declines would not have greater reserves than non-declining tracts producing at the same initial rate. A more detailed discussion of the LI methodology is included in the report of November, 1988.

Due to complexity of production histories and reservoir mechanics, specifically non-declining tracts and potential plug backs, remaining primary reserves contain a degree of uncertainty. Because of this, remaining primary reserves should be considered best effort estimates.

ASSESSMENT OF OIL AND GAS RESERVES

Methodology

All declining tracts were evaluated in the same manner -- by identifying a representative exponential decline using a mainframe-based computer software program. This approach involved the following steps:

- Plot tract production data through July, 1989, and select starting and ending dates for a representative 'decline period'.
- Calculate an exponential decline using a least-squares fit of the production data in the previously selected 'decline period'.
- Calculate remaining primary reserves for the tract.

After completing an initial screening of all decline curves, the 152 tracts in the study area were divided into five categories: tracts with no active wells, declining oil tracts (GOR less than 5,000 SCF/STB), declining gas tracts (GOR greater than 100,000 SCF/STB), high GOR oil tracts (GOR between 5,000 and 100,000 SCF/STB), and tracts with no decline. With five tracts containing both active oil wells and active gas wells, the 152 tracts required a total of 157 evaluations.

Appendix A summarizes the determination of remaining primary reserves for each tract in the study area. This tabulation includes the following information for each of the 157 evaluations noted above: decline category, annual decline factor, starting rate, abandonment rate, producing GOR, remaining primary oil and gas reserves, and the Life Index (remaining primary reserves divided by starting rate).

Figure 3 illustrates the areal distribution of tract decline factors for all oil producing wells. Inactive wells, gas wells, and wells producing less than the economic limit are left uncolored.

Key elements involved in the assessment of remaining reserves for each of the five decline categories are summarized below.

Tracts With No Active Wells

Of the 152 tracts in the study area, 30 contained no active Grayburg/San Andres completions; hence, these tracts were assigned no remaining primary reserves.

Declining Oil Tracts

58 tracts with producing GOR's below 5,000 SCF/STB were evaluated using the following rules:

- Economic limit of 2 BOPD per active oil well.
- A 'cap' on reserves based on a maximum LI of 11.15 years.
- Current producing GOR is assumed to remain constant throughout the remaining productive life.

Declining Gas Tracts

11 tracts with producing GOR's in excess of 100,000 SCF/STB were evaluated using the following rules:

- An economic limit of 10 MCFD per active gas well.
- A 'cap' on reserves based on a maximum LI of 11.15 years.
- Current producing GOR is assumed to remain constant throughout the remaining productive life.

High GOR Oil Tracts

To account for the higher gas production from these 35 tracts, the abandonment rate was set at 3 barrels of oil equivalent (BOE) per day per active well where 10 MCFG = 1 BOE. This resulted in an adjustable or flexible abandonment rate (expressed in BOPD) based on the magnitude of the producing GOR for a particular tract.

The following equation was used to convert abandonment rate from BOEPD to BOPD:

$$\text{Abandonment Rate} = (\text{Active Wells}) \times 30{,}000/(10{,}000 + \text{GOR})$$

This equation yielded an abandonment rate below 2 BOPD per well for any tract with a producing GOR above 5,000 SCF/STB.

Other than the adjustable abandonment rate, these high GOR tracts were evaluated in exactly the same manner as the declining oil tracts.

Tracts With No Decline

Since conventional decline curve analysis could not be used, reserves for these 16 tracts (13 oil and 3 gas) were evaluated using the LI approach. With three exceptions, reserves were calculated by multiplying the 'current rate' (average for the 12 month period from 8-88 through 7-89) by the LI of 11.15 years.

The three exceptions granted by the Technical Committee involved changed to the value of 'current rate' to be used in the LI calculation. These changes are described below:

- **Tract 29.** Used a 'current rate' of 80 BOPD instead of the 12-month average of 52 BOPD. Installation of a submersible pump during 1989 brought production up to top allowable.

- **Tract 104.** Used a 'current rate' of 594.4 BOPM -- a 10-month average for the period from 8-88 through 5-89. Low production for 6-89 and 7-89 unduly lowered the 12-month average rate.

- **Tract 141.** Used a 'current rate' of 10,950 MCFM (top allowable for a gas well) instead of the 12-month average of 15,248.50 MCFM. This tract overproduced 51,582 MCF of gas during the period from 8-88 through 7-89.

Many non-declining tracts had one or more wells producing at or near the 'top allowable' of 80 BOPD for oil completions or 360 MCFD for gas completions. Natural water influx appears to be responsible for the high and relatively constant rates for 'top allowable' oil tracts. Field rules limiting gas production in association with an oil reservoir are responsible for 'top allowable' gas tracts.

SECONDARY RESERVES

OVERVIEW AND METHODOLOGY

Secondary recovery potential for the study area was estimated to be 48.8 MMSTB of oil. This value was obtained using the variable secondary-to-primary (S/P) ratio approach described below. A more conventional analysis was not feasible due to the complex primary production history of the field, and the lack of quantitative reservoir data on a well-by-well basis. The values determined for secondary reserves, therefore, contain a degree of uncertainty; however, they should be considered the committee's best effort estimates.

The S/P ratio approach is based on analogy to the actual and projected performance of 62 nearby Grayburg and Grayburg/San Andres waterfloods in 13 fields. As summarized in Table 1, S/P ratio for these 13 fields varies from 0.4 to 1.1 with a composite of 0.633 for all projects.

The Technical Committee established a variable S/P ratio approach for the assessment of secondary recovery potential at Monument. S/P ratios were assigned on a well-by-well basis after conducting a detailed review of the past performance and workover histories for 589 Grayburg/San Andres completions in the original Monument Grayburg/San Andres study area (362 of these wells are in the North Monument study area). Key elements of this approach are summarized below:

- A maximum S/P ratio of 0.6 was applied where past performance indicated a solution gas drive producing mechanism.
- A minimum S/P ratio of 0.0 was applied where past performance was strongly influenced by natural water influx.
- S/P ratios between 0.0 and 0.6 were applied where past performance indicated limited natural water influx.

The determination of secondary reserves by tract was conducted by combining results of the S/P ratio assignments with projections of ultimate primary recovery by well. This process was ultimately refined through the use of CPS-1, a computerized contouring program developed by Radian Corporation.

ASSIGNMENT OF SECONDARY-TO-PRIMARY RATIO

Key factors involved in the well-by-well assignment of S/P ratio include the following:

- Reservoir rock quality (as indicated by past performance).
- Dominant primary producing mechanism.
- Extent of water invasion in the oil column.

- Location of potential flow barriers within Grayburg Zone 3-C that may have limited the vertical extent of water influx.

- Zones present in the oil column.

- Performance of adjacent wells.

Historical performance which resulted in a reduction in the assigned S/P ratio from the maximum of 0.6 included plug backs and workovers to reduce water production, high fluid rates and water cuts, high cumulative water production, and high water cuts and rates reported during tests and workovers. The reduction in S/P ratio was moderated under the following circumstances:

- A significant and long-term reduction in water production after plug back.

- The presence of potentially floodable pay behind pipe.

- Where past water production appears to be directly associated with a frac job.

Most waterflood potential exists in Grayburg Zones 2, 3, and portions of 3-C. Virtually no waterflood potential exists in the San Andres as a result of the significant water influx experienced by this zone throughout the field.

A summary of S/P ratio by well is included in Appendix B. This tabulation includes information on all 589 wells in the original Monument Grayburg/San Andres study area. Data outside the current study area provided additional control points for the computer generated maps. Appendix B includes the following information for each well:

- Cumulative oil and water production through July, 1989.

- Gross oil-column thickness of each zone.

- Assigned S/P ratio.

- Original completion data -- date and subsea interval.

- General comments concerning well history and current status.

SECONDARY RESERVES BY TRACT USING CPS-1

Secondary reserves by tract were obtained through the use of CPS-1, a computerized contouring program with the capability of conducting mathematical operations between surfaces. The steps used in this procedure are described below:

- Prepare a computer database consisting of well locations, tract boundaries, assigned S/P ratios, and ultimate primary recovery per well.

- Use CPS-1 to generate maps of S/P ratio (Figure 4) and ultimate primary recovery by well (Figure 5).

- Multiply these two surfaces using CPS-1, and generate a map of secondary reserves by well (Figure 6).

- Integrate this last surface to obtain secondary reserves by tract. (NOTE: maps of ultimate primary recovery and secondary reserves were converted to a barrels-per-acre basis prior to integration to allow the direct output of secondary reserves by tract).

Potential secondary reserves by tract are included in the tabulation of participation parameters in Appendix C; total secondary recovery potential is 48,757 MSTB. As indicated in Table 2, ultimate recovery after waterflooding (as a percent of OOIP) compares well with composite results for the 62 nearby Grayburg/San Andres waterfloods noted previously.

This secondary reserve assessment is the best estimate the Technical Committee could develop for this highly complex reservoir with meager, and at-times questionable data. Conventional techniques, suggested by a number of members, were discussed at length but could not be utilized with any degree of confidence and consensus.

Although the committee could not reach unanimous agreement of the secondary reserve estimates for each tract, the results reported herein represent a fair compromise arrived at by majority acceptance of the members.

WATERFLOOD DEVELOPMENT PLAN AND PERFORMANCE FORECAST

DEVELOPMENT PLAN

The proposed waterflood plan, illustrated in Figure 7, consists of 108 injectors developed on an 80-acre 5-spot pattern. Factors considered in the preparation of this plan include the following:

- Employ a flood pattern that will provide high sweep efficiency and an adequate injection rate while minimizing redrilling.
- Utilize as many existing wellbores as possible.
- Maintain consistency with the injection pattern for the adjacent Eunice Monument West extension of Chevron's Eunice Monument South Unit (EMSU).
- Include patterns dominated by moderate-to-high S/P ratios (0.3 and above).
- Assure adequate secondary recovery potential for each proposed injector -- a minimum of 120 MSTB incremental oil per injector used in most cases.
- No conversion proposed for high oil rate producers in areas of low-to-moderate S/P ratio.

An implementation plan is proposed that calls for development to be spread over a three-year period. Approximately one-third of the facility construction and well work (drilling, conversions, and workovers) is to be completed each year from 1992 through 1994. Injection will commence on 1-1-93 for the first 36 injectors, 1-1-94 for the next 36 injectors, and 1-1-95 for the last 36 injectors.

This implementation provides the following benefits when compared to the immediate development of all 108 injectors:

- Less capital exposure in first year.
- Lower conversion loss in first year.
- Reservoir information will be processed during each phase allowing for review and modification of patterns to provide for optimum waterflood development.

To implement this plan, the committee recommends unitizing all leases within the proposed unit boundary shown on Figure 2. The recommended vertical interval to be unitized extends from the top of the Grayburg formation to the base of the San Andres formation as depicted on the type log of Figure 8 -- a Gamma Ray-Compensated Sonic log for the Monument Abo Unit No. 1 drilled by Amerada Hess Corporation in 1980.

PRIMARY RECOVERY FORECAST

A primary recovery forecast was generated for the study area by applying representative exponential declines to the average fieldwide oil and gas rates for August, 1989. Annual decline and abandonment rates were adjusted to conform with the remaining primary reserves obtained from the tract-by-tract evaluation of decline curves. Key elements of this forecast are summarized below:

- Annual oil decline -- 9.1 percent.
- Starting oil rate -- 3,855 BOPD for August, 1989.
- Abandonment oil rate -- 175 BOPD.
- Annual gas decline -- 9.7 percent.
- Starting gas rate -- 11,635 MCFD for August, 1989.
- Abandonment gas rate -- 420 MCFD.

The resulting primary performance forecast, which also includes an estimate of active well count, is included in Table 3 -- this table begins in calendar year 1992, the project start date for the economic evaluation. Primary reserves on the project start date of January 1, 1992 are 11.0 MMSTB of oil and 30.9 BCF of gas.

WATERFLOOD PERFORMANCE

Waterflood Reserves In Developed Area

Secondary reserves for the proposed waterflood plan are 43,852 MSTB. This figure was obtained using the procedure outlined below:

- Obtain 'potential secondary recovery' for each well in study area from the well-by-well assessment of S/P ratio.
- Estimate the fraction of each 40-acre proration unit that will be processed during the proposed waterflood -- assign a 'fraction processed' of 1, 3/4, 1/2, 1/4, or zero to each well.
- Multiply 'potential secondary recovery' by the 'fraction processed' to obtain recoverable secondary oil for each well.
- Sum results from all wells to obtain recoverable secondary reserves for the proposed flood plan.

This total of 43,852 MSTB represents 90 percent of the potential secondary oil in the study area. Greater recovery is possible if future performance warrants expansion of the waterflood into marginal areas outside the development plan as currently proposed.

Analogy to Comparable Waterfloods

Projected waterflood performance was based largely on analogy to the EMSU. The lack of accurate reservoir data, the complex primary production history, and the non-uniform distribution of waterflood potential have precluded efforts to predict future performance using analytic techniques or reservoir simulation.

The EMSU forecast was selected as a starting point for the following reasons:

- It is an existing, nearby waterflood in the same producing horizon.
- The project employs the same injection pattern and well spacing.
- The forecast has been accepted by the owners at EMSU, and has been used to predict performance for the Arrowhead Grayburg and Eunice Monument West waterflood projects.
- Forecasted waterflood performance is consistent with the results of empirical calculations.

Based on experience at EMSU, the anticipated initial injection rate is 750 BWPD per well. This rate is expected to decrease to an average of 500 BWPD per well at fillup (or peak response). Since the original EMSU performance forecast was based on a constant injection rate of 500 BWPD per well, the EMSU analogy may be conservative in regard to response times.

Waterflood Performance Forecast

Key rate and scheduling considerations obtained from the EMSU analogy are provided below:

- Time to initial response -- 3.5 years after start of injection (at 50% fillup).
- Time to peak rate -- 8 years after start of injection (at 100% fillup).
- Duration of peak rate period -- 2 years.
- Oil rate at peak -- 120 BOPD per completely enclosed 5-spot producer.

Since a three-year implementation plan has been proposed, some adjustments were needed to the response times shown above. As indicated in Table 4, adjustments were made by comparing cumulative water injection at 50% fillup and 100% fillup for: (1) the direct EMSU analogy (equivalent to a one-year implementation plan), and (2) the three-year implementation plan proposed in this report. As a result of these adjustments, time to initial response was increased from 3.5 years to 4.5 years, and the time to peak rate was increased from 8 to 9 years.

The conversion of existing producers to injectors will result in a temporary reduction in oil rate during the initial stages of waterflood development. This reduction in oil rate was incorporated into the waterflood performance forecast over the three-year implementation period in the following manner:

- First rate of reduction is scheduled for 1-1-93.
- Additional rate reduction is scheduled for 1-1-94 and 1-1-95.
- The producing rate of 1,921 BOPD on 1-1-95 will be held constant until initial response on 7-1-97 -- assumes any further production decline will be offset by increased production from workovers (152 scheduled by 1-1-98) and new drilling (26 producers drilled by 1-1-98).

The resulting waterflood performance forecast is illustrated in Figure 9; annual production figures and active well count are provided in Table 5. Peak oil rate is 12,540 BOPD during the year 2002, and total waterflood life is 32.4 years (January, 1993 through May, 2025).

The response times used in developing this performance forecast may be conservative; several factors that could result in shorter response times include:

- Injection rates prior to fillup are expected to exceed the 500 BWPD per well used in developing the EMSU forecast.
- Current average gas saturation may be less than the 20% estimate used in development of the EMSU forecast which would reduce fillup time.
- Calculated fillup volumes are significantly reduced when the waterflood processed area is considered instead of the entire study area -- example calculations shown in Table 4.

Because of this uncertainty, a sensitivity analysis to response times has been included in the economic evaluation of the proposed flood plan.

PROJECT FACILITIES AND COST ESTIMATES

CONTINUED PRIMARY OPERATIONS

No capital investment was included in the economic evaluation of continued primary operations. Annual operating costs were obtained using the forecast of active well count in Table 3, and estimated expenses of $1,250/month per active well.

WATERFLOOD OPERATIONS

Water Supply

The recommended water supply sources for this project are: (1) reinjection of produced brine, and (2) a network of San Andres water supply wells. The proposed supply wells, completed in the middle and lower San Andres, will be approximately 5,000 feet deep.

Based on the reported capacity of 20,000 BWPD for similar wells in the adjacent EMSU, a total of four supply wells will be required at Monument. All supply wells will be located within the areal and vertical limits of the unit.

Surface Facilities

Investment figures for surface facilities reflect cost estimates for the following items:

- Injection distribution system -- includes trunklines, injection lines, meter runs, wellheads, and automation.
- Two water injection plants -- includes pumps and drivers, tanks, and electrification and automation.
- Production facilities -- includes satellites, two production batteries, trunkline, flowline, and electrification and automation.
- Roads and buildings -- upgrade road system, and construct offices, garages, and warehouses.

All surface facilities are scheduled to be completed within the first three years of the project. Detailed cost estimates are itemized by year in Tables 6A, 6B, and 6C. Layout of the proposed production facilities is illustrated in Figure 9, while the injection distribution system is depicted in Figure 10.

Drilling and Completion

Considerable drilling is planned in association with the proposed waterflood development plan. Estimated costs per well are as follows:

- Injection well -- $75,000 tangible and $160,000 intangible.
- Production well -- $87,000 tangible and $174,000 intangible.
- Water supply well -- $500,000 tangible.
- Core acquisition & analysis -- $55,000 intangible (per well cored).

These drilling costs provide for a comprehensive logging program that includes: gamma ray, density, compensated neutron, electromagnetic propagation, dual laterolog, micro spherically focused, borehole compensated sonic, and repeat formation testing in selected wells.

The proposed drilling program includes 4 water supply wells, 15 injection wells, 24 producing wells, and 20 replacement wells. Core acquisition and analysis is planned for 16 of the new wells. A drilling schedule is included in Table 7.

The coring program calls for acquisition and analysis of approximately 250 feet of core in each well. The evaluation will include a petrographic examination and both conventional and special analyses. Cost estimates provide for cleaning by CO2 extraction and the determination of: porosity, permeability (horizontal and vertical), capillary pressure, logging parameters (a, m, and n), water-oil relative permeability, and water compatibility.

Conversions

The current 40-acre well spacing will be employed to develop the unit on an 80-acre five-spot pattern. Existing wells will be converted to injectors wherever possible. Estimated conversion costs per well are $27,000 tangible and $48,000 intangible.

All conversions will include a mechanical integrity test of the casing, and installation of new IPC tubing and a packer. Conversion activities may include (as needed): clean-out, drill deeper, set liner, log, perforate, stimulate.

93 conversions are planned over the first three years of the waterflood project. A conversion schedule is included in Table 7. It should be noted that as additional reservoir data is acquired and analyzed, the conversion plan may be modified to assure that only economic waterflood patterns are developed.

Workovers

Remedial work is planned for all existing wells that will be retained as producers in the waterflood plan. Estimated costs per workover are summarized below:

- Active producer -- $2,000 tangible and $42,000 intangible.
- Temporarily abandoned (TA) well -- $30,000 tangible and $50,000 intangible.
- Replace lift equipment -- $58,000 tangible.

A workover schedule for the proposed development plan is included in Table 7. Typical workover activities include (as needed): clean-out, drill deeper, test casing for mechanical integrity, log, perforate, stimulate, and install production equipment. Workover costs for TA wells include the installation of a pumping unit, tubing, and rods. A new sucker rod pump will be installed in all producers.

Additional workovers are planned as peak waterflood response is reached. Artificial lift on interior producers will be replaced when produced fluid volumes exceed capacity of the existing equipment.

Operating Expenses

For those areas not actively involved in waterflood development, operating expenses will remain at $1,250/month per well (same as primary recovery case). Estimated expenses during secondary recovery operations will be $2,550/month per waterflood producer. All costs include overhead.

ECONOMIC EVALUATION

METHODOLOGY AND ASSUMPTIONS

This economic evaluation compares the proposed waterflood development plan to the 'status quo' case of continued primary operations. Sensitivity analyses conducted on oil price, incremental oil recovery, and response times assess the impact of these parameters on project economics.

Primary and waterflood performance forecasts are included in Tables 3 and 5, respectively. Other key elements of this evaluation include:

- Assumptions for economic analysis -- Table 8.
- Investment and expense schedule for waterflood -- Table 9.

OIL PRICE SENSITIVITY ANALYSIS

This analysis demonstrates that the proposed flood plan is economically attractive at current oil prices. Economics were evaluated at oil prices ranging from $10/bbl to $30/bbl; other key assumptions include:

- Constant oil price for each case.
- Constant gas price of $1.20/MCF for each case.
- No escalation of investment and expense.

Figure 12 illustrates the impact of oil price on incremental discounted-cash-flow rate-of-return (DCF-ROR) and incremental net-present-value (NPV) for waterflood economics. Breakeven oil price is approximately $11/bbl (constant) for a 15 percent DCF-ROR.

Detailed results are provided in Table 10 for the constant price case of $18/bbl; a plot of total project cash flow (undiscounted and after tax) by year is included in Figure 13. Key economic indicators for this case include the following:

- DCF-ROR is 20.6 percent.
- NPV at 15 percent discount is $22.0 million.
- Ratio of capital investment to incremental recovery is $1.30/bbl.

OIL RECOVERY SENSITIVITY ANALYSIS

Recovery factors ranging from 75 percent to 125 percent of projected incremental secondary oil were evaluated for the constant price case of $18/bbl. Results indicate that project economics are relatively insensitive to changes of ± 25 percent in projected secondary reserves.

Plots of recovery factor versus incremental DCF-ROR and incremental NPV at 15 percent discount are included in Figure 13. These results show that as recovery factor varies from 75 percent to 125 percent:

- Incremental DCF-ROR varies from 17 percent to 23 percent.
- Incremental NPV @ 15 percent discount varies from 7 MM$ to 36 MM$.

FILLUP TIME SENSITIVITY ANALYSIS

Sensitivity to fillup time was evaluated for the following cases:

- Initial response 4.0 years -- fillup 7.0 years.
- Initial response 4.0 years -- fillup 7.5 years.
- Initial response 4.5 years -- fillup 8.0 years.
- Initial response 4.5 years -- fillup 8.5 years.
- Initial response 4.5 years -- fillup 9.0 years.
- Initial response 4.5 years -- fillup 9.5 years.

Plots of fillup time versus incremental DCF-ROR and incremental NPV at 15 percent discount are included in Figure 14. These results show that as fillup times vary from 7.0 years to 9.5 years:

- Incremental DCF-ROR varies from 24 percent to 20 percent.
- Incremental NPV @ 15 percent discount varies from 32 MM$ to 20 MM$.

POTENTIAL PARTICIPATION PARAMETERS

PARAMETERS CONSIDERED AND SOURCE OF DATA

The following eight parameters have been evaluated by tract and owner:

1. Surface Acres.
2. Cumulative Oil Recovery -- to August 1, 1989.
3. Current Oil Production -- 12 months prior to August 1, 1989.
4. Current Gas Production -- 12 months prior to August 1, 1989.
5. Remaining Primary Oil Reserves -- on August 1, 1989.
6. Remaining Primary Gas Reserves -- on August 1, 1989.
7. Ultimate Primary Oil Recovery.
8. Secondary Oil Reserves.

Parameter 1 represents a nominal acreage figure; all tract values are rounded to the nearest 40 acres.

The production database was updated to August 1, 1989, using figures obtained from Dwight's Energy Service. Tract owners verified (and corrected where necessary) the accuracy of all production data on a well-by-well basis. With one exception, this verified data was used in the tabulation of Parameters 2 through 4. Because Tract 141 overproduced by 51,582 MCF during the 12-month period used to determine current gas production, a value of 131,400 MCF (top allowable of 360 MCF/day for 365 days) was assigned to this Tract.

The determination of remaining primary (Parameters 5 and 6) and projected secondary reserves (Parameter 8) is documented earlier in this report. Ultimate primary oil recovery (Parameter 7) represents the summation of Parameters 2 and 5.

Other commonly tabulated parameters, such as original oil-in-place, were not evaluated because of the lack of accurate reservoir data on a tract-by-tract basis.

The committee could not reach unanimous agreement on the remaining primary and secondary reserves estimates. The results reported herein represent a compromise arrived at by a majority vote (by one vote allocated to each owner present) of the members. Due to the complexity and subjectivity involved in determining remaining primary and secondary reserves, it is recommended that these parameters be considered best effort estimates, only.

TABULATION OF PARAMETERS

The tabulation of potential unit participation parameters is subdivided into the following three sections:

- Tract Summary -- a listing of parameters (actual value and percent of total) by tract.
- Owner Detail -- a listing of parameters (percent of total) by tract for each owner.
- Owner Summary -- a listing of parameters (percent of total) by owner.

The Tract Summary is included in Appendix C, the Owner Detail in Appendix D, and Owner Summary in Appendix E. The tract ownership indicated in Appendix D reflects current information as supplied by the owners. The index map in Figure 2 provides lease names and operators for the various tracts.

FIGURE 1

PROPOSED NORTH MONUMENT GRAYBURG/SAN ANDRES UNIT
CHARGE TO THE TECHNICAL COMMITTEE
DEVELOPED AT WIO MEETING OF JANUARY 17, 1990

1. UPDATE PRODUCTION DATABASE THROUGH JULY, 1989

2. UPDATE REMAINING PRIMARY RESERVES

3. EVALUATE SECONDARY RESERVES

4. DEVELOP A WATERFLOOD PLAN

5. CONDUCT ECONOMIC EVALUATIONS

6. DEVELOP UNITIZATION PARAMETERS

7. REPORT RESULTS TO WORKING INTEREST OWNERS

PROPOSED NORTH MONUMENT GRAYBURG/SAN ANDRES UNIT

TYPE LOG

AMERADA HESS CORPORATION
MONUMENT ABO UNIT NO. 1
SEC. 2 – T20S – R 36E
ELEV. 3613'

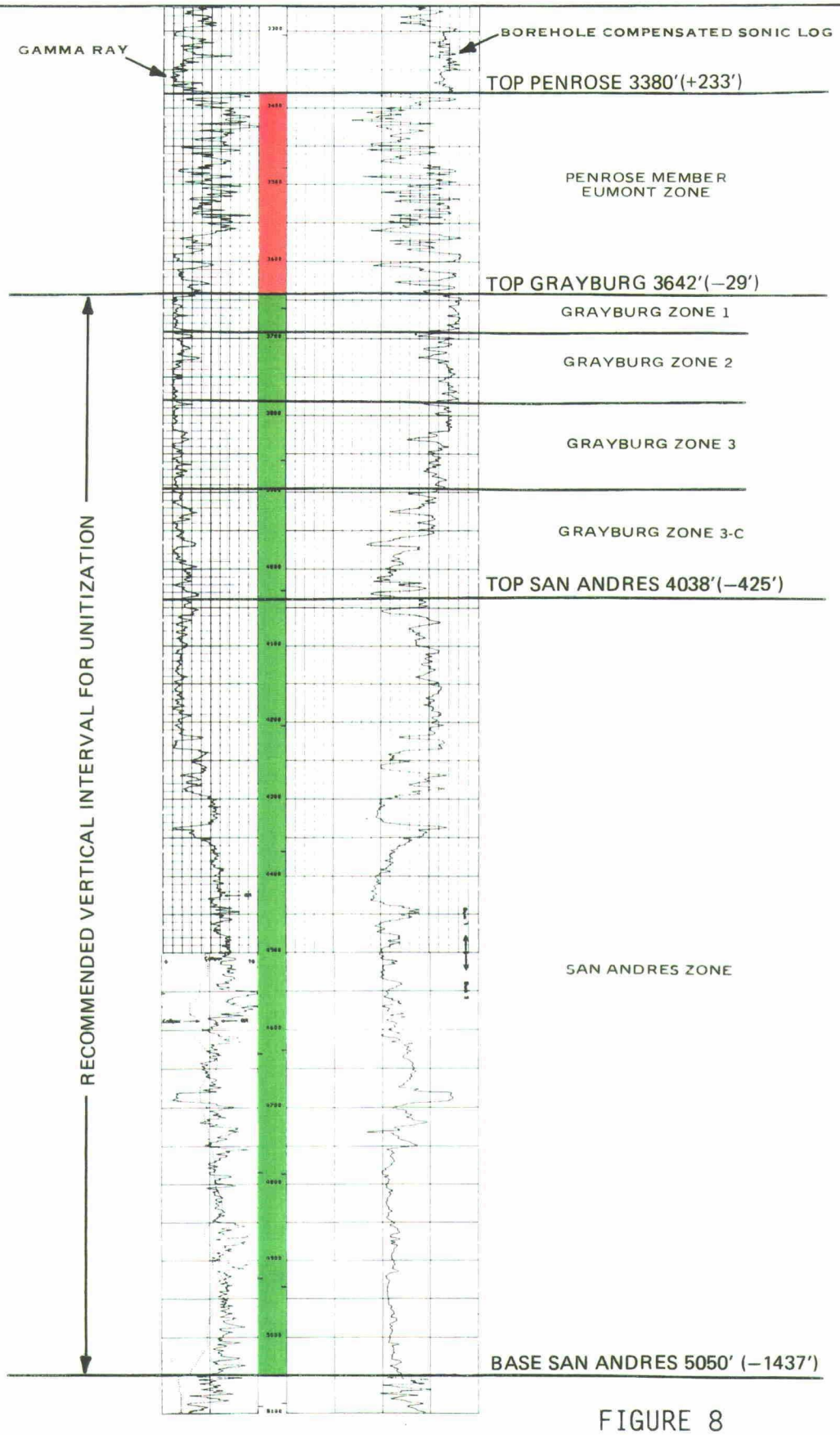


FIGURE 8

R 36 E

R 37 E

T 19 S

T 20 S

LEGEND

- OIL WELL
- GAS WELL
- TEMPORARILY ABANDONED
- PLUGGED & ABANDONED
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

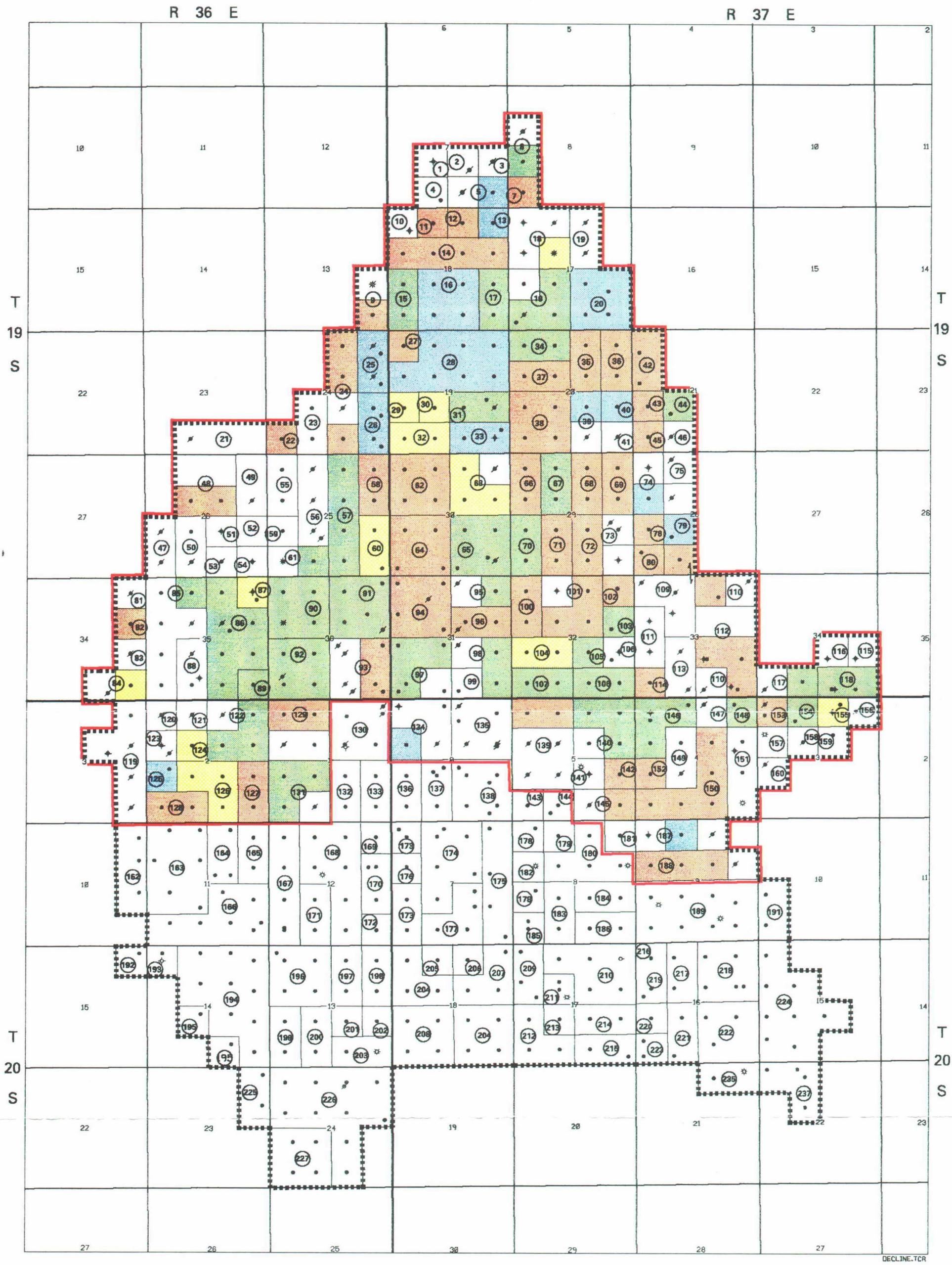
PROPOSED UNIT AREA

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 2



LEGEND

●	OIL WELL		NO DECLINE
☼	GAS WELL		DECLINE < 7%
⸗	TEMPORARILY ABANDONED		DECLINE 7% TO 10%
✦	PLUGGED & ABANDONED		DECLINE > 10%
▬	PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT		

DECLINE FACTORS FOR OIL TRACTS

(GAS WELLS AND INACTIVE WELLS NOT COLORED)

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 3

R 36 E

R 37 E

T 19 S

T 20 S

SPRATIO.TCR

LEGEND

0.6	0.2 – 0.3
0.5 – 0.6	0.1 – 0.2
0.4 – 0.5	0.0 – 0.1
0.3 – 0.4	0.0

PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

DISTRIBUTION OF S/P RATIO

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION FIGURE 4

R 36 E

R 37 E

T 19 S

T 19 S

T 20 S

T 20 S

ULTIMATE.TCR

LEGEND

- 600 – 800 MBO / WELL
- 400 – 600 MBO / WELL
- 200 – 400 MBO / WELL
- 0 – 200 MBO / WELL
- NO PRIMARY RECOVERY
- GREATER THAN 1400 MBO / WELL
- 1200 – 1400 MBO / WELL
- 1000 – 1200 MBO / WELL
- 800 – 1000 MBO / WELL
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

ULTIMATE PRIMARY RECOVERY

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 5

R 36 E

R 37 E

T 19 S

T 19 S

T 20 S

T 20 S

RECOVERY.TCR

LEGEND

- GREATER THAN 500 MBO / WELL
- 400 – 500 MBO / WELL
- 300 – 400 MBO / WELL
- 200 – 300 MBO / WELL
- 100 – 200 MBO / WELL
- 0 – 100 MBO / WELL
- NO SECONDARY RECOVERY
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

POTENTIAL SECONDARY RECOVERY

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 6

R 36 E

R 37 E

T 19 S

T 20 S

WATERFLOOD.TCR

LEGEND

- OIL WELL
- GAS WELL
- TEMPORARILY ABANDONED
- PLUGGED & ABANDONED
- PROPOSED WATER INJECTION WELL (108)
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

WATERFLOOD DEVELOPMENT PLAN

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 7

R 36 E

R 37 E

T 19 S

T 19 S

T 20 S

T 20 S

LEGEND

- INJECTION WELL
- TREATING BATTERIES
- PRODUCING WELL
- TA WELL
- P&A WELL
- GAS WELL
- (38) TRACT NUMBER
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT
- SATELLITE BATTERIES
- SATELLITE HEADERS
- FLOW LINES
- EMULSION LINES

PRODUCTION FACILITIES

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 10

R 36 E

R 37 E

T 19 S

T 20 S

LEGEND

- INJECTION WELL
- INJECTION PLANT
- PRODUCING WELL
- TA WELL
- P&A WELL
- GAS WELL
- (38) TRACT NUMBER
- PROPOSED NORTH MONUMENT GRAYBURG / SAN ANDRES UNIT

INJECTION FACILITIES

NORTH MONUMENT GRAYBURG / SAN ANDRES STUDY AREA

Lea County, New Mexico

AMERADA HESS CORPORATION

FIGURE 11

FIGURE 9

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA

WATERFLOOD PERFORMANCE FORECAST

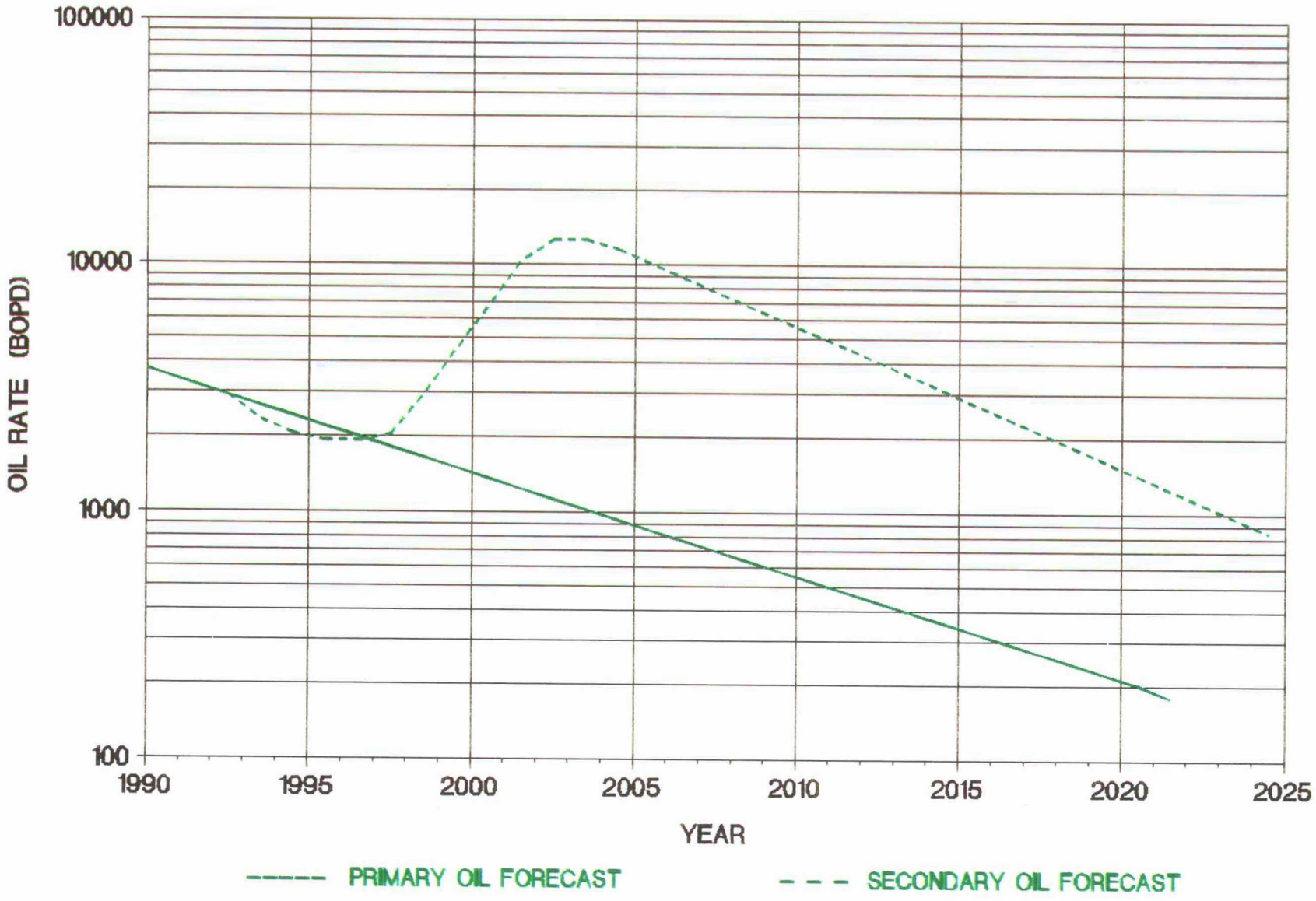
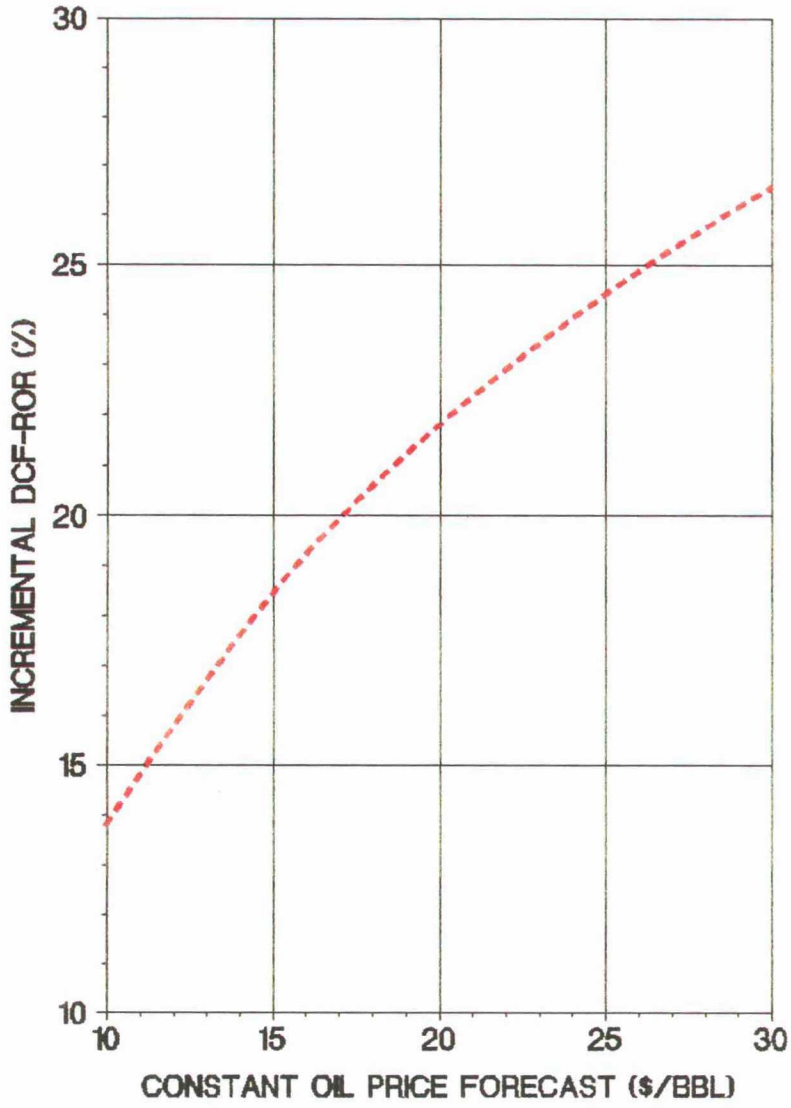


FIGURE 12

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA

ECONOMICS FOR SECONDARY RECOVERY

OIL PRICE SENSITIVITY ANALYSIS



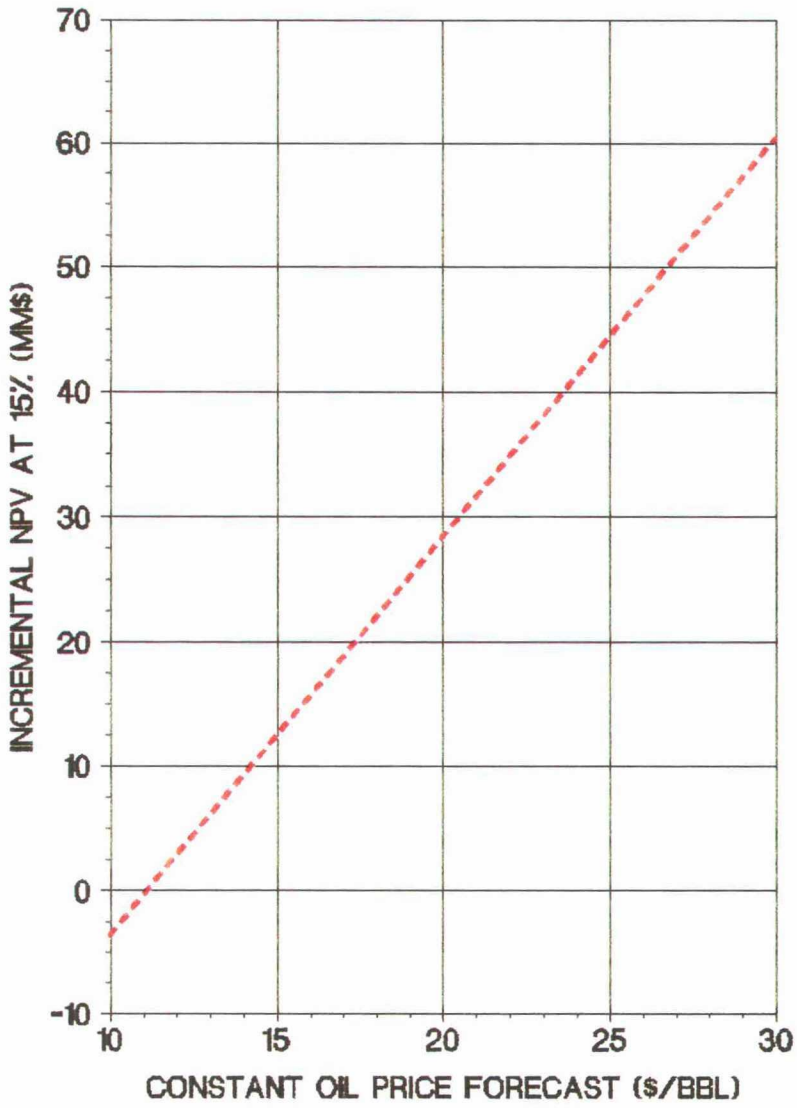


FIGURE 13

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA

ECONOMICS FOR SECONDARY RECOVERY

UNDISCOUNTED CASH FLOW AFIT — CONSTANT OIL PRICE OF $18/BBL

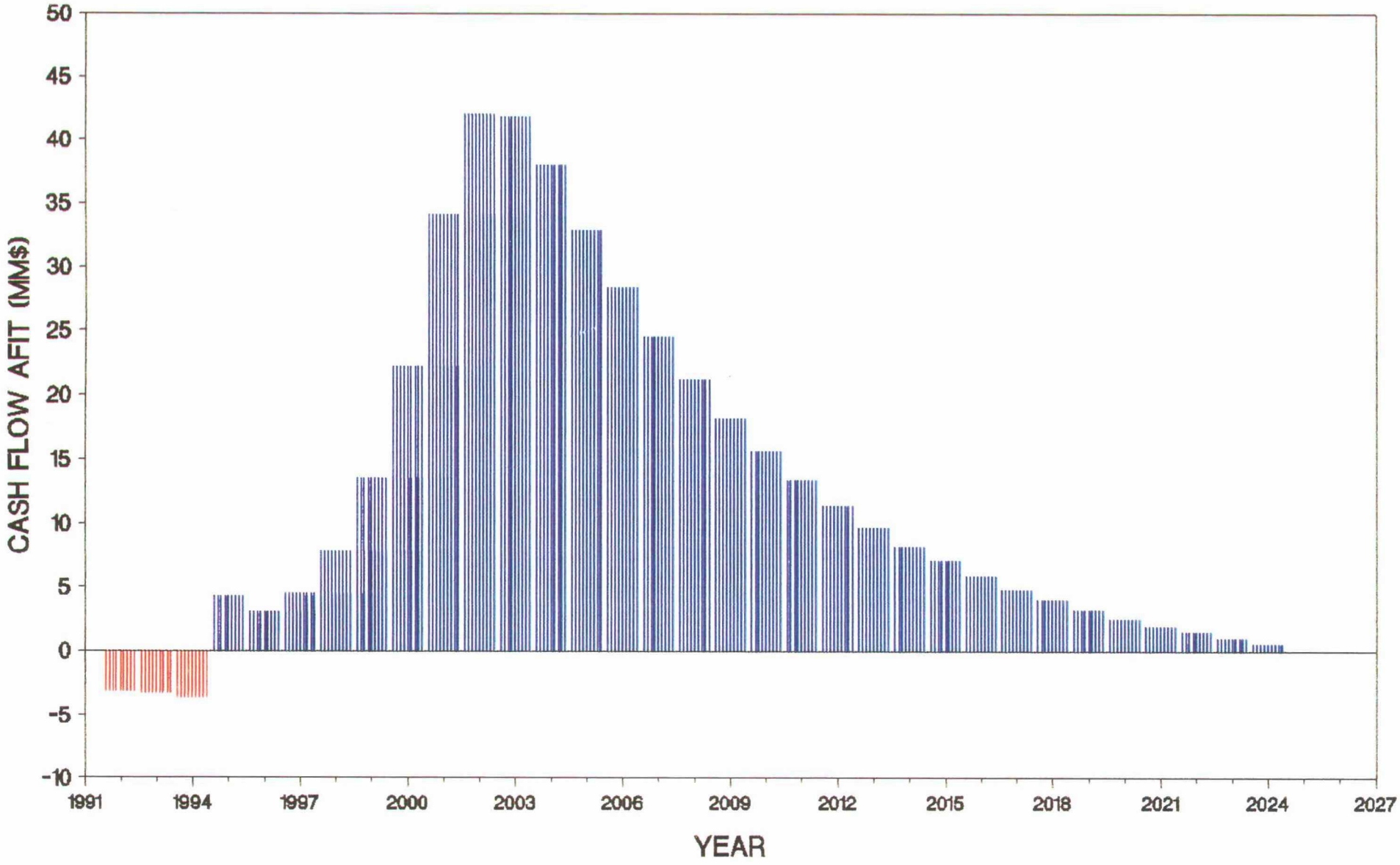


FIGURE 14

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA

ECONOMICS FOR SECONDARY RECOVERY

PRODUCTION SENSITIVITY ANALYSIS -- CONSTANT OIL PRICE OF $18/BBL

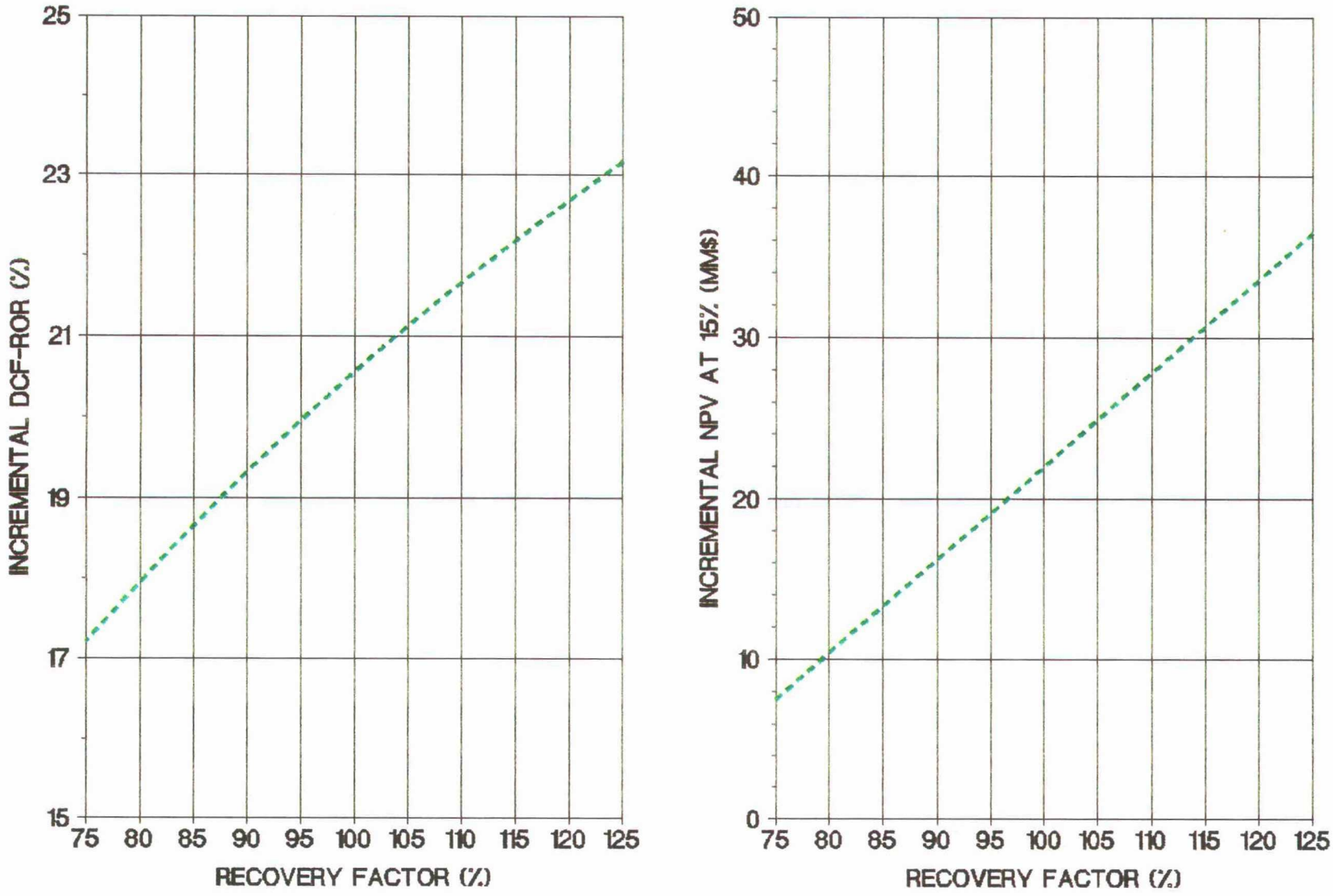
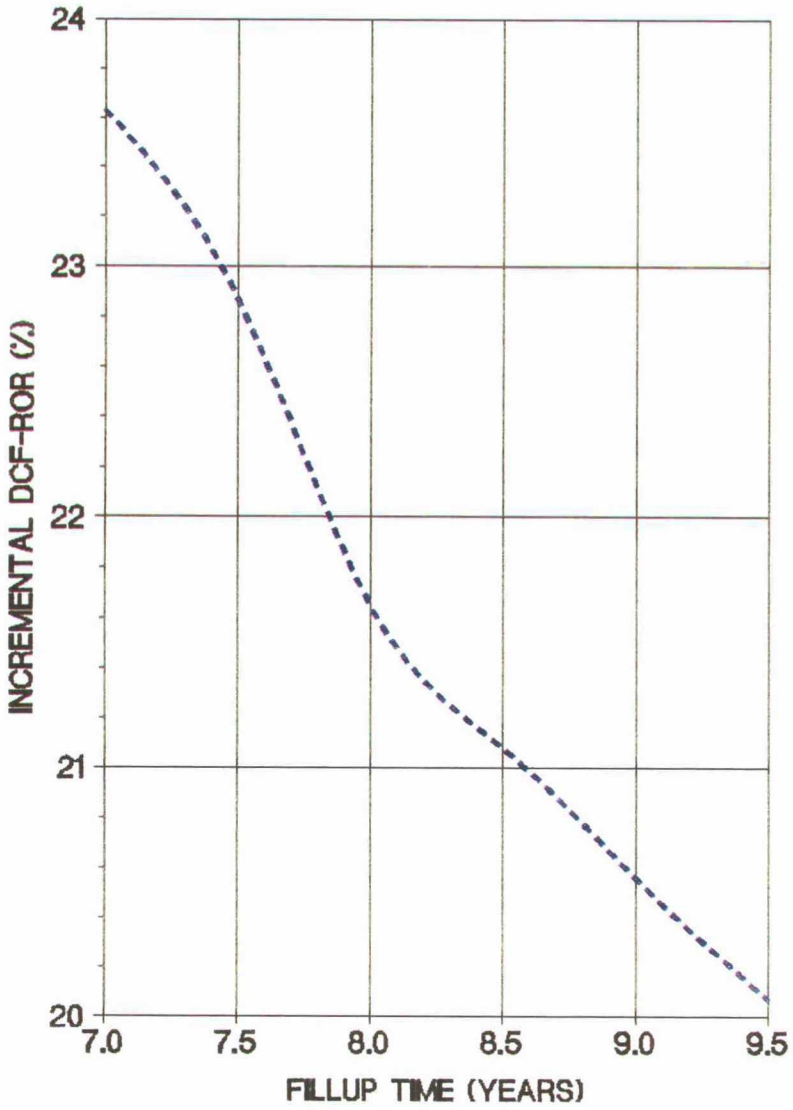


FIGURE 15

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA

ECONOMICS FOR SECONDARY RECOVERY

FILLUP TIME SENSITIVITY ANALYSIS -- CONSTANT OIL PRICE OF $18/BBL



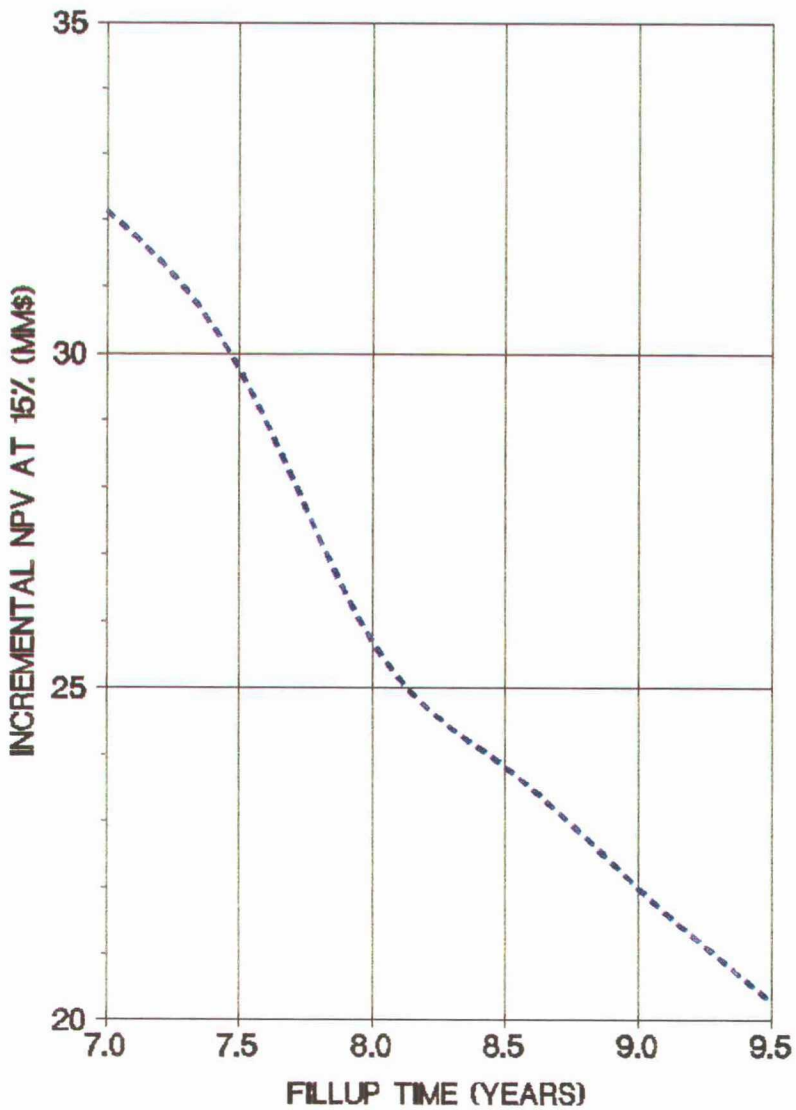


TABLE 1
SECONDARY RECOVERY PROJECTIONS FOR VARIOUS GRAYBURG/SAN ANDRES RESERVOIRS PERMIAN BASIN OF WEST TEXAS AND SOUTHEAST NEW MEXICO

FIELD	STATE, COUNTY	RESERVOIR	NUMBER OF WF PROJECTS	OOIP (MSTBO)	EST RECOVERY (MBO)		S/P RATIO	INCR SEC RECOVERY (% OOIP)	ULT WF RECOVERY (% OOIP)
					PRIMARY	SECONDARY			
Block 31	Texas, Crane	Grayburg	1	10,500	3,250	2,000	0.615	19.0	50.0
North Cowden	Texas, Ector	GBG/SA	6	259,908	44,580	35,517	0.797	13.7	30.8
South Cowden	Texas, Ector	GBG/SA	16	345,388	52,648	57,014	1.083	16.5	31.8
Dune	Texas, Crane	GBG/SA	3	159,964	26,819	9,913	0.370	6.2	23.0
Edwards	Texas, Crane/Ector	GBG/SA	2	35,338	6,462	3,309	0.512	9.4	27.7
Eunice Mnmnt South	New Mexico, Lea	Grayburg	1	671,500	134,300	63,200	0.471	9.4	29.4
Foster	Texas, Ector	Grayburg	17	348,184	73,720	47,031	0.638	13.5*	34.7*
Halff	Texas, Crockett	Grayburg	1	29,000	1,500	1,500	1.000	5.2	10.3
North Hobbs	New Mexico, Lea	Grayburg	1	61,600	11,500	6,600	0.574	10.7	29.4
		Upper SA		171,600	104,300	0	0.000	0.0	60.8
		Lower SA		344,900	89,300	48,600	0.544	14.1	40.0
Howard-Glasscock	Texas, Hwrd/Glsscck	GBG/SA	6	234,240	40,890	30,364	0.743	13.0	30.4
Johnson	Texas, Ector	Grayburg	2	54,873	10,982	7,100	0.647	12.9	33.0
McElroy	Texas, Crane	GBG/SA	5	824,197	160,563	170,202	1.060	20.7	40.1
Means	Texas, Andrews	GBG/SA	1	46,700	8,500	5,000	0.588	10.1	28.9
COMPOSITE RESULTS			62	3,597,892	769,314	487,350	0.633	13.5	34.9

* OOIP for the Foster field represents 16 of the 17 projects indicated.

TABLE 2

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
SECONDARY RECOVERY POTENTIAL AND COMPARISON TO EXISTING PROJECTS
IN WEST TEXAS AND SOUTHEAST NEW MEXICO

WATERFLOOD PROJECT	OOIP	ULTIMATE PRIMARY RECOVERY		POTENTIAL SECONDARY RECOVERY		S/P RATIO	ULTIMATE RECOVERY AFTER WATERFLOODING	
	(MSTB)	(MSTB)	(% OOIP)	(MSTB)	(% OOIP)		(MSTB)	(% OOIP)
COMPOSITE RESULTS FOR 62 EXISTING GRAYBURG/SAN ANDRES WATERFLOODS *	3,597,892	769,314	21.4	487,350	13.5	0.633	1,256,664	34.9
PROPOSED NORTH MONUMENT GRAYBURG/SAN ANDRES UNIT	586,016	168,934	28.8	48,757**	8.3	0.283	217,691	37.1

* Refer To Table 1 For Results Reported By Field
** Study Area Total -- 43,852 MSTB Reserves For Proposed Flood Plan

TABLE 3

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
FORECAST OF REMAINING PRIMARY RECOVERY

YEAR	OIL PRODUCTION STBO	GOR SCF/STB	GAS PRODUCTION MSCF	ACTIVE WELLS
1992	1,065,800	2,958	3,152,140	235
1993	969,075	2,936	2,844,810	232
1994	880,745	2,915	2,567,410	226
1995	800,445	2,896	2,317,750	221
1996	727,810	2,874	2,091,450	215
1997	661,380	2,854	1,887,780	209
1998	601,155	2,834	1,703,820	206
1999	546,405	2,815	1,538,110	202
2000	496,765	2,794	1,388,095	190
2001	451,505	2,774	1,252,680	177
2002	410,625	2,754	1,130,770	172
2003	373,030	2,737	1,020,905	161
2004	339,085	2,717	921,260	156
2005	308,425	2,696	831,470	151
2006	280,320	2,677	750,440	147
2007	254,770	2,659	677,440	140
2008	231,410	2,642	611,375	132
2009	210,605	2,620	551,880	124
2010	191,260	2,605	498,225	116
2011	173,740	2,588	449,680	110
2012	158,045	2,568	405,880	104
2013	143,810	2,546	366,095	101
2014	130,670	2,531	330,690	97
2015	118,625	2,514	298,205	91
2016	108,040	2,493	269,370	85
2017	98,185	2,476	243,090	79
2018	89,060	2,463	219,365	73
2019	81,030	2,441	197,830	67
2020	73,730	2,426	178,850	61
2021	66,450	2,444	162,414	54
TOTAL	11,042,000	----	30,859,279	----

TABLE 4
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
AVERAGE INJECTION RATES FROM START OF FLOOD TO FILLUP

YEAR OF FLOOD	YEAR	ONE-YEAR IMPLEMENTATION			PROPOSED DEVELOPMENT PLAN		
		INJECTION RATE (BWPD)	ACTIVE INJECTORS	RATE/WELL (BWPD)	INJECTION RATE (BWPD)	ACTIVE INJECTORS	RATE/WELL (BWPD)
1	1993	81,000	108	750	27,000	36	750
2	1994	78,699	108	729	53,233	72	739
3	1995	74,268	108	688	77,989	108	722
4	1996	70,087	108	649	74,351	108	688
5	1997	66,141	108	612	70,165	108	650
6	1998	62,417	108	578	66,215	108	613
7	1999	58,903	108	545	62,487	108	579
8	2000	55,587	108	515	58,969	108	546
9	2001				56,163	108	520
CUM INJ AT 50% FILLUP		98,189 MBW IN 3.5 YEARS			97,695 MBW IN 4.5 YEARS		
CUM INJ AT 100% FILLUP		199,692 MBW IN 8.0 YEARS			199,499 MBW IN 9.0 YEARS		

Estimated fillup volume for entire study area is 196 MMBW

- Assumes average gas saturation of 20% (EMSU estimate) over entire 13,480 acres in study area
- With cumulative injection of 98 MMBW in 4.5 years and 199 MMBW in 9 years, results are consistent with response times used in the proposed development plan

Estimated fillup volume for actual waterflood area is 151 MMBW

- Area reduced to 10,280 acres -- 108 injectors & 149 producers at 40 acres/well
- Results suggest that shorter fillup/response times are possible -- using above injection rates
  - First response in 3.75 years with cumulative injection of 78 MMBW
  - Fillup in 7 years with cumulative injection of 157 MMBW

TABLE 5

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
FORECAST OF WATERFLOOD PERFORMANCE

	OIL PRODUCTION	GOR	GAS PRODUCTION	ACTIVE WELL COUNT			
YEAR	STBO	SCF/STB	MSCF	PRIMARY	WF PRODUCER	WF INJECTOR	TOTAL
1992	1,065,800	2,958	3,152,140	235	---	---	235
1993	854,100	2,900	2,476,890	173	39	36	248
1994	748,980	2,900	2,172,042	107	75	72	254
1995	701,165	2,900	2,033,379	40	135	108	283
1996	701,165	2,900	2,033,379	39	146	108	293
1997	740,220	2,745	2,031,904	38	149	108	295
1998	1,071,640	1,860	1,993,250	37	149	108	294
1999	1,625,710	1,200	1,950,852	36	149	108	293
2000	2,466,670	775	1,911,669	34	149	108	291
2001	3,742,710	500	1,871,355	32	149	108	289
2002	4,577,100	400	1,830,840	31	149	108	288
2003	4,565,420	400	1,826,168	29	149	108	286
2004	4,179,980	400	1,671,992	28	149	108	285
2005	3,667,885	400	1,467,154	27	149	108	284
2006	3,218,935	400	1,287,574	26	149	108	283
2007	2,824,735	400	1,129,894	25	148	107	280
2008	2,478,715	400	991,486	24	145	105	274
2009	2,175,035	400	870,014	23	143	103	269
2010	1,908,585	400	763,434	22	140	102	264
2011	1,674,985	400	669,994	21	138	100	259
2012	1,469,855	400	587,942	20	137	99	256
2013	1,289,545	400	515,818	19	135	97	251
2014	1,131,865	400	452,746	18	133	96	247
2015	993,165	400	397,266	17	131	95	243
2016	871,620	400	348,648	16	130	94	240
2017	764,675	400	305,870	15	129	93	237
2018	671,235	400	268,494	14	127	92	233
2019	588,745	400	235,498	13	126	91	230
2020	516,840	400	206,736	12	125	90	227
2021	453,330	400	181,332	11	124	89	224
2022	397,850	400	159,140	0	123	88	211
2023	349,305	400	139,722	0	122	88	210
2024	306,235	400	122,494	0	121	87	208
2025	100,146	400	40,058	0	120	87	207
TOTAL	54,893,946	---	38,097,174	---	---	---	---

TABLE 6A
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
WATERFLOOD SURFACE FACILITIES FOR YEAR 1 -- $8,347,900

INJECTION DISTRIBUTION SYSTEM -- $2,031,100

Trunkline (6,033 feet of 8 inch @ $35.24/ft)	$212,600
Trunkline (16,258 feet of 6 inch @ $28.52/ft)	$463,700
Trunkline (6,660 feet of 4 inch @ $23.35/ft)	$155,500
Injection Line (11,190 feet of 3 inch @ $20.85/ft)	$233,300
Injection Line (24,525 feet of 2 inch @ $15.52/ft)	$380,600
Meter Runs (36)	$270,000
Wellheads (36)	$86,400
Automation (1/2 of Total)	$76,000
Damages and Miscellaneous (1/3 of Total)	$153,000

INJECTION PLANT -- $1,080,000

Pumps and Drivers (2)	$880,000
Tanks (3)	$120,000
Electrification and Automation (1/2 of Total)	$50,000
Miscellaneous (1/2 of Total)	$30,000

PRODUCTION FACILITIES -- $3,736,800

Satellites (5)	$625,000
Production Battery (1)	$750,000
Trunkline (4,553 feet of 10 inch @ $24.00/ft)	$109,300
Trunkline (10,300 feet of 6 inch @ $13.45/ft)	$138,500
Trunkline (22,000 feet of 4 inch @ $9.50/ft)	$209,000
Flowline (74,000 feet of 3 inch @ $8.00/ft)	$592,000
Flowline (49,000 feet of 2 inch @ $7.20/ft)	$353,000
Electrification and Automation (1/3 of Total)	$667,000
Miscellaneous (1/3 of Total)	$293,000

ROADS AND BUILDINGS -- $1,500,000

Construct Road System	$1,000,000
Construct Offices, Garages, and Warehouses	$500,000

TABLE 6B
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
WATERFLOOD SURFACE FACILITIES FOR YEAR 2 -- $7,338,900

INJECTION DISTRIBUTION SYSTEM -- $1,992,100

Trunkline (6,033 feet of 8 inch @ $35.24/ft)	$212,600
Trunkline (16,258 feet of 6 inch @ $28.52/ft)	$463,700
Trunkline (6,660 feet of 4 inch @ $23.35/ft)	$155,500
Injection Line (11,190 feet of 3 inch @ $20.85/ft)	$233,300
Injection Line (24,525 feet of 2 inch @ $15.52/ft)	$380,600
Meter Runs (36)	$270,000
Wellheads (36)	$86,400
Automation (1/4 of Total)	$37,000
Damages and Miscellaneous (1/3 of Total)	$153,000

INJECTION PLANT -- $1,520,000

Pumps and Drivers (3)	$1,320,000
Tanks (3)	$120,000
Electrification and Automation (1/2 of Total)	$50,000
Miscellaneous (1/2 of Total)	$30,000

PRODUCTION FACILITIES -- $3,826,800

Satellites (5) and Satellite Headers (3)	$715,000
Production Battery (1)	$750,000
Trunkline (4,553 feet of 10 inch @ $24.00/ft)	$109,300
Trunkline (10,300 feet of 6 inch @ $13.45/ft)	$138,500
Trunkline (22,000 feet of 4 inch @ $9.50/ft)	$209,000
Flowline (74,000 feet of 3 inch @ $8.00/ft)	$592,000
Flowline (49,000 feet of 2 inch @ $7.20/ft)	$353,000
Electrification and Automation (1/3 of Total)	$667,000
Miscellaneous (1/3 of Total)	$293,000

TABLE 6C
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
WATERFLOOD SURFACE FACILITIES FOR YEAR 3 -- $5,272,100

INJECTION DISTRIBUTION SYSTEM -- $1,993,800

Trunkline (6,033 feet of 8 inch @ $35.24/ft)	$212,600
Trunkline (16,258 feet of 6 inch @ $28.52/ft)	$463,700
Trunkline (6,680 feet of 4 inch @ $23.35/ft)	$156,000
Injection Line (11,195 feet of 3 inch @ $20.85/ft)	$233,400
Injection Line (24,525 feet of 2 inch @ $15.52/ft)	$380,700
Meter Runs (36)	$270,000
Wellheads (36)	$86,400
Automation (1/4 of total)	$37,000
Damages and Miscellaneous (1/3 of total)	$154,000

PRODUCTION FACILITIES -- $3,278,300

Satellites (6) and Satellite Headers (5)	$900,000
Trunkline (4,553 feet of 10 inch @ $24.00/ft)	$109,300
Trunkline (10,400 feet of 6 inch @ $13.45/ft)	$140,000
Trunkline (22,000 feet of 4 inch @ $9.50/ft)	$209,000
Flowline (75,000 feet of 3 inch @ $8.00/ft)	$600,000
Flowline (50,000 feet of 2 inch @ $7.20/ft)	$360,000
Electrification and Automation (1/3 of Total)	$666,000
Miscellaneous (1/3 of Total)	$294,000

TABLE 7
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
DRILLING, WORKOVER, AND CONVERSION SCHEDULE FOR WATERFLOOD DEVELOPMENT PLAN

YEAR	NEW DRILLING	WORKOVER ACTIVITY	CONVERSION ACTIVITY
1992	Drill 2 Water Supply Wells and 5 Injection Wells (Core 4 Wells)	Workover 35 Active Wells	Convert 28 Active & 3 TA Wells
1993	Drill 1 Water Supply Well and 5 Injection Wells (Core 4 Wells)	Workover 35 Active Wells	Convert 28 Active & 3 TA Wells
1994	Drill 1 Water Supply Well, 5 Injection Wells, and 8 Producing Wells (Core 4 Wells)	Workover 24 Active & 4 TA Wells	Convert 29 Active & 2 TA Wells
1995	Drill 8 Producing Wells (Core 4 Wells)	Workover 15 Active & 3 TA Wells	
1996	Drill 8 Producing Wells	Workover 15 Active & 3 TA Wells Replace Artificial Lift on 15 Wells	
1997	Drill 2 Replacement Wells	Workover 15 Active & 3 TA Wells Replace Artificial Lift on 15 Wells	
1998	Drill 2 Replacement Wells	Workover 15 Active Wells Replace Artificial Lift on 15 Wells	
1999	Drill 1 Replacement Well	Replace Artificial Lift on 15 Wells	
2000 - 2014	Drill 1 Replacement Well Per Year		

TABLE 8
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
ASSUMPTIONS FOR ECONOMIC ANALYSIS

Working Interest: 100.0 Percent

Income Interest: 87.5 Percent

Project Evaluation Date: January 1, 1992

Product Prices:

- Oil = $18/BBL, Constant
- Gas = $1.20/MCF, Constant

Operating Expenses:

- Primary = $1,250/Month/Active Well
- Waterflood = $2,550/Month/Producing Well*

Severance/Production Tax:

- Oil = 7.08 Percent Of Revenue
- Gas = 7.08 Percent Of Revenue

Ad Valorem Tax: 0.18 Percent Of Revenue

Federal Tax Rate: 34 Percent

Depreciation: 7 Years Double Declining Balance Switching To Straight Line

IDC Amortization: 70 Percent Immediate, 30 Percent Straight Line Over 5 Years

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* Waterflood Operating Expenses Based on Number of Active Producing Wells

TABLE 9

NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
INVESTMENT AND EXPENSE FOR WATERFLOOD DEVELOPMENT PLAN
(THOUSANDS OF DOLLARS -- 1990 BASIS)

	DRILLING/COMPLETION		WORKOVERS		CONVERSIONS		FACILITIES	TOTAL CAPITAL INV		OPERATING
YEAR	TANGIBLE	INTANGIBLE	TANGIBLE	INTANGIBLE	TANGIBLE	INTANGIBLE	TANGIBLE	TANGIBLE	INTANGIBLE	EXPENSE
1992	1,375	1,020	70	1,470	837	1,488	8,348	10,630	3,978	3,525
1993	875	1,020	70	1,470	837	1,488	7,339	9,121	3,978	3,788
1994	1,571	2,412	168	1,208	837	1,488	5,272	7,848	5,108	3,900
1995	696	1,612	120	780	0	0	0	816	2,392	4,731
1996	696	1,392	990	780	0	0	0	1,686	2,172	5,053
1997	174	348	990	780	0	0	0	1,164	1,128	5,129
1998	174	348	900	630	0	0	0	1,074	978	5,114
1999	87	174	870	0	0	0	0	957	174	5,099
2000	87	174	0	0	0	0	0	87	174	5,069
2001	87	174	0	0	0	0	0	87	174	5,039
2002	87	174	0	0	0	0	0	87	174	5,024
2003	87	174	0	0	0	0	0	87	174	4,994
2004	87	174	0	0	0	0	0	87	174	4,979
2005	87	174	0	0	0	0	0	87	174	4,964
2006	87	174	0	0	0	0	0	87	174	4,949
2007	87	174	0	0	0	0	0	87	174	4,904
2008	87	174	0	0	0	0	0	87	174	4,797
2009	87	174	0	0	0	0	0	87	174	4,721
2010	87	174	0	0	0	0	0	87	174	4,614
2011	87	174	0	0	0	0	0	87	174	4,538
2012	87	174	0	0	0	0	0	87	174	4,492
2013	87	174	0	0	0	0	0	87	174	4,416
2014	87	174	0	0	0	0	0	87	174	4,340
2015	0	0	0	0	0	0	0	0	0	4,264
2016	0	0	0	0	0	0	0	0	0	4,218
2017	0	0	0	0	0	0	0	0	0	4,172
2018	0	0	0	0	0	0	0	0	0	4,096
2019	0	0	0	0	0	0	0	0	0	4,051
2020	0	0	0	0	0	0	0	0	0	4,005
2021	0	0	0	0	0	0	0	0	0	3,959
2022	0	0	0	0	0	0	0	0	0	3,764
2023	0	0	0	0	0	0	0	0	0	3,733
2024	0	0	0	0	0	0	0	0	0	3,703
2025	0	0	0	0	0	0	0	0	0	1,531
TOTALS	6,953	10,936	4,178	7,118	2,511	4,464	20,959	34,601	22,518	149,675

TABLE 10

MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
ECONOMIC SUMMARY FOR WATERFLOOD DEVELOPMENT PLAN
CONSTANT OIL PRICE OF $18/BBL

CASE	OIL RECOVERY (MSTB)	GAS RECOVERY (MMCF)	PROJECT LIFE* (YEARS)	CAPITAL INVESTMENT (MM$)	OPERATING EXPENSE (MM$)	CASH FLOW AFTER TAX (MM$)	NPV @ 15% AFTER TAX (MM$)	DCF-ROR AFTER TAX (PERCENT)
SECONDARY	54,894	38,097	33.4	57.1	149.7	417.2	59.9	39.7
PRIMARY	11,042	30,859	30.0	0.0	65.0	83.4	37.9	--
INCREMENTAL	43,852	7,238	--	57.1	84.7	333.8	22.0	20.6

* FROM THE PROJECT START DATE OF JANUARY 1, 1992

APPENDIX A
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
REMAINING PRIMARY RESERVES BY TRACT ON AUGUST 1, 1989

TRACT NO.	TRACT INFORMATION STATUS	WELLS	EFF. DECLINE PERCENT	SHIFT	PRODUCING RATES INITIAL (7-89)		ABANDONMENT		PRODUCING GOR SCF/STB	REMAINING RESERVES STB	MCF	LIFE YEARS	INDEX CAPPED
1	INACTIVE	0	---		0.0	--	---	--	---	0	0	0	
2	INACTIVE	0	---		0.0	--	---	--	---	0	0	0	
3	INACTIVE	0	---		0.0	--	---	--	---	0	0	0	
4	BELOW EL - OIL	1	---		44.77	BOPM	2.000	BOPD	3,209	0	0	0	
5	OIL DECLINE	1	13.32	*	647.00	BOPM	2.000	BOPD	1,730	49,204	85,123	6.34	
6	HIGH GOR	1	5.77		141.68	BOPM	1.808	BOPD	6,592	17,498	115,347	10.29	
7	OIL DECLINE	1	8.56	*	186.00	BOPM	2.000	BOPD	2,971	16,781	49,856	7.52	
9	HIGH GOR	1	7.92		58.9	BOPM	1.187	BOPD	15,280	3,316	50,668	4.69	
10	INACTIVE	0	---		0.0	--	---	--	---	0	0	0	
11	OIL DECLINE	1	8.85		70.44	BOPM	2.000	BOPD	0	1,245	0	1.47	
12	OIL DECLINE	1	8.93		105.48	BOPM	2.000	BOPD	3,806	5,730	21,808	4.53	
13	HIGH GOR	1	12.85		133.37	BOPM	1.820	BOPD	6,487	6,807	44,157	4.25	
14	OIL DECLINE	4	8.31		1,516.62	BOPM	8.000	BOPD	1,501	176,050	264,251	9.67	
15	OIL DECLINE	2	5.19		1,003.0	BOPM	4.000	BOPD	1,803	134,201	241,965	11.15	#
16	OIL DECLINE	4	12.79		4,735.14	BOPM	8.000	BOPD	1,198	393,758	471,722	6.93	
17	OIL DECLINE	2	6.97		1,121.72	BOPM	4.000	BOPD	1,475	150,086	221,377	11.15	#
18	NO DECLINE	1	---		217.00	BOPM	2.000	BOPD	2,021	29,035	58,679	11.15	
19	OIL DECLINE	3	5.63		1,437.60	BOPM	6.000	BOPD	1,719	192,351	330,651	11.15	#
20	HIGH GOR	4	16.39		652.51	BOPM	6.577	BOPD	8,246	30,323	250,043	3.87	
21	INACTIVE	0	---		0.0	--	---	--	---	0	0	0	
22	HIGH GOR	1	9.34		30.6	BOPM	0.543	BOPD	45,267	1,720	77,859	4.69	
23	GAS DECLINE	2	11.75		2,604.88	MCFM	20.000	MCFD	107,639	1,781	191,682	6.13	
24	HIGH GOR	3	9.46		254.7	BOPM	1.897	BOPD	37,435	23,783	890,317	7.78	
25	OIL DECLINE	2	15.25		1,047.30	BOPM	4.000	BOPD	1,624	67,126	109,013	5.34	
26	OIL DECLINE	4	11.50		2,910.7	BOPM	8.000	BOPD	1,879	261,893	492,097	7.50	
27	OIL DECLINE	1	7.91		475.0	BOPM	2.000	BOPD	3,979	60,299	239,930	10.58	
28	OIL DECLINE	7	12.20		7,778.96	BOPM	14.000	BOPD	1,039	678,269	704,721	7.27	
29	NO DECLINE	1	---		2,435.00	BOPM	2.000	BOPD	449	325,803	146,286	11.15	
30	NO DECLINE	1	---		2,349.92	BOPM	2.000	BOPD	786	314,419	247,134	11.15	
31	OIL DECLINE	2	4.83		1,962.95	BOPM	4.000	BOPD	1,406	262,643	369,276	11.15	#

APPENDIX A (CONTINUED)

TRACT NO.	TRACT INFORMATION STATUS	WELLS	EFF. DECLINE PERCENT	SHIFT	PRODUCING RATES INITIAL (7-89)	ABANDONMENT	PRODUCING GOR SCF/STB	REMAINING RESERVES STB	MCF	LIFE YEARS	INDEX CAPPED
32	NO DECLINE	2	---		4,733.50 BOPM	4.000 BOPD	306	633,342	193,803	11.15	
33	OIL DECLINE	2	10.29		2,969.44 BOPM	4.000 BOPD	1,276	314,782	401,662	8.83	
34	OIL DECLINE	2	4.35	*	386.00 BOPM	4.000 BOPD	1,842	51,647	95,133	11.15	#
35	HIGH GOR	2	9.73		236.06 BOPM	3.264 BOPD	8,380	16,032	134,348	5.66	
36	HIGH GOR	2	9.11		71.98 BOPM	1.173 BOPD	41,130	4,561	187,594	5.28	
37	OIL DECLINE	2	9.98	*	1,132.00 BOPM	4.000 BOPD	1,426	115,401	164,562	8.50	
38	OIL DECLINE	4	7.34	*	1,938.00 BOPM	8.000 BOPD	1,806	259,304	468,304	11.15	#
39	HIGH GOR	1	11.23	*	90.27 BOPM	0.851 BOPD	25,242	6,492	163,871	5.99	
40	HIGH GOR	1	14.75		416.52 BOPM	1.734 BOPD	7,299	27,347	199,606	5.47	
41	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
42	HIGH GOR	2	7.20		67.85 BOPM	0.968 BOPD	52,015	6,167	320,777	7.57	
43	HIGH GOR	1	8.02		87.28 BOPM	1.017 BOPD	19,485	8,091	157,653	7.73	
44	HIGH GOR	1	4.08		95.1 BOPM	1.902 BOPD	5,769	10,731	61,907	9.40	
45	OIL DECLINE	1	7.10		116.84 BOPM	2.000 BOPD	1,111	9,121	10,133	6.51	
46	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
47	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
48	OIL DECLINE	2	8.10		353.7 BOPM	4.000 BOPD	783	32,962	25,809	7.77	
49	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
50	BELOW EL - OIL	1	---		30.39 BOPM	2.000 BOPD	2,072	0	0	0	
51	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
52	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
53	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
54	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
55	GAS DECLINE	2	16.39		2,155.54 MCFM	20.000 MCFD	112,211	924	103,687	4.01	
56	OIL DECLINE	1	5.50		1,110.0 BOPM	2.000 BOPD	744	148,518	110,497	11.15	#
57	OIL DECLINE	4	5.97		1,789.74 BOPM	8.000 BOPD	1,947	239,467	466,243	11.15	#
58	OIL DECLINE	2	8.38	*	2,404.00 BOPM	4.000 BOPD	589	312,832	184,258	10.84	
59	BELOW EL - GAS	1	---		30.08 MCFM	10.000 MCFD	---	0	0	0	
60	NO DECLINE	2	---		3,042.17 BOPM	4.000 BOPD	833	407,042	339,066	11.15	
61	GAS DECLINE	1	15.76		3,166.9 MCFM	10.000 MCFD	108,731	1,842	200,256	5.27	
62	OIL DECLINE	4	8.58	*	9,060.00 BOPM	8.000 BOPD	378	1,178,706	445,551	10.84	
63	NO DECLINE	3	---		526.08 BOPM	5.736 BOPD	5,690	70,390	400,516	11.15	
64	OIL DECLINE	4	7.42		3,297.2 BOPM	8.000 BOPD	707	441,165	311,904	11.15	#

APPENDIX A (CONTINUED)

TRACT NO.	TRACT INFORMATION STATUS	WELLS	EFF. DECLINE PERCENT	SHIFT	PRODUCING RATES INITIAL (7-89)	ABANDONMENT	PRODUCING GOR SCF/STB	REMAINING RESERVES STB	MCF	LIFE YEARS	INDEX CAPPED
65	OIL DECLINE	4	5.50		2,709.2 BOPM	8.000 BOPD	1,282	362,491	464,713	11.15	#
66	OIL DECLINE	2	9.96	*	253.00 BOPM	4.000 BOPD	757	15,025	11,374	4.95	
67	OIL DECLINE	2	5.29		1,035.25 BOPM	4.000 BOPD	1,502	138,516	208,052	11.15	#
68	HIGH GOR	2	7.62	*	326.00 BOPM	3.969 BOPD	5,116	31,083	159,021	7.95	
69	OIL DECLINE	2	8.80		537.87 BOPM	4.000 BOPD	3,272	54,239	177,470	8.40	
70	OIL DECLINE	2	6.73		1,157.3 BOPM	4.000 BOPD	1,256	154,847	194,488	11.15	#
71	OIL DECLINE	2	9.26		641.8 BOPM	4.000 BOPD	2,773	64,224	178,093	8.34	
72	HIGH GOR	2	8.46		313.1 BOPM	2.872 BOPD	10,890	30,660	333,887	8.16	
73	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
74	HIGH GOR	1	11.86		49.89 BOPM	0.758 BOPD	29,573	2,550	75,411	4.26	
75	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
78	HIGH GOR	1	7.02		122.7 BOPM	0.929 BOPD	22,297	15,568	347,120	10.57	
79	HIGH GOR	1	12.73		80.86 BOPM	1.777 BOPD	6,885	2,362	16,262	2.43	
80	HIGH GOR	1	7.57		69.15 BOPM	1.658 BOPD	8,099	2,853	23,106	3.44	
81	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
82	OIL DECLINE	1	7.27		226.84 BOPM	2.000 BOPD	4,955	26,382	130,723	9.69	
83	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
84	NO DECLINE	1	---		145.67 BOPM	0.571 BOPD	42,575	19,491	829,814	11.15	
85-G	GAS DECLINE	4	7.49		15,743.09 MCFM	40.000 MCFD	155,215	13,571	2,106,425	11.15	#
85-O	HIGH GOR	1	6.79	*	179.00 BOPM	0.425 BOPD	60,520	23,950	1,449,466	11.15	#
86	HIGH GOR	6	5.29		1,123.00 BOPM	10.841 BOPD	6,603	150,257	992,150	11.15	#
87	NO DECLINE	1	---		103.83 BOPM	0.282 BOPD	96,398	13,892	1,339,205	11.15	
88	GAS DECLINE	1	10.73		1,046.30 MCFM	10.000 MCFD	---	0	78,442	6.25	
89	OIL DECLINE	1	3.71		658.84 BOPM	2.000 BOPD	332	88,153	29,267	11.15	#
90	OIL DECLINE	4	5.22	*	6,516.17 BOPM	8.000 BOPD	1,509	871,864	1,315,642	11.15	#
91	OIL DECLINE	4	5.38		4,366.1 BOPM	8.000 BOPD	493	584,184	288,003	11.15	#
92	OIL DECLINE	4	6.26		2,270.11 BOPM	8.000 BOPD	852	303,741	258,787	11.15	#
93	OIL DECLINE	3	8.52		683.38 BOPM	6.000 BOPD	885	67,518	59,753	8.23	
94	HIGH GOR	4	8.82	*	1,863.00 BOPM	7.131 BOPD	6,827	213,871	1,460,097	9.57	
95	OIL DECLINE	1	6.10		1,271.75 BOPM	2.000 BOPD	423	170,160	71,978	11.15	#
96	OIL DECLINE	2	8.28	*	1,293.00 BOPM	4.000 BOPD	1,646	162,556	267,567	10.48	
97-G	GAS DECLINE	1	3.65		10,222.4 MCFM	10.000 MCFD	---	0	1,367,757	11.15	#
97-O	OIL DECLINE	3	6.19		433.40 BOPM	6.000 BOPD	3,946	47,088	185,809	9.05	

APPENDIX A (CONTINUED)

TRACT NO.	TRACT INFORMATION STATUS	WELLS	EFF. DECLINE PERCENT	SHIFT	PRODUCING RATES INITIAL (7-89)	ABANDONMENT	PRODUCING GOR SCF/STB	REMAINING RESERVES STB	MCF	LIFE YEARS	INDEX CAPPED
98	OIL DECLINE	2	5.07		1,206.6 BOPM	4.000 BOPD	533	161,443	86,049	11.15	#
99	GAS DECLINE	1	14.74		9,693.65 MCFM	10.000 MCFD	---	0	706,801	6.08	
100	OIL DECLINE	2	7.82	*	1,682.00 BOPM	4.000 BOPD	2,570	225,052	578,383	11.15	#
101	HIGH GOR	3	7.60		874.3 BOPM	5.214 BOPD	7,261	108,651	788,915	10.36	
102	OIL DECLINE	1	7.90		62.4 BOPM	2.000 BOPD	4,874	235	1,145	0.31	
103	HIGH GOR	1	5.79		61.37 BOPM	1.729 BOPD	7,350	1,768	12,995	2.40	
104	NO DECLINE	2	---		594.40 BOPM	4.000 BOPD	2,624	79,531	208,689	11.15	
105	OIL DECLINE	1	6.72		337.5 BOPM	2.000 BOPD	2,055	45,158	92,799	11.15	#
106	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
107	HIGH GOR	2	4.68		931.5 BOPM	3.662 BOPD	6,384	124,635	795,668	11.15	#
108	OIL DECLINE	2	5.06		599.7 BOPM	4.000 BOPD	699	80,240	56,088	11.15	#
109	OIL DECLINE	1	8.89		114.6 BOPM	2.000 BOPD	3,995	6,924	27,661	5.04	
110	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
111	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
112	HIGH GOR	4	8.09		78.0 BOPM	2.278 BOPD	42,689	1,242	53,020	1.33	
113	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
114	HIGH GOR	1	7.22		76.8 BOPM	0.959 BOPD	21,296	7,630	162,488	8.27	
115	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
116	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
117	HIGH GOR	1	4.95		123.9 BOPM	0.806 BOPD	27,218	16,578	451,215	11.15	#
118	HIGH GOR	2	5.19		73.1 BOPM	1.054 BOPD	46,909	9,232	433,064	10.52	
119	SHUT IN - OIL	1	---		0.0 BOPM	1.460 BOPD	10,547	0	0	0	
120	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
121	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
122	OIL DECLINE	3	5.20	*	3,387.00 BOPM	6.000 BOPD	601	453,181	272,362	11.15	#
123	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
124	NO DECLINE	1	---		313.50 BOPM	2.000 BOPD	3,650	41,946	153,104	11.15	
125	OIL DECLINE	1	14.12		91.2 BOPM	2.000 BOPD	726	2,391	1,736	2.19	
126	NO DECLINE	3	---		2,736.67 BOPM	6.000 BOPD	1,249	366,166	457,342	11.15	
127	OIL DECLINE	2	7.67	*	941.00 BOPM	4.000 BOPD	587	123,202	72,320	10.91	
128	OIL DECLINE	2	7.75		1,354.1 BOPM	4.000 BOPD	1,560	181,179	282,639	11.15	#
129-G	BELOW EL - GAS	1	---		200.00 MCFM	10.000 MCFD	---	0	0	0	
129-O	OIL DECLINE	2	7.22	*	1,146.00 BOPM	4.000 BOPD	1,128	153,335	172,962	11.15	#

APPENDIX A (CONTINUED)

TRACT	TRACT INFORMATION		EFF. DECLINE		PRODUCING RATES		PRODUCING GOR	REMAINING RESERVES		LIFE INDEX	
NO.	STATUS	WELLS	PERCENT	SHIFT	INITIAL (7-89)	ABANDONMENT	SCF/STB	STB	MCF	YEARS	CAPPED
131	OIL DECLINE	3	6.23	*	1,685.00 BOPM	6.000 BOPD	1,525	225,453	343,816	11.15	#
134-G	GAS DECLINE	1	27.39		5,115.62 MCFM	10.000 MCFD	2,497,207	72	180,360	2.94	
134-O	OIL DECLINE	1	13.22	*	172.00 BOPM	2.000 BOPD	2,708	9,427	25,528	4.57	
135	NO DECLINE	2	---		19,464.25 MCFM	20.000 MCFD	---	0	2,604,317	11.15	
139	OIL DECLINE	2	8.01		1,079.44 BOPM	4.000 BOPD	1,017	137,687	140,028	10.63	
140-G	NO DECLINE	1	---		7,984.83 MCFM	10.000 MCFD	---	0	1,068,370	11.15	
140-O	OIL DECLINE	3	5.64		373.9 BOPM	6.000 BOPD	2,450	39,567	96,939	8.82	
141	NO DECLINE	1	---		10,950.00 MCFM	10.000 MCFD	---	0	1,465,110	11.15	
142	HIGH GOR	1	9.87	*	173.00 BOPM	1.746 BOPD	7,179	13,835	99,321	6.66	
145	OIL DECLINE	1	7.05		250.0 BOPM	2.000 BOPD	1,385	31,069	43,031	10.36	
146	OIL DECLINE	3	4.87		1,353.3 BOPM	6.000 BOPD	862	181,072	156,084	11.15	#
147	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
148	HIGH GOR	1	6.70		31.2 BOPM	0.565 BOPD	43,129	2,425	104,588	6.48	
149	BELOW EL - GAS	1	---		259.5 MCFM	10.000 MCFD	---	0	0	0	
150	OIL DECLINE	5	7.23		406.7 BOPM	10.000 BOPD	1,429	16,401	23,437	3.36	
151	GAS DECLINE	3	6.36		5,275.8 MCFM	30.000 MCFD	665,543	1,061	705,902	11.15	#
152	HIGH GOR	1	7.39		136.9 BOPM	1.333 BOPD	12,511	15,053	188,328	9.17	
153	HIGH GOR	1	8.01		178.91 BOPM	1.414 BOPD	11,223	19,528	219,163	9.10	
154	HIGH GOR	1	6.91		52.8 BOPM	0.694 BOPD	33,218	5,310	176,388	8.38	
155	NO DECLINE	1	---		53.17 BOPM	0.798 BOPD	27,597	7,114	196,329	11.15	
156	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
157	GAS DECLINE	1	10.63		853.9 MCFM	10.000 MCFD	---	0	58,686	5.73	
158	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
159	GAS DECLINE	1	5.78		1,202.8 MCFM	10.000 MCFD	591,583	272	160,935	11.15	#
160	INACTIVE	0	---		0.0 --	--- --	---	0	0	0	
181	SHUT IN - OIL	1	---		0.0 BOPM	2.000 BOPD	1,463	0	0	0	
187	OIL DECLINE	1	11.18		176.6 BOPM	2.000 BOPD	204	11,719	2,391	5.53	
188	HIGH GOR	3	8.21		467.2 BOPM	5.944 BOPD	5,142	40,121	206,302	7.16	
---	---	248	---	---	---	---	---	14,078,988	39,373,782	---	---

* HISTORICAL DECLINE APPLIED TO RATE ON 7-89
\# RESERVES FROM DECLINE CURVE ANALYSIS LIMITED BY MAXIMUM LIFE INDEX OF 11.15 YEARS

APPENDIX B
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
ASSESSMENT OF S/P RATIO BY WELL -- INCLUDES WELLS OUTSIDE CURRENT STUDY AREA

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
101	3	0	0	0	52	116	32	0	.6	07-38	-111'/-364'	TA 3-39 @ 10 BOPD
201	8	1	0	0	33	110	57	0	.6	12-57	-237'/-353'	Frac; PB -237'/-295' & Frac; TA 11-63 @ 10 BFPD
301	107	34	0	0	59	108	33	0	.6	01-38	-127'/-330'	PB -274' & Frac; TA 11-76 @ 7 BFPD, 18200 GOR
401	53	36	0	0	66	112	22	0	.6	02-57	-198'/-306'	Frac; DD -327' On 8-57; 3 BFPD, 2270 GOR
501	495	3419	0	0	16	104	80	0	.1	10-37	-141'/-325'	PB -280'; PB -259' On 7-80; 815 BFPD, 97% WC
502	205	92	0	0	28	108	64	0	.5	01-38	-131'/-325'	No PB?, WC Varies; TA 9-82 @ 4 BFPD, 12400 GOR
601	352	24	0	0	29	105	66	0	.6	10-37	-124'/-325'	No Major WO; 10 BFPD, 51% WC, 6755 GOR
602	2	3	0	0	62	111	27	0	.6	06-51	-145'/-325'	4 BFPD On 2-55, PB -290' & Frac, TA 2-55
701	379	7	0	0	60	100	40	0	.6	09-37	-149'/-325'	PB -273' & Frac 5-55; 8 BFPD, 13% WC, 2820 GOR
901	181	142	0	0	35	88	77	0	.5	12-35	-58'/-371'	DD -381'; Frac; 9 BFPD, 81% WC, 14260 GOR
902	72	225	0	0	60	99	41	0	.3	12-37	-101'/-343'	No PB; TA 6-50 @ 30 BFPD, 49% WC
1001	43	19	0	0	74	111	15	0	.6	08-55	-184'/-314'	2 Frac; TA 7-74 @ 4 BFPD, 51% WC, 2650 GOR
1101	179	29	0	0	47	115	38	0	.6	12-37	-110'/-325'	PB -270' & Frac; 4 BFPD, 33% WC, ? GOR
1201	479	102	0	0	32	107	61	0	.5	08-37	-162'/-317'	No PB; 14 BFPD, 72% WC, 3480 GOR
1301	548	292	0	0	0	100	100	0	.25	07-37	-148'/-318'	WC @ 49%, PB -250'; 23 BFPD, 80% WC, 5720 GOR
1401	548	1102	0	0	0	76	124	0	.1	06-37	-168'/-320'	No PB?; 75 BFPD, 85% WC, 670 GOR
1402	903	579	0	0	0	80	120	0	.1	08-37	-169'/-325'	No PB; 156 BFPD, 80% WC, 990 GOR
1403	375	20	0	0	30	112	58	0	.6	11-37	-141'/-325'	No PB; 5 BFPD, 20% WC, 5775 GOR
1404	428	44	0	0	56	101	43	0	.6	05-38	-122'/-325'	No PB; Frac On 5-59; 6 BFPD, 31% WC, 3700 GOR
1501	550	74	0	0	15	88	97	0	.6	09-35	-121'/-335'	Run Lnr, Frac -194'/-309'; 15 BFPD, 3580 GOR
1502	662	62	0	0	36	96	68	0	.6	10-37	-232'/-331'	No PB; 36 BFPD, 27% WC, 1290 GOR
1601	969	312	0	0	0	86	114	0	.3	07-35	-95'/-280'	No PB?; 43 BFPD, 50% WC, 2840 GOR
1602	1085	1733	0	0	0	42	158	0	.05	04-36	-165'/-290'	PB -225' On 4-82; 304 BFPD, 84% WC, 546 GOR
1603	957	367	0	0	0	44	156	0	.05	06-37	-164'/-304'	PB -208'/-242'; 337 BFPD, 76% WC, 353 GOR
1604	800	223	0	0	4	102	94	0	.4	08-37	-162'/-322'	Mult PB -260'; 54 BFPD, 82% WC, 7860 GOR
1701	771	273	0	0	0	90	110	0	.2	06-36	-159'/-309'	97% WC, PB -243'; 30 BFPD, 38% WC, 2385 GOR
1702	680	279	0	0	0	80	120	0	.15	04-37	-170'/-320'	PB -245'; 83 BFPD, 76% WC, 407 GOR
1801	493	708	0	0	14	100	86	0	.1	05-37	-169'/-318'	Set Plug -238'; TA 2-75 @ 326 BFPD, 99% WC
1802	447	603	0	0	46	82	72	0	.2	07-37	-181'/-314'	PB -260' On 3-63; TA 2-67, Test 100% Water
1803	373	131	0	0	0	79	121	0	.5	07-37	-188'/-314'	No PB; 11 BFPD, 34% WC, 2000 GOR
1804	410	120	0	0	16	94	90	0	.3	09-37	-185'/-327'	PB -285'; PB -236' On 10-65; TA 10-66 @ 6 BFPD
1901	332	142	0	0	14	97	89	0	.1	08-36	-154'/-296'	PB -258'; TA 4-61 & Replaced By #1907
1907	148	676	0	0	5	94	101	0	-	12-63	-195'/-281'	PB -226' On 1-86; 116 BFPD, 78% WC, 330 GOR
1902	490	194	0	0	0	51	149	0	.45	10-36	-155'/-305'	No PB?; 17 BFPD, 48% WC, 2650 GOR
1903	503	1178	0	0	16	102	82	0	.1	03-37	-145'/-316'	No PB; SI 3-86 @ 218 BFPD, 99% WC, 10800 GOR
1904	509	2723	0	0	0	46	154	0	.05	06-37	-137'/-300'	PB -236' On 2-83; 597 BFPD, 98% WC, 3465 GOR
1905	240	858	0	0	31	94	75	0	.1	09-37	-136'/-330'	TA 9-53 @ 99% WC; PB -248, Test Water, TA 5-56
1906	268	737	0	0	44	104	52	0	.25	01-38	-110'/-330'	TA 1961/75; PB-216' On 4-83; TA 6-83 @ 7 BFPD

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 12-89 (MBO)	PROD 87-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
2001	505	1154	0	0	0	80	120	0	.1	01-37	-138'/-325'	PB -307'?; 511 BFPD, 97% WC, 1920 GOR
2002	315	394	0	0	7	92	101	0	.3	07-37	-59'/-324'	No PB; 62 BFPD, 95% WC, 53000 GOR
2003	157	41	0	0	24	100	76	0	.6	04-40	-51'/-321'	Frac On 7-56; 3 BFPD, 36% WC, 10800 GOR
2004	37	43	0	0	42	108	50	0	.6	05-72	-176'/-289'	Frac On 6-72; 4 BFPD, 44% WC, 6100 GOR
2102	15	2	53	35	85	27	0	0	.6	10-37	+12'/-334'	TA 1942/54; TA 5-55 @ 2 BFPD, High GOR
2201	81	7	0	7	80	92	21	0	.6	07-37	-131'/-351'	Frac On 9-74; 1 BOPD, High GOR
2301	134	9	0	0	65	95	40	0	.6	06-36	-28'/-328'	No Major WO; < 1 BOPD, High GOR
2302	113	87	0	0	45	97	58	0	.6	02-37	-87'/-332'	PB -308' On 9-39; < 1 BFPD, High GOR
2401	453	27	0	0	4	94	102	0	.6	01-36	-116'/-326'	TA 1977/81; SI 8-87 @ 2 BFPD, High GOR
2402	401	17	0	0	22	95	83	0	.6	03-38	-151'/-340'	PB -301' & Frac 12-72; 2 BOPD, High GOR
2403	373	35	0	0	9	94	97	0	.6	06-36	+181'/-317'	Run Lnr 10-52, Pf -131'/-316'; 3 BOPD, High GOR
2404	442	29	0	0	7	97	96	0	.6	06-36	-137'/-309'	No Major WO; 5 BFPD, High GOR
2501	202	10	0	0	0	67	133	0	.5	12-35	-130'/-355'	TA 4-55 @ 9 BFPD; Replaced By #2501Y
2501Y	468	555	0	0	0	54	146	0	-	04-55	-206'/-280'	Add Pf To -161'; 2 Frac; 85 BFPD, 79% WC
2502	223	188	0	0	0	31	145	24	.2	02-36	-76'/-334'	PB -291' On 2-42; TA 1-55; Replaced By #2502Y
2502Y	498	146	0	0	0	36	145	19	-	01-55	-200'/-260'	PB -143'/-228' 10-72; 83 BFPD, 80% WC, 1450 GOR
2601	965	512	0	0	0	21	150	29	.2	12-35	-199'/-319'	PB in 1989?; 53 BFPD, 67% WC, 2520 GOR
2604	10	3	-	-	-	-	-	-	-	10-86	-179'/-246'	Supplement to #2601; 9 BFPD, 14% WC, 5200 GOR
2602	851	204	0	0	0	53	147	0	.2	03-36	-179'/-319'	PB in 1982?; 25 BFPD, 13% WC, 1450 GOR
2603	56	121	-	-	-	-	-	-	-	08-86	-204'/-231'	Supplement to #2602; 204 BFPD, 77% WC, 1050 GOR
2701	597	71	0	0	0	55	145	0	.5	04-38	-75'/-277'	PB in 1982?; 20 BFPD, 17% WC, 3500 GOR
2801	1064	481	0	0	0	54	146	0	.05	10-35	-73'/-283'	PB -216' On 10-77; 106 BFPD, 37% WC, 486 GOR
2802	742	774	0	0	0	53	147	0	.1	11-35	-90'/-331'	PB -319' On 1-61; 125 BFPD, 96% WC, 1800 GOR
2803	864	1049	0	0	0	25	159	16	.05	02-36	-115'/-304'	PB -206' On 6-83; Top Allowable, 550 GOR
2804	953	1591	0	0	0	61	139	0	.05	03-38	-96'/-322'	Mult PB -236'; 121 BFPD, 88% WC, 5700 GOR
2805	953	898	0	0	9	88	103	0	.08	08-36	-143'/-327'	No PB; 206 BFPD, 89% WC, 1540 GOR
2806	1062	733	0	0	0	81	119	0	.05	04-38	-116'/-323'	Mult PB -200'; 59 BFPD, 20% WC, 1200 GOR
2807	940	442	0	0	0	85	115	0	.1	06-36	-118'/-320'	PB -220'; CO -245'; 92 BFPD, 73% WC, 1060 GOR
2901	983	2617	0	0	0	57	143	0	.08	02-36	-151'/-294'	PB -223'; CO -241'; 896 BFPD, 92% WC, 425 GOR
3001	1129	34	0	0	0	22	161	17	.05	12-35	-85'/-288'	PB -200' On 4-77; 94 BFPD, 25% WC, 680 GOR
3101	1117	2527	0	0	0	55	145	0	.05	03-36	-81'/-341'	PB -281' On 4-81; 942 BFPD, 93% WC, 1490 GOR
3102	635	5177	0	0	0	90	110	0	.15	05-36	-73'/-335'	Lnr PB -223'/-275'; TA 6-77; Replaced By #3103
3103	12	14	0	0	20	93	87	0	-	01-80	-212'/-242'	Test Water Zone 3C; 2 BFPD From -83'/-242'
3201	1131	1670	0	0	0	39	161	0	.05	04-36	-190'/-320'	PB -260' On 9-84; 252 BFPD, 69% WC, 287 GOR
3202	999	1252	0	0	0	23	161	16	.05	03-36	-179'/-313'	PB -260'; PB -241'; Top Allowable, 276 GOR
3301	1034	858	0	0	0	70	130	0	.05	03-36	-127'/-330'	PB -264' On 7-83; 684 BFPD, 88% WC, 795 GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
3302	624	1418	0	0	0	49	150	1	.1	04-36	-147'/-338'	TA 10-78 @ 281 BFPD, 98% WC; P&A 2-79
3303	7	33	-	-	-	-	-	-	-	05-88	-142'/-202'	Replaced #3302; 93 BFPD, 81% WC, 4400 GOR
3401	726	197	0	0	0	47	152	1	.2	05-36	-193'/-300'	Add Pf To -77' & Frac On 6-73; Status?
3402	697	354	0	0	0	54	146	0	.25	08-36	-203'/-323'	No PB; 88 BFPD, 86% WC, 1340 GOR
3505	409	115	0	0	0	74	126	0	.6	11-36	-184'/-317'	No PB; Frac On 10-54; 5 BFPD, 38% WC, 11660 GOR
3506	377	125	0	0	0	79	121	0	.6	12-36	-155'/-317'	No PB; Frac On 10-54; 5 BFPD, 24% WC, 8170 GOR
3601	187	54	0	0	0	92	108	0	.6	12-36	-72'/-318'	No PB; 2 Frac; 6 BFPD, 84% WC, 48000 GOR
3602	171	33	0	0	19	92	89	0	.6	02-37	-76'/-316'	No PB; 2 Frac; 5 BFPD, 80% WC, 39600 GOR
3701	858	413	0	0	0	51	149	0	.2	03-36	-190'/-335'	No PB; 76 BFPD, 70% WC, 1270 GOR
3702	643	276	0	0	0	75	125	0	.3	10-36	-181'/-335'	PB -265' & Frac; 12 BFPD, 31% WC, 2800 GOR
3801	691	95	0	0	0	69	131	0	.5	01-36	-179'/-318'	No PB; 17 BFPD, 54% WC, 1550 GOR
3802	833	544	0	0	0	45	142	13	.15	05-36	-163'/-305'	Frac; PB -265'; 182 BFPD, 81% WC, 1615 GOR
3803	672	67	0	0	0	66	134	0	.6	09-36	-176'/-316'	No PB; Frac On 1-70; 21 BFPD, 30% WC, 2710 GOR
3804	536	76	0	0	0	71	129	0	.6	11-36	-145'/-327'	No PB; Frac On 5-69; 12 BFPD, 47% WC, 1140 GOR
3901	418	1369	0	0	0	61	132	7	.1	09-36	-172'/-332'	PB -256'; PB -213'; TA 3-88 @ 206 BFPD, 99% WC
3902	213	134	0	0	0	59	139	2	.6	03-37	-84'/-327'	PB -300'; WC? 1968, Cum Water Too High?; 3 BFPD
4001	602	149	0	0	0	71	129	0	.5	10-36	-73'/-323'	No PB; Frac On 1-72; 36 BFPD, 68% WC, 8950 GOR
4101	429	1033	0	0	11	87	102	0	.15	08-36	-95'/-329'	No WO Reported; Rate Varies; TA 3-86 @ 1 BFPD
4202	22	17	0	0	21	88	91	0	.6	09-69	-88'/-285'	Frac On 9-69; 2 BFPD, High GOR
4203	21	14	0	0	58	98	44	0	.6	12-69	-180'/-296'	Frac On 12-69; 2 BFPD, High GOR
4301	314	69	0	0	25	88	87	0	.6	01-37	-73'/-318'	Frac On 10-69; 9 BFPD, 69% WC, 18800 GOR
4401	54	167	0	0	78	95	27	0	.5	08-59	-210'/-295'	Frac On 8-59; 21 BFPD, 81% WC, 5230 GOR
4501	455	52	0	0	62	94	44	0	.6	10-36	-193'/-328'	No Major WO; 9 BFPD, 57% WC, 975 GOR
4602	18	1	0	0	97	101	2	0	.6	05-59	-227'/-237'	Frac On 5-59; TA 11-74 @ Less Than 1 BOPD
4701	102	17	60	45	95	0	0	0	.6	12-36	-120'/-311'	DD-386', Frac, & PB -326'; TA 8-68 @ 5 BFPD
4702	78	13	76	46	78	0	0	0	.6	07-37	-114'/-310'	No Major WO; TA 3-70 @ 3 BFPD, 18950 GOR
4801	201	60	0	15	80	92	13	0	.6	05-36	-110'/-355'	Run Lnr & Frac -297'/-320'; 6 BFPD, 1640 GOR
4802	422	45	0	48	79	73	0	0	.6	06-37	-112'/-335'	DD, Frac Lnr Pf -280'/-345'; 13 BFPD, 643 GOR
4904	4	5	0	19	76	90	15	0	.6	03-55	-208'/-349'	Frac On 3-55; TA 8-64 @ 2 BFPD, High GOR?
5001	83	4	0	42	90	68	0	0	.6	10-36	-157'/-322'	Low Rate & High GOR; TA 12-42 @ 5 BFPD
5002	101	32	25	36	81	58	0	0	.6	04-37	-94'/-314'	No Major WO; 4 BFPD, 3320 GOR
5101	51	13	0	2	78	102	18	0	.6	03-37	-118'/-324'	No Major WO; TA 11-64 @ <1 BFPD, High GOR
5307	29	0	0	0	74	117	9	0	.6	11-36	-188'/-322'	TA 4-38 @ 38 BOPD (High GOR?)
5401	168	1	0	0	40	104	56	0	.6	06-37	-170'/-325'	TA 5-71 @ 4 BOPD & High GOR
5501	36	20	0	0	76	87	37	0	.6	08-36	-40'/-330'	Low Rate & High GOR
5503	21	6	0	38	74	85	3	0	.6	02-47	-167'/-312'	Low Rate & High GOR
5601	925	178	0	0	2	88	110	0	.4	06-36	-180'/-311'	No Major WO; 96 BFPD, 61% WC, 738 GOR
5602	377	357	0	0	51	95	54	0	.45	08-36	-158'/-341'	Frac On 12-54; TA 3-82 @ 5 BFPD, 12000 GOR
5608	20	173	0	0	29	96	75	0	-	07-73	-329'/-351'	Frac; Add Pf To -236'; TA 4-81 @ 10 BFPD
5603	193	161	0	0	70	95	35	0	.5	12-36	-143'/-354'	No PB; TA 11-48 @ 60 BFPD, 12% WC, ? GOR
5604	215	291	0	2	71	85	42	0	.5	06-37	-119'/-353'	High WC After Frac -304'/-317' In 1958; TA 4-63

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
5705	499	144	0	0	34	102	64	0	.5	08-36	-131'/-322'	No PB?, WC Varies; 15 BFPD, 59% WC, 7900 GOR
5706	797	377	0	0	0	66	134	0	.35	08-36	-176'/-367'	No PB; 60 BFPD, 64% WC, 900 GOR
5707	489	36	0	0	35	104	61	0	.6	10-36	-172'/-312'	No PB; 5 BFPD, 41% WC,13300 GOR
5708	798	52	0	0	1	94	105	0	.5	11-36	-186'/-326'	No PB; 38 BFPD, 22% WC, 600 GOR
5801	924	207	0	0	0	78	122	0	.3	06-36	-181'/-316'	PB In 1988?; 29 BFPD, 47% WC, 1090 GOR
5802	1010	227	0	0	0	100	100	0	.25	09-36	-177'/-313'	No PB; 111 BFPD, 46% WC, 480 GOR
5901	36	7	0	0	59	88	53	0	.6	04-36	-195'/-364'	Frac & TA 5-59/9-81; PB -112'/-176', Gas Well
6001	1053	203	0	0	0	65	135	0	.25	08-38	-135'/-320'	No PB; 142 BFPD, 54% WC, 1080 GOR
6002	966	190	0	0	0	15	128	57	.15	10-36	-161'/-331'	PB -198' On 2-79; 52 BFPD, 37% WC, 300 GOR
6101	70	5	0	0	39	86	75	0	.6	04-36	-169'/-314'	Frac On 7-73; Frac On 3-82; 2 BFPD, High GOR
6202	1079	1711	0	0	0	40	160	0	.08	04-36	-222'/-298'	PB -244' On 2-84; 4576 BFPD, 95% WC, 520 GOR
6203	1170	225	0	0	0	12	161	27	.05	05-36	-219'/-298'	PB -257' On 12-83; 123 BFPD, 35% WC, 324 GOR
6205	966	1964	0	0	0	53	147	0	.05	06-36	-210'/-315'	PB -268' On 9-82; 145 BFPD, 64% WC, 360 GOR
6206	1190	677	0	0	0	41	152	7	.05	07-36	-192'/-313'	PB -246' On 10-83; 109 BFPD, 27% WC, 280 GOR
6301	604	1018	0	0	0	79	121	0	.05	04-36	-214'/-329'	Frac On 9-58; PB -166'/-196'; 4 BFPD, 15270 GOR
6302	618	187	0	0	16	96	88	0	.05	05-36	-208'/-330'	PB -87'/-291'; 17 BFPD, 64% WC, 5100 GOR
6303	613	1549	0	0	0	67	133	0	.05	05-36	-190'/-324'	Lnr Pf -230'/-290'; 189 BFPD, 95% WC, 2970 GOR
6304	566	1200	0	0	0	48	152	0	.05	06-36	-205'/-332'	Run Sub Pump On 5-69; PB -18'/-181', Gas Well
6401	973	1384	0	0	0	36	148	16	.08	04-36	-169'/-325'	No PB; 176 BFPD, 86% WC, 525 GOR
6402	924	1118	0	0	0	42	132	26	.08	06-36	-167'/-320'	No PB; 194 BFPD, 92% WC, 875 GOR
6403	1043	947	0	0	0	36	143	21	.08	06-36	-195'/-318'	No PB; 177 BFPD, 73% WC, 410 GOR
6404	939	766	0	0	0	6	131	63	.08	07-36	-166'/-316'	No PB; 91 BFPD, 83% WC, 840 GOR
6501	717	943	0	0	0	62	138	0	.05	04-36	-166'/-324'	PB -231' On 12-77; 94 BFPD, 85% WC, 490 GOR
6502	824	771	0	0	0	90	110	0	.1	05-36	-174'/-324'	No PB; 116 BFPD, 81% WC, 930 GOR
6503	789	230	0	0	0	59	133	8	.08	06-36	-171'/-328'	No PB; 434 BFPD, 96% WC, 3980 GOR
6504	315	99	0	0	0	88	112	0	.25	06-36	-164'/-318'	TA @ 80% WC on 12-53; Replaced By #6505
6505	668	164	0	0	3	91	106	0	-	05-56	-209'/-241'	No PB; 69 BFPD, 39% WC, 595 GOR
6601	632	278	0	0	0	72	128	0	.25	04-36	-139'/-325'	Mult PB -275'; 37 BFPD, 80% WC, 535 GOR
6602	532	1596	0	0	0	63	137	0	.2	05-36	-158'/-324'	No PB; 184 BFPD, 99% WC, 1150 GOR
6701	612	1421	0	0	0	88	112	0	.15	03-36	-198'/-328'	PB -263' & Frac; 88 BFPD, 89% WC, 3230 GOR
6702	752	175	0	0	0	77	123	0	.5	07-36	-189'/-325'	PB -313' On 8-46; 37 BFPD, 32% WC, 910 GOR
6801	496	90	0	0	2	97	101	0	.6	04-36	-181'/-333'	No PB; 2 Frac; 19 BFPD, 64% WC, 4985 GOR
6802	370	72	0	0	2	96	102	0	.6	06-36	-114'/-324'	Run Lnr & Frac -244'/-282'; 14 BFPD, 7470 GOR
6901	512	42	0	0	46	101	53	0	.6	07-36	-166'/-326'	No PB; 2 Frac; 4 BFPD, 10% WC 6940 GOR
6902	676	71	0	0	40	95	65	0	.6	09-36	-163'/-324'	No PB; 2 Frac; 20 BFPD, 17% WC, 3070 GOR
7001	692	185	0	0	0	68	132	0	.5	05-36	-202'/-313'	No PB; 35 BFPD, 50% WC, 1220 GOR
7002	855	80	0	0	0	90	110	0	.55	07-36	-208'/-325'	No PB; 31 BFPD, 19% WC, 1300 GOR
7101	556	681	0	0	0	81	119	0	.3	05-36	-190'/-327'	PB -262'; Frac; 5 BFPD, 38% WC, 6980 GOR
7102	619	255	0	0	1	90	109	0	.45	10-36	-197'/-321'	PB -291' On 5-46; 36 BFPD, 63% WC, 1700 GOR
7201	372	53	0	0	18	89	93	0	.6	06-36	-144'/-328'	PB -282'; 2 Frac; 7 BFPD, 24% WC,16600 GOR
7202	379	35	0	0	16	88	96	0	.6	11-36	-140'/-320'	No PB; 9 BFPD, 34% WC, 5390 GOR
7203	215	4	0	0	33	92	75	0	.6	12-36	-102'/-325'	Mechanical Problems, TA 9-54 @ 22 BFPD

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
7301	282	15	0	0	62	100	38	0	.6	07-36	-64'/-324'	TA 12-55, Replaced By #7301A; TA 1967 @ 12 BFPD
7301A	27	10	0	0	43	94	63	0	-	12-55	-215'/-303'	2 Frac; TA 5-58 @ 28 BFPD, Re-activated #7301
7402	289	57	0	0	99	101	0	0	.6	12-36	-157'/-324'	PB -306', Frac 3-56; 3 BFPD, 34% WC, 27400 GOR
7403	250	63	0	0	98	102	0	0	.6	03-37	-68'/-324'	PB -276', Frac 9-56; TA 8-77 @ 127 BFPD, 99% WC
7404	129	17	0	16	116	68	0	0	.6	07-56	-253'/-263'	Frac 7-56; TA 11-86 @ 8 BFPD, 18% WC, 1250 GOR
7501	23	9	0	11	111	78	0	0	.6	05-59	-242'/-260'	TA 2-68, Hole in casing
7807	283	48	0	3	113	84	0	0	.6	12-36	-171'/-320'	3 Frac; Add Pf -77'; 5 BFPD, 0% WC, 19750 GOR
7908	45	7	0	42	112	46	0	0	.6	02-75	-141'/-303'	Frac 2-75; 4 BFPD, 26% WC, 6730 GOR
8001	205	70	0	0	97	95	8	0	.6	10-36	-191'/-330'	Frac 3-55; 6 BFPD, 62% WC, 8130 GOR
8102	100	59	107	46	47	0	0	0	.6	05-37	-186'/-318'	TA 7-55 @ 6 BFPD; Recompleted To Penrose WF
8201	179	70	78	52	70	0	0	0	.6	06-36	-158'/-328'	Frac?; 14 BFPD, 51% WC, 4920 GOR
8301	200	7	77	50	73	0	0	0	.6	07-36	-187'/-318'	Run Lnr & Pf -300'/-316'; TA 12-80, High GOR
8401	274	58	50	50	88	12	0	0	.6	06-36	-76'/-332'	Run Lnr & Pf -285'/-315'; 24 BFPD, High GOR
8402	170	90	110	53	37	0	0	0	.6	02-39	-75'/-326'	No Major WO; TA 1-57 @ 8 BFPD, 50% WC
8501	307	98	0	24	92	84	0	0	.6	02-36	-194'/-324'	Frac 1-57; TA 1969/75; PB -94'/-135', Gas Well
8503	203	35	0	13	95	92	0	0	.6	04-36	-189'/-319'	Frac 6-57; TA 1968/75; PB -193'/-237', High GOR
8504	222	41	0	0	52	114	34	0	.6	04-36	-188'/-318'	Run Lnr & Pf -297'/-304'; TA 4-78, High GOR
8505	163	17	0	37	97	66	0	0	.6	07-36	-183'/-319'	No Major WO; Increasing GOR, Now Gas Well
8506	387	224	0	0	86	114	0	0	.5	08-36	-176'/-323'	Run Lnr & Pf -190'/-296'; 18 BFPD, High GOR
8508	194	54	0	51	99	50	0	0	.6	04-37	-192'/-307'	Frac 1-55; 15 BFPD, 84% WC, 13600 GOR
8601	441	53	0	0	0	72	127	1	.6	08-35	-189'/-334'	Frac 6-72; 22 BFPD, 20% WC, 2675 GOR
8602	445	137	0	0	0	78	122	0	.55	09-35	-174'/-334'	Frac 6-72; 38 BFPD, 71% WC, 4380 GOR
8603	384	86	0	0	0	92	108	0	.6	11-35	-164'/-334'	Run Lnr & Frac -264'/-289'; 5 BFPD, 7140 GOR
8604	365	33	0	0	0	65	135	0	.6	02-36	-179'/-337'	Frac 4-73; 5 BFPD, 49% WC, 17900 GOR
8605	104	1	0	0	5	114	81	0	.6	05-36	-158'/-320'	TA 1-54 @ 2 BOPD; Replaced By #8607
8607	43	41	0	0	0	98	102	0	-	11-66	-250'/-302'	Frac 7-75; Add Pf To -206'; 3 BFPD, High GOR
8606	109	20	0	0	25	117	58	0	.6	07-36	-181'/-324'	Run Lnr & Frac -264'/-320'; 4 BFPD, High GOR
8701	109	46	0	0	15	92	93	0	.6	02-36	-167'/-343'	PB -317' & Frac 1-57; TA 4-58 @ 4 BFPD
8702	11	9	0	0	20	92	88	0	-	01-82	-165'/-322'	Replacement For #8701; 5 BFPD, High GOR
8801	317	10	0	0	19	108	73	0	.6	11-35	-161'/-326'	TA 11-59 & Replaced By #8801Y; Reactivated 7-71
8801Y	25	36	0	0	0	91	109	0	-	11-59	-260'/-272'	PB -136'/-198' & Frac 3-65; TA 4-70, Low Rate
8802	263	10	0	0	14	116	70	0	.6	02-36	-195'/-307'	4 BFPD On 7-54 -- DD -372', Test, and TA
8901	733	135	0	0	0	36	135	29	.5	07-35	-206'/-335'	No PB; 46 BFPD, 53% WC, 332 GOR
9001	974	30	0	0	0	52	142	6	.5	10-35	-172'/-332'	No PB; 54 BFPD, 27% WC, 685 GOR
9002	860	26	0	0	13	88	99	0	.6	05-36	-77'/-339'	No PB; 36 BFPD, 10% WC, 5580 GOR
9003	1072	87	0	0	0	47	137	16	.35	08-36	-82'/-333'	No PB; 89 BFPD, 11% WC, 1020 GOR
9004	990	41	0	0	0	17	140	43	.35	02-37	-83'/-333'	Run Lnr & Pf -239'/-320'; 77 BFPD, 304 GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
9101	1057	156	0	0	0	7	128	65	.25	07-36	-186'/-317'	No PB; 89 BFPD, 51% WC, 413 GOR
9102	802	448	0	0	0	29	129	42	.3	08-36	-182'/-314'	No PB; 63 BFPD, 78% WC, 764 GOR
9103	411	870	0	0	0	0	103	97	.2	05-37	-196'/-315'	PB -290'; PB -235' & Frac; TA 7-70 @ 20 BFPD
9106	346	164	0	0	0	0	115	85	-	04-72	-220'/-296'	Replacement For #9103; 74 BFPD, 34% WC, 382 GOR
9104	974	1117	0	0	0	0	107	93	.05	04-37	-198'/-305'	PB -217' & Frac 7-61;184 BFPD, 76% WC, 622 GOR
9201	582	887	0	0	0	0	136	64	.3	05-35	-204'/-309'	PB -214' On 12-54; 16 BFPD, 33% WC, 414 GOR
9202	761	374	0	0	0	30	128	42	.35	09-35	-185'/-339'	PB -284' On 7-72; 30 BFPD, 30% WC, 705 GOR
9203	865	262	0	0	0	0	110	90	.3	04-37	-192'/-309'	No PB; 53 BFPD, 41% WC, 527 GOR
9204	584	1080	0	0	0	0	58	142	0	05-37	-214'/-310'	PB +111'/-162'; 82 BFPD, 82% WC, 2060 GOR
9301	637	5310	0	0	0	0	55	145	0	03-36	-166'/-323'	PB -151'/-159'; PB On 3-88?; 22 BFPD, 577 GOR
9305	21	979	0	0	0	0	35	165	-	02-84	-135'/-189'	Replace #9301; 731 BFPD, 98% WC, 903 GOR
9302	447	1172	0	0	0	0	92	108	.05	03-37	-246'/-318'	Mult PB -162'/-182'; 7 BFPD, 43% WC, 880 GOR
9303	294	634	0	0	0	0	77	123	0	04-37	-259'/-325'	Mult PB To Gas Cap; Replaced By #9308; TA 1-85
9308	31	369	0	0	0	0	84	116	-	08-72	-185'/-207'	Add Pf -112'/-164'; TA 2-88 @ 139 BFPD, 99% WC
9304	330	362	0	0	0	0	0	200	0	04-37	-280'/-326'	PB -201'/-235'; TA 10-57 @ >200 BFPD, Replaced
9307	196	4794	0	0	0	0	5	195	-	10-57	-213'/-228'	PB -171'/-187'; TA 8-78 @ 259 BFPD, 99% WC
9401	465	639	0	0	0	47	129	24	.08	06-36	-215'/-317'	PB -237'; PB -155'/-190'; 8 BFPD, High GOR
9406	1	3	0	0	0	53	135	12	-	09-74	-213'/-302'	Replacement For #9401; TA 1-79
9402	977	251	0	0	0	0	125	75	.15	07-36	-211'/-317'	PB -227' On 4-52; 110 BFPD, 63% WC, 434 GOR
9403	564	78	0	0	0	72	128	0	.6	09-36	-224'/-343'	No PB; 9 BFPD, 60% WC, 1950 GOR
9404	735	419	0	0	0	2	129	69	.3	06-37	-227'/-314'	No PB?, WC Varies; 45 BFPD, 80% WC, 610 GOR
9501	563	736	0	0	0	70	128	2	.05	07-36	-191'/-314'	PB -151'/-153'; TA 3-88 @ 51 BFPD,13200 GOR
9502	841	92	0	0	25	80	95	0	.5	09-36	-190'/-328'	No PB; 60 BFPD, 28% WC, 725 GOR
9601	220	0	0	0	0	82	118	0	.6	08-36	-211'/-317'	TA 12-48 @ 50 BOPD, Casing Leak; Replaced
9603	445	38	0	0	0	78	122	0	-	12-48	-257'/-282'	Replace #9601; 24 BFPD, 42% WC, 1065 GOR
9602	699	64	0	0	17	87	96	0	.6	09-36	-193'/-319'	No PB; 40 BFPD, 35% WC, 2090 GOR
9701	468	2389	0	0	0	0	107	93	0	01-36	-172'/-314'	PB -180'; PB -129'/-159' 4-57; 382 BFPD, 99% WC
9705	1	16	0	0	0	0	98	102	-	03-75	-192'/-206'	Production Reported With #9701?
9702	344	208	0	0	0	0	107	93	.1	05-36	-228'/-317'	Mult PB; PB +104'/-88' On 9-73, Gas Well
9703	486	175	0	0	0	77	123	0	.4	08-36	-225'/-317'	Run Lnr & Pf -271'/-279'; 14 BFPD, 1360 GOR
9704	418	2723	0	0	0	0	118	82	0	04-37	-233'/-324'	PB -199'/-209' On 4-62; 364 BFPD, 99% WC
9801	589	99	0	0	0	57	143	0	.55	10-36	-210'/-320'	No PB?, WC Varies; TA 11-79 @ 14 BFPD, 2075 GOR
9802	549	88	0	0	2	87	111	0	.6	10-36	-219'/-325'	No PB; 32 BFPD, 65% WC, 1180 GOR
9803	791	304	0	0	0	48	142	10	.3	11-36	-199'/-325'	No PB?, WC Varies; 74 BFPD, 61% WC, 251 GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
9901	563	832	0	0	0	0	137	63	.1	04-36	-229'/-319'	PB -200'/-223' On 11-64; PB Gbg Gas Cap 9-87
10001	456	35	0	0	5	93	102	0	.6	08-36	-188'/-318'	Lnr Pf-224'/-282'; Frac 2-67; 30 BFPD, 3170 GOR
10002	832	149	0	0	11	88	101	0	.5	08-36	-194'/-320'	No PB; 55 BFPD, 50% WC, 2310 GOR
10101	335	22	0	0	0	92	108	0	.6	01-37	-192'/-317'	Frac 1-60; Add Pf -78'/-172'; 1 BFPD, High GOR
10102	436	182	0	0	0	81	119	0	.5	01-37	-190'/-307'	No PB; 2 Frac ; P&A 12-83, Collapsed Csg
10103	461	70	0	0	0	78	122	0	.6	01-37	-205'/-320'	No PB; 19 BFPD, 65% WC, 3850 GOR
10104	591	66	0	0	25	92	83	0	.6	02-37	-208'/-315'	No PB; Frac 10-70; 29 BFPD, 26% WC, 6770 GOR
10201	408	27	0	0	30	86	84	0	.6	03-37	-188'/-327'	No PB; < 1 BOPD, 5 MCFD
10301	321	89	0	0	59	93	48	0	.6	09-37	-184'/-330'	No PB; 17 BFPD, 87% WC, 5750 GOR
10401	400	18	0	0	0	68	132	0	.6	07-36	-247'/-324'	PB -280'/-317'; Frac; 12 BFPD, 14% WC, 1350 GOR
10402	258	16	0	0	0	78	122	0	.6	08-36	-220'/-314'	Frac; TA 1956/81; 7 BOPD, 0% WC, 5050 GOR
10501	539	200	0	0	16	98	86	0	.5	02-37	-216'/-316'	No PB; Frac 6-58; 22 BFPD, 50% WC, 2125 GOR
10601	173	543	0	0	90	100	10	0	.2	12-36	-189'/-340'	TA 8-53 @ 47 BFPD, 92% WC; Replaced By #10601R
10601R	20	96	0	0	60	106	34	0	-	03-59	-297'/-300'	Frac; PB & Frac; PB -81'/-169' & Frac; TA 10-81
10701	339	41	0	0	0	26	137	37	.6	09-36	-230'/-328'	No PB; 28 BFPD, 25% WC, 8040 GOR
10703	273	61	0	0	0	81	119	0	.55	10-36	-218'/-328'	PB -171'/-201'; WO 1-83?; 33 BFPD, 3860 GOR
10801	581	176	0	0	10	110	80	0	.5	10-36	-204'/-321'	No PB; 16 BFPD, 43% WC, 637 GOR
10802	564	522	0	0	53	106	41	0	.3	12-36	-192'/-331'	PB -317' In 1977?; 54 BFPD, 79% WC, 839 GOR
10901	82	2	0	0	86	86	28	0	.6	06-37	-121'/-332'	TA 10-52 @ 6 BFPD
10902	54	10	0	42	89	69	0	0	.6	02-39	-155'/-350'	TA 8-55 @ 3 BFPD
10903	23	3	18	41	103	38	0	0	.6	02-80	NA	No WO Data; 6 BFPD, 18% WC, 3575 GOR
10904	4	87	0	7	103	90	0	0	.2	03-80	NA	TA 7-86 @ 118 BFPD, 97% WC
11001	129	34	50	28	98	24	0	0	.6	03-36	-175'/-348'	TA 3-66 @ 2 BOPD
11002	420	56	0	6	78	86	30	0	.6	05-36	-279'/-347'	TA 10-62 @ 19 BFPD, 79% WC, 2160 GOR
11101	145	17	0	17	91	92	0	0	.6	01-37	-137'/-327'	TA 2-58 @ 3 BFPD
11102	64	27	0	27	77	96	0	0	.6	05-39	-144'/-334'	TA 7-60 @ 5 BFPD
11201	4	0	0	5	92	103	0	0	.5	08-41	-144'/-339'	TA 1-45 @ 11 BFPD; Replaced By #11202R
11202R	28	78	0	5	92	103	0	0	--	08-58	-230'/-327'	Frac; PB-173'/-206' & Frac; 6 BFPD, High GOR
11202	21	0	0	0	96	84	20	0	.5	10-41	-136'/-326'	TA 12-57 @ 2 BOPD; Replaced By #11201R
11201R	40	79	0	0	96	84	20	0	--	12-57	-275'/-358'	PB -120'/-232' & Frac; 6 BFPD, High GOR
11203	27	58	0	16	93	91	0	0	.5	02-59	-285'/-315'	Frac; PB-126'/-203' & Frac; 6 BFPD, High GOR
11204	4	11	10	40	95	55	0	0	.6	07-80	-110'/-214'	Frac 7-80; 7 BFPD, High GOR
11301	467	1600	0	0	74	85	41	0	.15	07-36	-195'/-341'	PB -286' & Frac; TA 1969/81; TA 7-84 @ 123 BFPD
11302	185	95	0	26	85	85	4	0	.6	02-37	-191'/-341'	Frac 12-55; TA 11-62 @ 3 BFPD, High GOR
11401	437	1475	0	0	70	88	42	0	.15	09-36	-189'/-340'	Mult PB; 4 Frac; 5 BFPD from -63'/-126'
11504	1	1	16	40	92	52	0	0	.6	03-61	-250'/-264'	Frac 3-61; TA 10-62 @ 3 BFPD, 1870 GOR
11601	4	0	0	22	104	74	0	0	.6	01-61	-268'/-304'	Frac 1-61; TA 8-63 @ 3 BOPD,15000 GOR
11701	120	186	0	0	75	90	35	0	.4	10-58	-224'/-288'	Frac; WC Varies; 48 BFPD, 90% WC, High GOR
11702	76	315	0	0	77	90	33	0	.4	07-41	-135'/-325'	DD -353' 7-56; WC?; TA 4-75 @ 6 BOPD, High GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
11801	118	224	0	0	73	84	43	0	.4	06-58	-241'/-293'	Frac; PB -134'/-216' & Frac; 7 BFPD, High GOR
11802	110	240	0	0	77	91	32	0	.4	12-57	-127'/-331'	Frac; WC?; P&A 3-77, Collapsed Csg; Replaced
11804	4	34	0	0	77	91	32	0	--	08-76	-119'/-268'	2 Frac; WC?; 5 BFPD, 74% WC, High GOR
11901	269	34	63	50	76	11	0	0	.6	03-47	-165'/-274'	DD & Pf Lnr -267'/-284'; SI 3-89 @ 14 BFPD
11902	317	51	7	54	79	60	0	0	.6	07-36	-207'/-316'	Run Lnr & Pf -262'/-292'; TA 7-74 @ 2 BFPD
11903	322	44	0	38	93	69	0	0	.6	09-36	-186'/-314'	No Major WO; TA 7-68 @ 3 BOPD, High GOR
11904	315	506	14	56	94	36	0	0	.4	10-36	-157'/-240'	DD & Pf Lnr -234'/-283'; TA 6-71 @ 13 BFPD
11905	131	505	75	57	68	0	0	0	.1	12-36	-164'/-303'	Start WC On 1-37; TA 4-44 @ 1018 BFPD, 97% WC
12002	373	730	0	0	68	116	16	0	.4	04-36	-185'/-316'	High WC After Frac 10-57; TA 5-84 @ 3 BFPD
12101	431	531	0	0	4	116	80	0	.4	01-36	-201'/-296'	High WC After DD & Frac; TA 4-85 @ 55 BFPD
12201	758	23	0	0	0	26	124	50	.5	07-35	-195'/-349'	No PB; 48 BFPD, 23% WC, 723 GOR
12202	409	144	0	0	0	66	131	3	.5	10-35	-182'/-332'	Run Lnr, Pf -308'/-314'; TA 12-85 @ 7 BFPD
12203	756	82	0	0	0	38	136	26	.5	12-35	-199'/-345'	No PB; 47 BFPD, 23% WC, 593 GOR
12204	763	60	0	0	0	94	106	0	.6	01-36	-221'/-318'	No PB; 36 BFPD, 16% WC, 723 GOR
12301	223	6	0	0	27	120	53	0	.4	06-36	-176'/-291'	TA 5-59 @ 2 BOPD; Replaced By #12302
12302	122	594	0	0	18	124	58	0	-	10-63	-224'/-230'	TD -440'; TA 5-87 @ 35 BFPD, 90% WC, 794 GOR
12401	616	77	0	0	15	110	75	0	.6	03-36	-200'/-315'	No PB; 23 BFPD, 54% WC, 3330 GOR
12501	512	135	0	0	5	129	66	0	.55	06-36	-164'/-243'	No PB; WC?; 20 BFPD, 84% WC, 715 GOR
12601	728	235	0	0	0	78	118	4	.45	01-36	-222'/-330'	No PB; 55 BFPD, 43% WC, 1430 GOR
12602	833	311	0	0	0	85	115	0	.4	01-36	-184'/-303'	High WC After Frac; 96 BFPD, 62% WC, 1010 GOR
12603	705	118	0	0	0	118	82	0	.5	04-36	-209'/-329'	No PB; 68 BFPD, 68% WC, 930 GOR
12701	605	3695	0	0	0	51	119	30	.05	11-35	-118'/-324'	Mult PB -211'; 190 BFPD, 90% WC, 522 GOR
12702	765	566	0	0	0	33	119	48	.3	02-36	-141'/-332'	No PB; 43 BFPD, 67% WC, 683 GOR
12801	829	435	0	0	0	115	85	0	.35	05-36	-224'/-311'	No PB; 123 BFPD, 73% WC, 2010 GOR
12802	725	1278	0	0	45	125	30	0	.15	07-36	-151'/-315'	PB -313'; 199 BFPD, 85% WC, 291 GOR
12901	792	2299	0	0	0	0	96	104	.05	02-35	-170'/-364'	PB -98'/-270'; 193 BFPD, 89% WC, 1575 GOR
12902	560	972	0	0	0	0	113	87	.1	02-36	+71'/-329'	Run Lnr & Pf -141'/-292'; TA 7-86 @ 5 BFPD
12903	401	1271	0	0	0	0	64	136	0	07-36	-208'/-328	Mult PB +122'/-33'; Gas Well
12904	495	1670	0	0	0	0	39	161	0	05-37	-234'/-314'	Mult PB +123/-57'; 100 BFPD, 85% WC, 441 GOR
13001	486	1165	0	0	0	0	82	118	0	03-36	-209'/-314'	Mult PB-104'/-126';TA 3-72 @ 230 BFPD, Replaced
13009	30	579	0	0	0	0	104	96	-	03-72	-144'/-160'	PB -86'/-96'; TA 3-77 @ 347 BFPD, 96% WC
13002	590	1408	0	0	0	0	85	115	0	05-36	-192'/-302'	Mult PB +93/-124'; 73 BFPD, 84% WC, 3000 GOR
13003	364	297	0	0	0	0	0	44	156	0	07-36	+445'/-324'	TA 4-57 @ 22 BFPD, 60% WC; Replaced By #13008
13008	293	619	0	0	0	0	46	154	-	04-57	-182'/-192'	Mult PB -54'/-142'; 54 BFPD, 66% WC, 1500 GOR
13004	932	1245	0	0	0	0	19	181	0	04-37	-236'/-314'	Mult PB +133'/-71'; 104 BFPD, 33% WC, 710 GOR
13101	762	111	0	0	0	13	128	59	.35	12-35	-218'/-313'	PB -207'/-220'; 34 BFPD, 12% WC, 1600 GOR
13102	490	949	0	0	0	0	100	100	.1	02-36	-234'/-322'	PB -129'/-215'; TA 2-78 @ 2 BFPD, 4690 GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
13103	755	404	0	0	0	0	109	91	.1	02-36	-194'/-327'	PB -212'; PB 10-88?; 24 BFPD, 53% WC, 1325 GOR
13104	373	239	0	0	0	0	47	153	0	06-36	-232'/-312'	Mult PB -63'/-118'; Frac; 18 BFPD, 2320 GOR
13201	490	1088	0	0	0	0	118	82	0	12-35	-213'/-305'	Mult PB +48'/-127'; Frac; 9 BFPD,10870 GOR
13202	581	2333	0	0	0	0	80	120	0	05-36	-207'/-305'	Mult PB -143'/-188'; Frac; TA 7-88 @ 33 BFPD
13301	545	3896	0	0	0	0	113	87	0	01-36	-208'/-321'	Mult PB -113'/-155'; 34 BFPD, 68% WC, 1225 GOR
13302	550	5849	0	0	0	0	106	94	0	05-36	-225'/-311'	Mult PB -34'/-113'; 11 BFPD, 39% WC, 2450 GOR
13401	403	341	0	0	0	0	78	122	0	03-36	-196'/-324'	PB -154'/-162'; TA 11-62 @ 140 BFPD, 98% WC
13402	331	173	0	0	0	0	67	133	.05	05-36	-227'/-317'	Mult PB -74'/-117'; TA 1962/87; Now Gas Well
13403	464	952	0	0	0	0	45	155	0	06-36	-236'/-320'	PB -52'/-86'; PB 7-84; 44 BFPD, 88% WC,2500 GOR
13404	456	1803	0	0	0	0	16	184	0	10-38	-240'/-336'	PB -106'/-118'; PB 1984?; TA 10-87 @ 54 BFPD
13501	313	382	0	0	0	0	90	110	.05	05-36	-231'/-321'	PB -280'; PB -256'; TA 3-53 @ 149 BFPD, 80% WC
13511	130	2620	0	0	0	0	36	164	-	05-55	-162'/-173'	Replace #13501; PB +53'/-56', Gas Well
13502	366	437	0	0	0	0	79	121	0	07-36	-245'/-334'	Mult PB -132'/-142'; Gas Well TA 6-64
13503	370	654	0	0	0	13	128	59	.1	10-36	-218'/-319'	PB -261' On 10-55; PB +95'/-129' On 12-74; Gas
13504	398	584	0	0	0	0	99	101	0	03-37	-221'/-309'	PB -161'/-212'; TA 7-75 @ 64 BFPD, 93% WC
13506	1	1	0	0	0	0	105	95	-	04-75	-8'/-65'	Replacement For #13504; Gas Well TA 8-88
13601	427	661	0	0	0	0	35	165	0	03-36	-248'/-324'	Mult PB -59'/-96'; TA 8-86 @ 2 BFPD, High GOR
13602	401	904	0	0	0	0	65	135	0	06-36	-202'/-322'	Mult PB +121'/-102'; SI 3-89 @ 90 BFPD, 94% WC
13701	420	2804	0	0	0	0	48	152	0	04-36	-246'/-340'	Mult PB +156'/+84'; Gas Well TA 7-81
13702	302	560	0	0	0	0	22	178	0	11-36	-151'/-332'	Mult PB?; TA 6-57 @ 34 BFPD, 78% WC; Replaced
13703	10	542	0	0	0	0	19	181	-	07-77	+197'/+7'	Replace #2 & #5; 134 BFPD, 99% WC, 1620 GOR
13705	7	151	0	0	0	0	46	154	-	04-75	+172'/+32'	Frac 4-75; TA 4-81 @ 57 BFPD, 95% WC
13801	506	692	0	0	0	0	68	132	0	05-36	-147'/-317'	Mult PB -125'/-150'; 107 BFPD, 93% WC, 1640 GOR
13802	320	105	0	0	0	0	59	141	0	07-36	-62'/-318'	TA 5-56 @ 129 BFPD, 95% WC; Replaced By #13805
13805	2	75	0	0	0	0	50	150	-	05-69	+133'/-42'	TA 1972/76; PB +184'/+186'; TA 7-77
13803	371	1011	0	0	0	0	38	162	0	09-36	-177'/-324'	PB -133'/-156'; TA 8-66 @ >200 BFPD, 94% WC
13812	1	6	0	0	0	0	54	146	-	11-70	-156'/-161'	Replace #13803;PB +141'/-48'; Gas Well TA 12-78
13804	269	67	0	0	0	0	62	138	0	02-37	-248'/-330'	Mult PB +155'/+9'; Gas Well TA 6-79; Replaced
13806	4	55	0	0	0	0	56	144	-	04-58	-151'/-204'	TA 4-59 @ 96 BFPD, 94% WC, 4370 GOR
13902	453	104	0	0	0	24	130	46	.5	09-36	-211'/-325'	No PB; 36 BFPD, 58% WC, 868 GOR
13904	287	1028	0	0	0	0	93	107	0	10-36	-199'/-324'	Mult PB -93'/-135'; TA 6-76 @ 204 BFPD, 97% WC
13905	348	136	0	0	0	19	137	44	.5	11-36	-212'/-326'	No PB; 39 BFPD, 62% WC, 1240 GOR
13906	424	951	0	0	0	0	36	164	0	11-36	-249'/-322'	TA 1975 @ 214 BFPD, 97% WC; Test -162'/-240',TA
13907	315	197	0	0	0	0	138	62	.1	12-36	-160'/-325'	TA 1956/69, High WC; PB -102'/-155'; TA 6-76
13908	397	950	0	0	0	0	113	87	0	02-37	-231'/-331'	PB -187/-197'; PB -28'/-72; Gas Well TA 12-78

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
14001	456	477	0	0	0	62	128	10	.1	08-36	-182'/-322'	PB -134'/-159'; 56 BFPD, 97% WC, 4450 GOR
14002	509	420	0	0	1	106	93	0	.2	11-36	-191'/-332'	PB -163'/-263'; 75 BFPD, 89% WC, 1810 GOR
14003	344	450	0	0	0	44	137	19	.05	11-36	-189'/-314'	Mult PB -98'/-132'; 286 MCFD, 123 BWPD
14004	466	185	0	0	0	77	123	0	.2	12-36	-191'/-320'	PB -141'/-171'; 41 BFPD, 91% WC, 4170 GOR
14101	392	437	0	0	0	0	142	58	0	09-36	-180'/-291'	PB -238'; High WC, PB -82'/-116', Gas; TA 4-71
14101R	0	0	0	0	0	5	143	52	-	11-77	-23'/-77'	Replacement For #14101; Gas Well
14202	533	862	0	0	0	24	129	47	.1	11-36	-216'/-321'	Mult PB -82'/-172'; 14 BFPD, 60% WC, 7380 GOR
14301	512	4781	0	0	0	0	19	181	0	12-36	-256'/-315'	PB -276'; High WC 2-85, PB, Test Water, TA 6-85
14401	234	104	0	0	0	0	54	146	0	01-37	-269'/-327'	TA 5-58 @ 21 BFPD, 60% WC; Replaced By #14402
14402	0	0	0	0	0	0	0	0	-	08-78	+415'/+325'	Eumont Gas Well; TA 7-82
14502	415	237	0	0	0	0	65	135	0	11-36	-182'/-322'	PB -37'/-88';WO 5-81?;TA 9-83 @ 220 BFPD,99% WC
14503	569	609	0	0	0	0	120	80	.05	12-36	-250'/-325'	PB -134'/-204'; 177 BFPD, 95% WC, 1250 GOR
14601	469	206	0	0	68	86	46	0	.4	10-36	-91'/-335'	PB -298' & Frac 8-71; 3 BFPD, 54% WC, 1980 GOR
14602	423	272	0	0	49	97	54	0	.1	12-36	-74'/-335'	PB -250'; TA 4-65 @ 40 BFPD, 80% WC, 6340 GOR
14602Y	126	347	0	0	42	98	60	0	-	05-72	-154'/-260'	Replace #14602; 110 BFPD, 80% WC, 858 GOR
14603	727	788	0	0	18	97	85	0	.05	12-36	-73'/-334'	PB -279'; PB -256'; 122 BFPD, 81% WC, 822 GOR
14701	457	488	0	0	72	85	43	0	.2	07-36	-75'/-340'	No PB; TA 9-65 @ 397 BFPD, 97% WC, 4320 GOR
14801	315	282	0	0	87	89	24	0	.4	04-41	-100'/-338'	Run Lnr & Frac -152'/-278'; 11 BFPD, High GOR
14901	556	585	0	0	69	89	42	0	.2	09-36	-175'/-337'	93% WC On 12-84, PB +72'/-141'; Gas Well
14902	435	258	0	0	33	95	72	0	.3	05-37	-193'/-328'	Multiple PB & WO; TA 4-82 @ High WC
15001	457	98	0	6	75	86	33	0	.6	09-36	-171'/-318'	No PB; 2 BFPD, 2240 GOR
15002	644	254	0	0	0	33	126	41	.3	02-37	-255'/-320'	PB -154'/-239'; 9 BFPD, 570 GOR
15003	470	367	0	0	0	62	129	9	.4	03-37	-190'/-315'	TA 1969/74; WO?, WC?; 2 BFPD, 3030 GOR
15004	428	21	0	0	39	86	75	0	.6	04-37	-189'/-316'	No PB; 2 BFPD, 1820 GOR
15005	416	24	0	0	50	86	64	0	.6	04-37	-164'/-316'	No PB; 3 BFPD, 1540 GOR
15101	220	846	0	0	68	86	46	0	.3	07-41	-127'/-328'	Questionable WC 1958/64; PB Gas Cap 12-79
15104	10	35	0	0	57	86	57	0	-	07-61	-285'/-328'	Replacement For #15101; TA 7-67, Collapsed Csg
15102	343	14	0	0	71	85	44	0	.6	08-42	-100'/-332'	TA 1966/75; Pf Lnr -144'/-230' & Frac 7-74; Gas
15103	276	145	0	13	80	88	19	0	.5	04-45	-100'/-362'	TA 1966/74; Pf Lnr -162'/-250' & Frac 10-74;Gas
15201	547	852	0	0	0	74	125	1	.2	11-36	-236'/-321'	Mult PB -114'/-194'; 13 BFPD, 62% WC, 13360 GOR
15302	225	832	0	0	69	90	41	0	.3	09-41	-109'/-309'	DD -347',Frac; WC? 7-58/1-65; TA 7-79 @ 33 BFPD
15304	85	397	0	0	74	90	36	0	-	03-56	-312'/-328'	Add -125'/-200'; 2 Frac; WC?; 17 BFPD,11200 GOR
15401	204	181	0	0	74	85	41	0	.5	05-42	-107'/-308'	Frac;DD-349';WC?; PB-219',Collapsed Csg; 9 BFPD

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
15501	175	13	0	0	74	85	41	0	.6	09-43	-112'/-341'	TA 10-75 @ 2 BFPD, High GOR; Replaced By #15502
15502	42	76	0	0	75	85	40	0	-	07-58	-248'/-296'	Add Pf & Frac 5-73; WC? 12-78/8-79; 9 BFPD
15601	102	776	?	?	?	?	?	0	.6	06-56	+23'/-432'	Eumont Pf & GBG OH; TA 11-72 @ 162 BFPD, 99% WC
15614	7	0	0	23	89	84	4	0	.6	05-59	-272'/-318'	TA 6-61 @ 2 BOPD, 1610 GOR
15703	183	376	0	0	85	86	29	0	.4	02-42	-107'/-327'	DD -372'; TA 1964/75; DD to SA -- Gas & Water
15801	70	0	0	18	87	82	13	0	.6	11-42	-133'/-329'	DD -373' On 8-57; TA 5-62, Low Rate
15901	11	32	0	0	89	83	28	0	.6	11-58	-253'/-299'	TA 1961/74; PB -131'/-189' 10-74; WC? 1979; Gas
16001	18	0	0	19	80	81	20	0	.6	05-42	-124'/-320'	DD -342' On 11-42; TA 11-54 @ 3 BOPD
16201	276	517	0	55	87	58	0	0	.25	12-36	-178'/-300'	DD & Run Lnr?; PB -149'/-158', Test & TA 4-84
16202	231	826	3	50	100	47	0	0	.2	08-37	-186'/-330'	Lnr PB -229'/-300'; TA 2-67 @ 50 BFPD, 82% WC
16203	226	175	57	55	88	0	0	0	.4	09-37	-181'/-300'	PB -264' On 2-47; TA 9-87 @ 3 BFPD,23000 GOR
16301	623	134	0	0	0	92	108	0	.5	08-36	-205'/-315'	Lnr PB -258'/-284'; 30 BFPD, 72% WC, 245 GOR
16302	508	757	0	0	28	114	58	0	.2	09-36	-174'/-317'	Lnr PB -235'/-260'; 81 BFPD, 98% WC, 1410 GOR
16303	553	28	0	0	77	123	0	0	.6	03-37	-171'/-313'	Lnr PB -257'/-271'; 12 BFPD, 562 GOR
16304	647	223	0	0	7	118	75	0	.35	04-37	-191'/-316'	No PB; 142 BFPD, 74% WC, 9800 GOR
16305	410	754	0	20	98	82	0	0	.2	06-37	-185'/-306'	No PB; TA 11-72 @ 100 BFPD, 99% WC, 5500 GOR
16306	403	475	0	32	91	77	0	0	.2	07-37	-176'/-305'	Lnr PB -259'/-271'; 66 BFPD, 88% WC, 1070 GOR
16401	591	122	0	0	0	69	119	12	.5	12-35	-194'/-309'	Lnr PB -255'/-275'; 21 BFPD, 64% WC, 116 GOR
16402	193	5	0	0	0	43	124	33	.45	10-36	-207'/-319'	Lost WO Tools 8-47; TA 6-62 @ 17 BOPD,14400 GOR
16403	340	129	0	0	0	105	95	0	-	06-62	-263'/-275'	Replace #16402; 37 BFPD, 39% WC, 386 GOR
16502	736	1272	0	0	0	53	129	18	.1	01-36	-177'/-312'	PB -218' On 11-66; 42 BFPD, 59% WC, 273 GOR
16503	608	594	0	0	0	51	134	15	.3	10-36	-229'/-316'	PB -179'/-225'; TA 9-85 @ 22 BFPD,12450 GOR
16601	645	114	0	0	0	90	110	0	.5	09-36	-205'/-317'	No PB; 38 BFPD, 39% WC, 295 GOR
16602	614	239	0	0	0	120	80	0	.4	12-36	-181'/-299'	DD -322' On 3-49; 79 BFPD, 57% WC, 558 GOR
16603	424	520	0	0	0	84	116	0	.1	04-37	-181'/-300'	Lnr PB -122'/-289'; TA 4-88 @ 73 BFPD, 93% WC
16616	44	355	0	0	0	84	116	0	-	01-73	-232'/-307'	PB -3'/-254'; 267 BFPD, 94% WC, 545 GOR
16604	445	99	0	0	11	118	71	0	.5	05-37	-206'/-289'	Add Pf To -72'; 41 BFPD, 55%WC, 374 GOR
16605	447	167	0	7	79	114	0	0	.4	06-37	-161'/-299'	Run Lnr,Pf -194'/-296'; 74 BFPD, 69%WC, 910 GOR
16606	444	542	24	51	85	40	0	0	.2	09-37	-154'/-300	Run Lnr,Pf -227'/-280'; 68 BFPD, 83%WC,1450 GOR
16701	254	7	0	0	0	20	142	38	.2	08-35	-194'/-325'	PB -270'; TA 4-48 @ 55 BFPD, 16% WC; Replaced
16708	614	702	0	0	0	14	146	40	-	04-48	-164'/-307'	PB -197'/-273'; 38 BFPD, 35% WC, 339 GOR
16704	799	62	0	0	0	11	132	57	.4	10-36	-219'/-316'	No PB; 40 BFPD, 59% WC, 790 GOR
16705	877	172	0	0	0	34	137	29	.25	12-36	-240'/-305'	Frac 8-71; 106 BFPD, 53% WC, 310 GOR
16706	514	199	0	0	0	66	134	0	.1	05-37	-189'/-308'	Frac 6-72 & TA; Replaced By #16714
16714	187	635	0	0	0	63	136	1	-	12-76	-215'/-313'	Test Water -320'/-337'; 224 BFPD, 80% WC

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
16801	564	1724	0	0	0	1	134	65	0	01-37	-212'/-317'	Mult PB +33'/-155'; 10 BFPD, 29000 GOR
16802	489	717	0	0	0	16	144	40	.2	01-37	-227'/-316'	Mult PB -180'/-222', Frac; 11 BFPD, 8740 GOR
16803	664	335	0	0	0	28	144	28	.2	03-37	-222'/-313'	PB -288' On 1-50; 37 BFPD, 73% WC, 1165 GOR
16804	646	591	0	0	0	25	143	32	.2	03-37	-210'/-317'	PB -294' On 6-48; 70 BFPD, 87% WC, 1300 GOR
16805	481	1090	0	0	0	0	131	69	.15	04-37	-215'/-308'	PB +51'/-197'; 13 BFPD, 51% WC, 1280 GOR
16806	656	651	0	0	0	2	145	53	.2	05-37	-217'/-308'	PB -263' & Frac 4-57; 27 BFPD, 34% WC, 628 GOR
16901	376	839	0	0	0	0	113	87	0	11-35	-196'/-323'	Mult PB +57'/-63'; Gas Well TA In 1984
17004	295	1884	0	0	0	1	140	59	0	03-36	-225'/-325'	TA 7-53 @ 100% WC; Replaced By #17011
17011	75	1347	0	0	0	13	142	45	-	12-54	-191'/-206'	PB & Frac; PB -62'/-116'; 256 BFPD, High GOR
17005	375	714	0	0	0	0	92	108	0	06-36	-228'/-328'	Mult PB -193'/-213'; Frac; 99 BFPD, High GOR
17101	446	993	0	0	0	24	135	41	.1	08-37	-230'/-311'	Mult PB -176'/-221'; 2 Frac; 56 BFPD, 2150 GOR
17102	540	483	0	0	0	33	141	26	.3	05-37	-232'/-311'	2 Frac; Add Pf -224'; 75 BFPD, 76% WC, 325 GOR
17208	272	693	0	0	0	0	107	93	0	04-37	-233'/-328'	PB -197'/-217'; TA 1954/69, PB Gas Cap; TA 2-81
17303	351	770	0	0	0	0	87	113	0	02-36	-224'/-329'	TA 6-54 @ 690 BFPD, 94% WC; Replaced By #17312
17312	42	461	0	0	0	0	104	96	-	01-55	-129'/-145'	WC 97% On 2-71, PB +135'/-86'; Gas Well TA 7-80
17306	365	3802	0	0	0	0	95	105	0	02-37	-235'/-330'	Mult PB +129'/+17'; Gas Well + 245 BWPD
17307	396	3415	0	0	0	0	111	89	0	03-37	-216'/-326'	Mult PB +115'/-46'; Gas Well + 28 BFPD
17401	322	603	0	0	0	0	107	93	0	11-35	-249'/-327'	Mult PB -13'/-18'; Gas Well, TA 9-84
17402	299	134	0	0	0	0	57	143	0	11-35	-249'/-327'	TA 10-54 @ 103 BFPD, 62% WC; Replaced By #17412
17412	12	183	0	0	0	0	50	150	-	12-65	-120'/-126'	High WC below -186'; TA 10-73 @ 93 BFPD, 99% WC
17403	236	546	0	0	0	0	101	99	0	07-36	-241'/-326'	TA 1-49/1-52; TA 9-52 @ 215 BFPD, 94% WC
17404	335	519	0	0	0	0	97	103	0	07-36	-247'/-314'	Mult PB -117'/-123'; TA 9-72 @ 185 BFPD, 99% WC
17405	260	177	0	0	0	1	132	67	0	12-36	-209'/-300'	PB -257' On 7-52; PB 10-58?; Gas Well TA 9-87
17501	386	975	0	0	0	0	62	138	0	03-36	-261'/-324'	Mult PB -150'/-160'; TA 7-55 @ 218 BFPD, 95% WC
17502	353	417	0	0	0	0	81	119	0	06-36	-222'/-329'	Mult PB; TA 1958/73; PB +153'/-19'; TA 2-88
17505	370	247	0	0	0	1	132	67	0	03-37	-221'/-308'	Mult PB -187'/-189'; TA 6-61 @ 80 BFPD, 98% WC
17506	332	460	0	0	0	0	85	115	0	03-37	-244'/-318'	Mult PB; TA 1959/73, High WC; PB Gas Cap 5-73
17602	374	714	0	0	0	0	113	87	0	04-36	-219'/-328'	PB -238'; TA 1957/69, High WC; PB Gas Cap 3-69
17706	275	1130	0	0	0	0	128	72	0	12-36	-194'/-300'	Mult PB; TA 1957/72, PB Gas Cap 9-70; TA 1-77
17707	253	123	0	0	0	0	84	116	0	03-37	-248'/-323'	PB?; TA 1963/72 & Replaced By #17713; TA 1-77
17713	3	83	0	0	0	0	108	92	-	07-63	-126'/-132'	Replace #17707; TA 11-64 @ 191 BFPD, 98%WC
17708	264	1118	0	0	0	0	106	94	0	02-37	-255'/-311'	Mult PB +114'/-123'; Gas Well TA 1-77
17803	351	763	0	0	0	0	24	176	0	01-37	-232'/-318'	Mult PB +54'/-123'; TA 2-87 @ 2 BFPD, 2 MCFD
17804	319	416	0	0	0	0	21	179	0	01-37	-156'/-319'	Mult PB To Gas Cap; TA 9-86 @ 3 BFPD, 2 MCFD
17901	120	492	0	0	0	0	0	200	0	03-37	-74'/-327'	Lnr PB -158'/-196'; TA 2-52 @ 148 BFPD, 94% WC
18001	249	229	0	0	0	0	67	133	0	11-36	-218'/-325'	Mult PB, High WC; PB Gas Cap 9-69; TA 4-77
18002	300	333	0	0	0	0	84	116	.05	01-37	-256'/-325'	Mult PB -194'/-224';TA 10-79 @ 12 BFPD,1140 GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
18003	310	1088	0	0	0	0	87	113	0	04-37	-262'/-325'	Mult PB, High WC; PB Gas Cap 10-69; TA 1-85
18004	204	126	0	0	0	0	108	92	0	03-37	-256'/-325'	PB -134'/-204; TA 8-61 @ 237 BFPD, 97% WC
18009	21	366	0	0	0	0	118	82	-	07-64	-156'/-257'	Replace #18004; PB +59'/-106'; Gas Well TA 1-78
18104	524	450	0	0	0	22	131	47	.05	02-37	-259'/-323'	PB -180'/-200' 10-68; 47 BFPD, 94% WC, 1540 GOR
18201	105	3	0	0	0	0	0	200	0	06-37	-280'/-313'	TA 3-44 @ 66 BFPD, 31% WC, High GOR
18301	473	1717	0	0	0	0	60	140	0	11-36	-236'/-320'	Mult PB -144'/-154';TA 2-70 @ 1000 BFPD, 99% WC
18302	461	1435	0	0	0	0	116	84	0	03-37	-232'/-298'	Mult PB +47'/-118'; Gas Well TA 10-78
18401	497	5951	0	0	0	0	57	143	0	09-36	-262'/-324'	Mult PB -97'/-140'; TA 7-84 @ 2100 BFPD, 99% WC
18402	489	3642	0	0	0	0	69	131	0	11-36	-266'/-329'	Mult PB -5'/-130'; TA 6-84 @ 2200 BFPD, 99% WC
18501	432	805	0	0	0	0	117	83	0	01-37	-209'/-276'	Mult PB +29'/-149'; Gas Well TA 11-78
18601	449	1288	0	0	0	0	117	83	0	12-36	-245'/-307'	Mult PB -193'/-213'; TA 7-72 @ 279 BFPD, 98% WC
18603	433	1669	0	0	0	0	132	68	0	03-37	-254'/-324'	Mult PB +58'/-134'; Gas Well TA 12-79
18701	523	473	0	0	0	62	126	12	.05	03-37	-238'/-298'	PB -171'/-256';TA 5-72 @ 63 BFPD,95%WC,4100 GOR
18702	604	1173	0	0	0	20	128	52	.05	04-37	-230'/-301'	PB -264'; PB -190'/-222'; 82 BFPD, 93% WC
18703	480	273	0	0	19	91	90	0	.45	06-37	-198'/-299'	No PB?; TA 7-86 @ 28 BFPD, 82% WC, 1210 GOR
18801	536	1410	0	0	0	37	126	37	.05	03-37	-243'/-325'	PB -204'/-222' 1-69; 202 BFPD, 99% WC, 705 GOR
18802	548	991	0	0	0	55	126	19	.1	04-37	-210'/-315'	PB -183'/-210' 4-69; 43 BFPD, 74% WC, 6385 GOR
18803	408	96	0	0	26	91	83	0	.55	05-37	-122'/-296'	Frac Lnr -193'/-264'; 28 BFPD, 91% WC, 2530 GOR
18804	223	33	0	1	82	89	28	0	.6	06-37	-147'/-350'	DD -389' On 7-39; TA 5-54 @ 30 BFPD, 80% WC
18901	438	2306	0	0	0	0	128	72	0	01-37	-260'/-328'	Mult PB & WO; TA 7-84 @ 100% Water -204'/-244'
18909	3	0	0	0	0	0	132	68	-	08-71	+19'/-220'	Completion Interval?; Gas Well TA 9-80
18902	458	1700	0	0	0	23	128	49	0	05-37	-248'/-328'	Mult PB -139'/-159'; Gas Well TA 1-81
18903	495	2311	0	0	0	59	128	13	.05	04-37	-242'/-320'	PB -206'/-212' On 3-72, WC Reduced; TA 2-86
18904	494	1229	0	0	0	55	127	18	.15	05-37	-242'/-328'	PB -185'/-218' 10-71; 5 BOPD, 0% WC,10200 GOR
18905	467	6165	0	0	32	85	83	0	.1	06-37	-228'/-323'	No PB; TA 6-85 @100% Water
18906	564	8783	0	0	27	89	84	0	.1	06-37	-230'/-326'	No PB?; Install Sub Pump 6-80; TA 6-86 @ 99% WC
18907	401	104	0	0	65	90	45	0	.15	09-37	-111'/-329'	Test 250 BWPD On 11-61, PB -45'/-86'; TA 8-87
18908	401	395	0	3	91	87	19	0	.15	08-37	-141'/-318'	No PB; TA 6-63 @ 428 BFPD, 99% WC, Low GOR
19115	102	473	0	19	76	94	11	0	.3	11-37	-99'/-356'	No PB; TA 7-52 @ 63 BFPD, 96% WC
19116	14	71	0	43	77	80	0	0	.4	01-39	-121'/-394'	No PB; TA 1-40 @ 186 BFPD, 83% WC
19208	79	65	140	54	6	0	0	0	.5	10-47	-319'/-354'	No PB; TA 10-74 @ 7 BFPD, 15700 GOR
19301	316	58	48	60	86	6	0	0	.5	01-39	-176'/-250'	PB -217' On 8-67 & Reclassified As Eumont Well
19407	460	188	0	0	0	104	96	0	.35	07-37	-224'/-311'	Add Pf-54';TA 12-83 @ 85 BFPD, 98% WC, High GOR
19408	698	201	0	0	49	106	45	0	.3	08-37	-199'/-304'	Pf Lnr -119'/-299'; 139 BFPD, 64% WC, 1500 GOR
19409	377	105	0	0	58	121	21	0	.5	05-38	-185'/-300'	DD; Lnr Pf-301'/-339'; TA 1-87 @ 20 BFPD
19410	438	139	0	30	92	78	0	0	.5	11-37	-180'/-296'	DD; Lnr Pf-182'/-354';55 BFPD, 45% WC, 2675 GOR
19411	586	433	0	27	85	88	0	0	.25	11-37	-177'/-300'	No PB; 73 BFPD, 88% WC, 1950 GOR
19412	248	26	52	48	94	6	0	0	.6	12-37	-186'/-300'	DD; Lnr Pf-269'/-294'; TA 1-67 @ 12 BFPD
19413	368	94	0	13	90	97	0	0	.6	02-38	-192'/-300'	DD; Lnr Pf-163'/-343';37 BFPD, 70% WC, 1620 GOR
19414	355	76	20	45	107	28	0	0	.6	03-38	-178'/-300'	Pf Lnr -255'/-267'; 19 BFPD, 60% WC, 1290 GOR
19415	265	265	37	40	97	26	0	0	.5	06-38	-167'/-300'	Pf Lnr -70'/-295'; TA 9-87 @ 5 BFPD, High GOR

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
19501	447	753	80	46	74	0	0	0	.15	03-38	-156'/-300'	PB?, WC Varies; 69 BFPD, 89% WC, 6460 GOR
19502	305	697	90	41	69	0	0	0	.15	06-38	-175'/-300'	PB?, WC Varies; TA 5-86 @ 14 BFPD, High GOR
19601	354	833	0	0	0	38	146	16	.1	02-37	-222'/-329'	Mult PB -269'; 87 BFPD, 98% WC, 1700 GOR
19602	262	210	0	0	0	105	95	0	.1	05-37	-215'/-325'	PB +5'/-145' On 8-43; SI 9-54 @ 76 BFPD, 70% WC
19602Y	25	233	0	0	0	92	108	0	-	10-59	-194'/-218'	Replace #19602; Frac; TA 5-67 @ 64 BFPD, 94% WC
19603	150	417	0	0	0	81	119	0	.1	07-37	-212'/-323'	PB -276; TA 11-46 @ 97% WC; PB, Test, TA 9-53
19604	606	566	0	0	39	124	37	0	.3	09-37	-148'/-323'	Lnr PB -231'/-276'; 99 BFPD, 87%WC, 394 GOR
19701	366	2035	0	0	0	8	143	49	.2	04-37	-214'/-320'	PB -254' On 5-52, Reduce WC; TA 5-88 @ 8 BFPD
19702	399	178	0	0	0	64	136	0	.45	05-37	-211'/-325'	No PB; TA 8-83 @ 21 BFPD, 67% WC, 2775 GOR
19801	657	1984	0	0	0	7	142	51	.1	05-37	-221'/-307'	PB -288' On 7-48; 138 BFPD, 87% WC, 486 GOR
19802	592	229	0	0	0	28	140	32	.4	05-37	-227'/-312'	No PB; 38 BFPD, 57% WC, 383 GOR
19901	426	108	0	0	77	123	0	0	.6	09-37	-212'/-328'	No PB; WC? 1963; 22 BFPD, 4% WC, 1520 GOR
19902	258	983	0	49	84	67	0	0	.3	10-37	-208'/-324'	High WC After Frac; PB-261'; TA 5-64 @ 98% WC
20001	151	138	0	0	0	122	78	0	.3	07-37	-232'/-320'	Lnr PB -239'/-257' 1-48;TA 2-48 @ 64 BFPD,83%WC
20002	153	174	0	0	38	121	41	0	.4	03-37	-228'/-310'	TA 1952/62, PB -152'/-205'; TA 2-64 @ 28 BFPD
20102	586	1861	0	0	0	87	113	0	.15	05-37	-223'/-310'	High WC After Frac On 6-55; TA 2-78 @ 91% WC
20205	617	204	0	0	0	38	136	26	.35	03-37	-226'/-325'	PB -243' & Frac 3-59; 35 BFPD, 9% WC, 465 GOR
20301	436	1302	0	0	0	69	131	0	.15	05-37	-221'/-325'	PB -280'; TA 4-82 @ 156 BFPD, 98% WC, 3400 GOR
20302	330	130	0	0	1	124	75	0	.55	06-37	-205'/-325'	No PB?, WC Varies; 10 BFPD, 54% WC, 236 GOR
20401	342	2461	0	0	0	3	132	65	.05	02-37	-217'/-320'	Mult PB +59'/-101'; TA 5-86 @ 7 BFPD, 3700 GOR
20402	248	34	0	0	0	70	118	12	.6	03-37	-190'/-328'	TA 1960/71, PB -72'/-174'; Gas Well TA 6-77
20403	209	582	0	0	12	112	76	0	.2	03-37	-198'/-326'	TA 5-51 @ 98% WC; Test -130'/-184' & TA 5-52
20404	408	79	0	0	34	104	62	0	.6	06-37	-189'/-320'	No PB; 12 BOPD, 0% WC, 837 GOR
20405	273	274	0	0	0	21	127	52	.3	06-37	-192'/-325'	Lnr PB, Pf -149'/-192'?; TA 4-70 @ 24 BFPD
20406	127	20	0	0	71	112	17	0	.6	07-37	-147'/-330'	Rate Decreases 2-46?; TA 7-48 @ 3 BFPD
20407	145	20	0	0	34	112	54	0	.6	09-37	-142'/-330'	Rate Decreases 2-46?; TA 2-53 @ 4 BFPD
20501	217	1805	0	0	0	18	129	53	.1	12-36	-243'/-310'	No PB; TA 9-52 @ 1052 BFPD, 99% WC
20601	411	598	0	0	0	14	132	54	.05	02-37	-238'/-299'	Mult PB +78'/-183'; 34 BFPD, 82% WC, 4300 GOR
20701	348	2249	0	0	0	0	117	83	0	03-37	-224'/-299'	Mult PB +90'/+71'; Gas Well TA 1-85
20702	307	1654	0	0	0	71	126	3	.05	04-37	-201'/-301'	Mult PB -1'/-12'; Gas Well TA 1-85
20703	337	130	0	0	0	50	129	21	.4	05-37	-202'/-300'	PB -287: PB -250'; High GOR Well TA 4-75
20801	592	82	0	0	0	80	120	0	.6	12-36	-230'/-322'	No PB; 16 BFPD, 30% WC, 582 GOR
20802	610	380	0	0	0	18	127	55	.3	06-37	-216'/-315'	No PB; 91 BFPD, 89% WC, 990 GOR
20803	690	110	0	0	0	35	126	39	.5	06-37	-210'/-320'	No PB; 32 BFPD, 45% WC, 926 GOR
20804	462	79	0	0	0	83	117	0	.6	07-39	-191'/-318'	No PB; 22 BFPD, 71% WC, 2850 GOR
20901	117	36	0	0	0	63	126	11	.25	07-63	-203'/-242'	Replace #20902; Frac; 17 BFPD, 38% WC, 8440 GOR
20902	275	0?	0	0	0	69	126	5	-	04-37	-198'/-311'	Mult PB -155'/-167' To Escape Water;WC?;TA 2-54
20902R	380	51?	0	0	0	9	128	63	.1	01-37	-212'/-307'	Mult PB -118'/-128'; Cum Water Low?; TA 8-79

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
21002	451	1913	0	0	0	0	111	89	0	02-37	-250'/-320'	Mult PB +20'/-81'; Gas Well TA 6-79
21004	411	403	0	0	0	0	86	114	0	03-37	-255'/-325'	PB -175'/-205'; TA 5-66 @ 307 BFPD, 99% WC
21006	462	681	0	0	0	8	130	62	0	03-37	-251'/-318'	PB -166'/-212' On 5-57; TA 6-78 @ 92% WC
21007	471	2403	0	0	0	8	130	62	0	05-37	-255'/-326'	PB -172'/-208'; 99% WC,PB Gas Cap 3-70; TA 6-79
21008	450	4327	0	0	0	0	115	85	.05	05-37	-257'/-325'	Mult PB -165'/-189';15 BFPD,PB Gas Cap;TA 10-78
21105	413	4951	0	0	0	21	126	53	0	04-37	-255'/-324'	Mult PB -174'/-188';TA 10-64 @ 433 BFPD, 97% WC
21109	1	0	0	0	0	11	128	61	-	06-68	-18'/-122'	Frac & Test Water -18'/-218'; Gas Well TA 1-78
21109A	0	0	0	0	0	8	127	65	-	06-78	+33'/-139'	Replacement Well Completed In Gas Cap
21202	264	69	0	0	17	93	90	0	.5	04-37	-200'/-315'	Run Lnr,Frac-203'/-307'; PB-122'/-188',High GOR
21203	418	40	0	0	30	90	80	0	.6	05-37	-174'/-315'	No PB; 13 BOPD, Trace Water, 5460 GOR
21204	143	75	0	0	59	100	41	0	.6	05-37	-185'/-314'	Frac 10-55; PB -122'/-145'& Frac 6-69; High GOR
21301	238	212	0	0	0	54	126	20	.3	03-37	-203'/-314'	PB -272' On 8-52, High WC; TA 4-53 @ 6 BFPD
21401	403	760	0	0	0	52	128	20	.05	05-37	-231'/-298'	Mult PB To Gas Cap
21402	353	762	0	0	0	30	125	45	.05	05-37	-229'/-315'	Mult PB To Gas Cap
21501	398	1414	0	0	0	69	126	5	.15	08-36	-180'/-345'	PB -209, 2 Frac; CO & Pf -217'/-255'; 5 BFPD
21502	277	2023	0	0	0	55	125	20	.1	03-37	-151'/-339'	Mult PB -191'; Frac 9-56; TA 12-58 @ 5 BFPD
21601	444	452	0	0	0	56	134	10	.05	03-37	-238'/-314'	PB -198'/-212'; TA 12-84 @ 54 BFPD, 99% WC
21701	367	14?	0	0	0	46	134	20	.15	03-37	-139'/-336'	Report High WC 1956, PB-206', Frac; Gas SI 3-89
21702	362	1?	0	0	0	41	132	27	.1	04-37	-136'/-289'	Report High WC 1958, PB-182', Frac; Gas Well
21801	443	185	0	0	0	81	119	0	.3	03-37	-111'/-301'	Run Lnr,Pf-132'/-273';2 Frac; TA 8-83 @ 15 BFPD
21802	440	471	0	0	0	67	132	1	.15	07-37	-148'/-315'	Run Lnr,Pf-220'/-233' 1964; TA 4-65 @ 24 BFPD
21803	493	876	0	0	34	88	78	0	.1	08-37	-138'/-325'	No PB; TA 12-82 @ 160 BFPD, 98% WC
21804	88	0	0	0	40	93	67	0	.3	03-38	-146'/-300'	TA 5-54 @ 3 BOPD; Replaced By #21805
21805	88	194	0	0	53	94	53	0	-	08-63	-212'/-266'	Commingled Tubb & Grayburg Zones; TA 9-86
21901	1	0	0	0	0	0	131	69	.05	06-37	-140'/-317'	TA 8-38 @ 13 BOPD; Replaced By #21902
21902	440	777	0	0	0	4	131	65	-	12-38	-202'/-296'	High WC In 1978, PB +74'/+5'; Gas Well
22001	432	631	0	0	0	58	128	14	.1	05-37	-231'/-306'	PB -173'/-232', Reduce WC; PB +37'/-152', Gas
22101	334	861	0	0	4	98	98	0	.05	10-36	-219'/-320'	PB -71'/-161'; TA 10-70 @ 148 BFPD, 96% WC
22102	289	597	0	0	0	84	116	0	.15	03-37	-238'/-322'	Mult PB -178'/-197'; Frac; TA 9-64 @ 9 BFPD
22201	445	1555	0	0	10	93	97	0	.2	06-37	-231'/-325'	PB -205'/-225'; Frac; TA 7-73 @ 7 BOPD
22202	368	916	0	0	0	68	132	0	.1	05-38	-234'/-294'	PB -206'/-216'; 35 BFPD, 56% WC, 135 GOR
22203	6	43	0	0	52	88	60	0	.4	08-51	-300'/-335'	No PB; TA 3-53 @ 25 BFPD, 88% WC
22301	145	160	0	0	0	79	121	0	.1	07-59	-174'/-202'	Add Pf -202'/-240', 2 Frac; 26 BFPD, 5040 GOR
22302	299	1534	0	0	0	83	117	0	-	09-36	-74'/-314'	Mult PB -56'/-207', Frac; 3 BFPD, High GOR
22401	234	426	0	0	72	92	36	0	.2	06-38	-86'/-359'	PB?, WC Varies; TA 4-68 @ 7 BFPD,17000 GOR
22402	337	650	0	0	92	95	13	0	.2	08-38	-84'/-356'	No PB; TA 6-70 @ 153 BFPD, 98% WC, 1740 GOR
22403	59	6	0	0	16	94	90	0	.4	12-38	-191'/-284'	No PB; TA 10-42 @ 41 BFPD, 11% WC

APPENDIX B (CONTINUED)

WELL NUMBER	CUM THRU 07-89 (MBO)	PROD 07-89 (MBW)	GROSS OIL COLUMN THICKNESS (-150'/-350') PEN	G1	G2	G3	G3C	SA	S/P RATIO	ORIGINAL COMPLETION DATE	INTERVAL	GENERAL COMMENTS CONCERNING WELL HISTORY & CURRENT STATUS WO, PB, TA, Producing Rates, Water Cuts, Etc.
22404	138	1162	0	0	0	59	133	8	.1	02-39	-160'/-300'	No PB; TA 6-63 @ 371 BFPD, 99% WC
22405	285	2264	0	0	40	102	58	0	.1	04-39	-226'/-300'	No PB; TA 7-79 @ 97 BFPD, 97% WC
22406	171	474	0	31	85	84	0	0	.3	06-39	-223'/-351'	Pf Lnr -260'/-351'; PB 2-59?; TA 9-69 @ 8 BFPD
22407	112	53	0	0	48	88	64	0	.6	07-39	-192'/-295'	DD, Pf Lnr -305'/-317'; TA 4-68 @ 2 BOPD
22408	202	190	0	5	77	112	6	0	.5	09-39	-209'/-320'	PB?; TA 2-86 @ 23 BFPD, 60% WC, 7980 GOR
22501	464	57	85	58	57	0	0	0	.6	01-38	-177'/-290'	Penrose & Gbg Well; 18 BFPD, 45% WC, 2915 GOR
22502	395	42	99	62	39	0	0	0	.6	03-38	-179'/-300'	Penrose & Gbg Well; 13 BFPD, 30% WC, 692 GOR
22602	961	105	0	0	0	65	126	9	.35	07-37	-193'/-321'	PB -315'?; 91 BFPD, 27% WC, 127 GOR
22604	52	0	0	0	25	111	64	0	.6	08-37	-147'/-322'	TA 10-43 @ 8 BOPD, High GOR; Replaced By #22616
22616	5	436	0	0	36	103	61	0	0	07-80	-361'/-401'	Complete Below WOC; TA 10-83 @ 364 BFPD, 99% WC
22607	209	377	0	28	85	87	0	0	.3	09-37	-198'/-306'	TA 11-70 @ 64 BFPD, 88%WC, 314 GOR; PB Test Dry
22608	469	847	0	0	47	112	41	0	.1	10-37	-194'/-307'	No PB; 238 BFPD, 98% WC, 4430 GOR
22609	243	331	0	3	86	99	12	0	.2	10-37	-187'/-311'	Mult PB Test High WC; PB -46'/-77' & TA 11-54
22610	495	64	0	0	0	74	126	0	.55	11-37	-180'/-319'	No PB; 10 BFPD, 29% WC, 116 GOR
22611	244	153	0	0	55	100	45	0	.5	11-37	-192'/-318'	Frac; DD -358'; 19 BFPD, 88% WC, 3500 GOR
22612	462	190	40	53	84	23	0	0	.5	11-37	-189'/-301'	No PB?; SI 3-89 @ 12 BFPD, 73% WC, 370 GOR
22613	369	121	0	28	90	82	0	0	.5	01-38	-186'/-307'	WC Varies; PB & TA 6-67; PB Penrose Gas 11-70
22614	322	433	51	58	91	0	0	0	.35	04-38	-189'/-301'	TA 1969/71;Frac 4-78; 61 BFPD, 95% WC,29200 GOR
22711	388	2364	35	43	83	39	0	0	.1	11-37	-174'/-301'	No PB; 250 BFPD, 94% WC, 1570 GOR
22712	236	359	0	40	81	79	0	0	.35	12-37	-205'/-300'	PB 1951?/60?/75?; 21 BFPD, 94% WC, 6590 GOR
22713	247	50	61	52	87	0	0	0	.6	01-38	-177'/-299'	Run Lnr 8-60, Pf -241'/-288'; 9 BFPD, 5400 GOR
22714	221	45	58	54	88	0	0	0	.6	04-38	-179'/-300'	No PB; 2 BFPD, 38% WC,12450 GOR
23502	168	78	0	41	78	81	0	0	.55	12-36	-161'/-340'	TA 1966/83; Add Pf-13'/-138'; 24 BFPD,22300 GOR
23506Y	44	87	0	0	0	65	129	6	.4	12-39	-231'/-310'	PB-185'/-211' 9-54; TA 9-57 @ 18 BFPD, 81% WC
23704	38	4	0	0	2	101	97	0	.6	06-39	-212'/-300'	Low Rate 10-59, PB -85'/-115'; Gas Well TA 5-77
23705	58	30	0	0	44	88	68	0	.5	09-39	-187'/-302'	Add Pf To -95'; DD -334' 5-84; 8 BFPD, Low GOR
23708	6	178	0	0	60	88	52	0	-	08-84	-178'/-350'	PB -330' On 7-85; 67 BFPD, 99% WC,11940 GOR
23711	0	0	0	2	72	90	36	0	.6	06-71	-139'/-231'	Gas Well TA 11-83

APPENDIX B
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
ASSESSMENT OF S/P RATIO BY WELL

GUIDELINES FOR REVIEWING APPENDIX B

- A one line summary is provided for each well in the original Monument study area -- key information includes:
  - Reported cumulative oil and water production through July, 1989
  - Gross thickness of each zone in the original oil column (between GOC of -150′ and WOC of -350′)
  - Assigned secondary-to-primary (S/P) ratio
  - Date & subsea interval of the original Grayburg/San Andres completion
  - Well history and current status (producing rate on 7-89 if active, last reported rate if TA)
- Two wells on a single 40-acre proration unit are enclosed by horizontal dashed lines -- one S/P ratio per proration unit
- Questionable or unsubstantiated information is indicated by a question mark

INDEX TO ABBREVIATIONS

BFPD -- Barrels Fluid/Day	CO -- Cleaned Out	Csg -- Casing	Cum -- Cumulative
DD -- Drill Deeper	Frac -- Fracture treatment	Gbg -- Grayburg	G1 -- Grayburg Zone 1
G2 -- Grayburg Zone 2	G3 -- Grayburg Zone 3	G3C -- Grayburg Zone 3C	GOR -- Gas Oil Ratio
Lnr -- Liner	Mult -- Multiple	PB -- Plug Back	Pf -- Perforations
Sub -- Submersible	TA -- Temporarily Abandoned	WC -- Water Cut	WO -- Workover

APPENDIX C
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
TABULATION OF POTENTIAL PARTICIPATION PARAMETERS -- TRACT SUMMARY
(PARAMETERS 1 THROUGH 5)

TRACT NO.	SURFACE ACRES		CUM. OIL THRU 07-89		CURRENT OIL		CURRENT GAS		REM PRIMARY OIL	
	VALUE	PERCENT	MSTB	PERCENT	MSTB	PERCENT	MMSCF	PERCENT	MSTB	PERCENT
1	40.000	0.29674	3.456	0.00223	0.0	0.0	0.0	0.0	0.0	0.0
2	40.000	0.29674	8.291	0.00535	0.0	0.0	0.0	0.0	0.0	0.0
3	40.000	0.29674	107.017	0.06911	0.0	0.0	0.0	0.0	0.0	0.0
4	40.000	0.29674	53.065	0.03427	0.578	0.04107	1.855	0.04405	0.0	0.0
5	80.000	0.59347	700.096	0.45210	11.009	0.78218	19.047	0.45233	49.204	0.34949
6	80.000	0.59347	354.398	0.22886	1.790	0.12718	11.800	0.28023	17.498	0.12428
7	40.000	0.29674	378.698	0.24455	2.317	0.16462	6.884	0.16348	16.781	0.11919
9	80.000	0.59347	252.472	0.16304	0.678	0.04817	10.360	0.24603	3.316	0.02355
10	40.000	0.29674	43.058	0.02781	0.0	0.0	0.0	0.0	0.0	0.0
11	40.000	0.29674	179.107	0.11566	0.874	0.06210	0.0	0.0	1.245	0.00884
12	40.000	0.29674	479.001	0.30932	1.405	0.09982	5.347	0.12698	5.730	0.04070
13	40.000	0.29674	548.136	0.35397	1.764	0.12533	11.443	0.27175	6.807	0.04835
14	160.000	1.18694	2254.614	1.45595	18.990	1.34922	28.512	0.67711	176.050	1.25044
15	80.000	0.59347	1211.970	0.78265	12.846	0.91269	23.159	0.54999	134.201	0.95320
16	160.000	1.18694	3812.276	2.46183	61.157	4.34514	73.247	1.73949	393.758	2.79678
17	80.000	0.59347	1451.729	0.93748	14.084	1.00065	20.778	0.49344	150.086	1.06603
18	160.000	1.18694	1724.001	1.11330	2.604	0.18501	5.262	0.12496	29.035	0.20623
19	240.000	1.78041	2518.807	1.62656	17.315	1.23021	29.758	0.70670	192.351	1.36623
20	160.000	1.18694	1013.586	0.65454	8.513	0.60484	70.199	1.66711	30.323	0.21538
21	120.000	0.89021	14.729	0.00951	0.0	0.0	0.0	0.0	0.0	0.0
22	40.000	0.29674	81.444	0.05259	0.382	0.02714	17.292	0.41066	1.720	0.01222
23	80.000	0.59347	247.158	0.15961	0.302	0.02146	32.507	0.77199	1.781	0.01265
24	160.000	1.18694	1669.821	1.07831	3.258	0.23148	121.964	2.89644	23.783	0.16893
25	80.000	0.59347	1391.376	0.89850	14.285	1.01493	23.202	0.55101	67.126	0.47678
26	80.000	0.59347	1882.816	1.21586	35.504	2.52252	66.725	1.58461	261.893	1.86017
27	40.000	0.29674	597.022	0.38554	5.769	0.40988	22.956	0.54517	60.299	0.42829
28	280.000	2.07715	6578.245	4.24800	99.431	7.06446	103.321	2.45370	678.269	4.81760
29	40.000	0.29674	983.065	0.63483	18.897	1.34261	8.494	0.20172	325.803	2.31411
30	40.000	0.29674	1128.843	0.72897	28.199	2.00351	22.166	0.52641	314.419	2.23325
31	80.000	0.59347	1763.393	1.13874	24.574	1.74595	34.541	0.82029	262.643	1.86550
32	80.000	0.59347	2129.416	1.37510	56.802	4.03572	17.367	0.41244	633.342	4.49849
33	80.000	0.59347	1664.030	1.07457	37.496	2.66405	47.847	1.13629	314.782	2.23583
34	80.000	0.59347	1422.981	0.91891	4.766	0.33862	8.779	0.20849	51.647	0.36684
35	80.000	0.59347	785.946	0.50754	2.843	0.20199	23.824	0.56578	16.032	0.11387
36	80.000	0.59347	357.564	0.23090	0.807	0.05734	33.192	0.78825	4.561	0.03240
37	80.000	0.59347	1500.806	0.96917	12.351	0.87752	17.611	0.41823	115.401	0.81967
38	160.000	1.18694	2732.361	1.76446	23.761	1.68819	42.914	1.01914	259.304	1.84178
39	80.000	0.59347	631.737	0.40795	1.059	0.07524	26.731	0.63482	6.492	0.04611
40	40.000	0.29674	602.161	0.38885	5.349	0.38004	39.044	0.92723	27.347	0.19424
41	40.000	0.29674	428.597	0.27677	0.0	0.0	0.0	0.0	0.0	0.0
42	80.000	0.59347	43.473	0.02807	0.823	0.05847	42.808	1.01662	6.167	0.04380
43	40.000	0.29674	313.560	0.20249	1.049	0.07453	20.440	0.48542	8.091	0.05747
44	40.000	0.29674	54.195	0.03500	1.356	0.09634	7.823	0.18578	10.731	0.07622

APPENDIX C (CONTINUED)

TRACT NO.	SURFACE ACRES		CUM. OIL THRU 07-89		CURRENT OIL		CURRENT GAS		REM PRIMARY OIL	
	VALUE	PERCENT	MSTB	PERCENT	MSTB	PERCENT	MMSCF	PERCENT	MSTB	PERCENT
45	40.000	0.29674	454.590	0.29356	1.349	0.09585	1.499	0.03560	9.121	0.06478
46	40.000	0.29674	18.467	0.01193	0.0	0.0	0.0	0.0	0.0	0.0
47	80.000	0.59347	180.333	0.11645	0.0	0.0	0.0	0.0	0.0	0.0
48	160.000	1.18694	622.780	0.40217	4.585	0.32576	3.592	0.08530	32.962	0.23412
49	80.000	0.59347	3.896	0.00252	0.0	0.0	0.0	0.0	0.0	0.0
50	80.000	0.59347	183.996	0.11882	0.525	0.03730	1.088	0.02584	0.0	0.0
51	40.000	0.29674	51.202	0.03306	0.0	0.0	0.0	0.0	0.0	0.0
52	40.000	0.29674	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	40.000	0.29674	29.342	0.01895	0.0	0.0	0.0	0.0	0.0	0.0
54	40.000	0.29674	167.611	0.10824	0.0	0.0	0.0	0.0	0.0	0.0
55	80.000	0.59347	56.361	0.03640	0.223	0.01584	25.023	0.59425	0.924	0.00656
56	160.000	1.18694	1731.323	1.11803	10.722	0.76179	7.972	0.18932	148.518	1.05489
57	160.000	1.18694	2582.406	1.66763	21.971	1.56101	42.767	1.01564	239.467	1.70088
58	80.000	0.59347	1933.905	1.24885	26.719	1.89835	15.742	0.37385	312.832	2.22198
59	40.000	0.29674	35.951	0.02322	0.0	0.0	0.361	0.00857	0.0	0.0
60	80.000	0.59347	2018.632	1.30356	36.506	2.59371	30.406	0.72209	407.042	2.89113
61	40.000	0.29674	70.031	0.04522	0.342	0.02430	37.186	0.88311	1.842	0.01308
62	160.000	1.18694	4404.886	2.84452	96.589	6.86254	36.508	0.86700	1178.706	8.37209
63	160.000	1.18694	2401.058	1.55052	6.313	0.44853	35.924	0.85314	70.390	0.49996
64	160.000	1.18694	3878.855	2.50483	38.092	2.70639	26.915	0.63919	441.165	3.13350
65	160.000	1.18694	3313.221	2.13956	33.725	2.39612	43.242	1.02693	362.491	2.57469
66	80.000	0.59347	1164.434	0.75195	3.225	0.22913	2.441	0.05797	15.025	0.10672
67	80.000	0.59347	1364.386	0.88107	12.148	0.86310	18.244	0.43326	138.516	0.98385
68	80.000	0.59347	866.897	0.55981	4.056	0.28817	20.749	0.49275	31.083	0.22078
69	80.000	0.59347	1188.035	0.76719	6.610	0.46963	21.627	0.51361	54.239	0.38525
70	80.000	0.59347	1547.116	0.99907	15.842	1.12556	19.903	0.47266	154.847	1.09984
71	80.000	0.59347	1174.999	0.75877	5.331	0.37876	14.784	0.35110	64.224	0.45617
72	120.000	0.89021	967.101	0.62452	4.127	0.29322	44.941	1.06727	30.660	0.21777
73	40.000	0.29674	308.318	0.19910	0.0	0.0	0.0	0.0	0.0	0.0
74	120.000	0.89021	667.362	0.43096	0.630	0.04476	18.631	0.44246	2.550	0.01811
75	40.000	0.29674	22.572	0.01458	0.0	0.0	0.0	0.0	0.0	0.0
78	40.000	0.29674	283.328	0.18296	1.469	0.10437	32.755	0.77788	15.568	0.11058
79	40.000	0.29674	44.746	0.02890	1.022	0.07261	7.036	0.16709	2.362	0.01678
80	40.000	0.29674	204.987	0.13237	0.862	0.06124	6.981	0.16579	2.853	0.02026
81	40.000	0.29674	100.001	0.06458	0.0	0.0	0.0	0.0	0.0	0.0
82	40.000	0.29674	179.361	0.11582	2.694	0.19141	13.348	0.31699	26.382	0.18739
83	40.000	0.29674	199.658	0.12893	0.0	0.0	0.0	0.0	0.0	0.0
84	80.000	0.59347	443.688	0.28652	1.748	0.12419	74.421	1.76737	19.491	0.13844
85	240.000	1.78041	1476.301	0.95334	2.655	0.18863	271.948	6.45831	37.521	0.26650
86	240.000	1.78041	1891.320	1.22135	14.119	1.00314	93.223	2.21389	150.257	1.06724
87	40.000	0.29674	120.898	0.07807	1.246	0.08853	120.112	2.85246	13.892	0.09867
88	80.000	0.59347	604.265	0.39021	0.0	0.0	7.562	0.17958	0.0	0.0
89	40.000	0.29674	732.837	0.47324	8.038	0.57109	2.671	0.06343	88.153	0.62613
90	160.000	1.18694	3896.546	2.51625	78.194	5.55560	118.023	2.80285	871.864	6.19266
91	160.000	1.18694	3590.719	2.31876	55.140	3.91763	27.186	0.64562	584.184	4.14933
92	160.000	1.18694	2791.591	1.80271	27.926	1.98411	23.783	0.56481	303.741	2.15741

APPENDIX C (CONTINUED)

TRACT NO.	SURFACE ACRES		CUM. OIL THRU 07-89		CURRENT OIL		CURRENT GAS		REM PRIMARY OIL	
	VALUE	PERCENT	MSTB	PERCENT	MSTB	PERCENT	MMSCF	PERCENT	MSTB	PERCENT
93	160.000	1.18694	1956.398	1.26337	8.472	0.60193	7.496	0.17802	67.518	0.47957
94	160.000	1.18694	2740.984	1.77003	20.842	1.48080	142.292	3.37920	213.871	1.51908
95	80.000	0.59347	1403.302	0.90620	15.679	1.11398	6.636	0.15759	170.160	1.20861
96	80.000	0.59347	1363.489	0.88049	15.235	1.08243	25.072	0.59542	162.556	1.15460
97	160.000	1.18694	1716.656	1.10856	5.750	0.40853	140.354	3.33317	47.088	0.33446
98	120.000	0.89021	1928.685	1.24548	14.970	1.06360	7.976	0.18942	161.443	1.14669
99	40.000	0.29674	563.258	0.36373	0.0	0.0	97.251	2.30955	0.0	0.0
100	80.000	0.59347	1287.960	0.83172	17.981	1.27753	46.211	1.09743	225.052	1.59850
101	160.000	1.18694	1823.021	1.17724	10.475	0.74424	76.058	1.80625	108.651	0.77172
102	40.000	0.29674	408.017	0.26348	0.056	0.00398	2.387	0.05669	0.235	0.00167
103	40.000	0.29674	321.243	0.20745	0.862	0.06124	6.336	0.15047	1.768	0.01256
104	80.000	0.59347	657.290	0.42445	6.549	0.46530	17.183	0.40807	79.531	0.56489
105	40.000	0.29674	539.012	0.34808	4.143	0.29436	8.513	0.20217	45.158	0.32075
106	40.000	0.29674	193.287	0.12482	0.0	0.0	0.0	0.0	0.0	0.0
107	80.000	0.59347	612.239	0.39536	12.687	0.90140	80.988	1.92333	124.635	0.88526
108	80.000	0.59347	1144.997	0.73940	7.452	0.52946	5.211	0.12375	80.240	0.56993
109	160.000	1.18694	162.899	0.10519	1.538	0.10927	6.144	0.14591	6.924	0.04918
110	80.000	0.59347	549.032	0.35455	0.0	0.0	0.0	0.0	0.0	0.0
111	80.000	0.59347	209.046	0.13499	0.0	0.0	0.0	0.0	0.0	0.0
112	240.000	1.78041	124.723	0.08054	0.991	0.07041	42.305	1.00467	1.242	0.00882
113	80.000	0.59347	651.483	0.42070	0.0	0.0	0.0	0.0	0.0	0.0
114	40.000	0.29674	436.799	0.28207	1.434	0.10188	30.538	0.72523	7.630	0.05419
115	40.000	0.29674	1.303	0.00084	0.0	0.0	0.0	0.0	0.0	0.0
116	40.000	0.29674	4.404	0.00284	0.0	0.0	0.0	0.0	0.0	0.0
117	80.000	0.59347	196.245	0.12673	1.838	0.13059	50.027	1.18806	16.578	0.11775
118	80.000	0.59347	232.184	0.14994	0.902	0.06409	42.312	1.00484	9.232	0.06557
119	200.000	1.48368	1352.949	0.87369	0.751	0.05336	7.921	0.18811	0.0	0.0
120	40.000	0.29674	373.392	0.24112	0.0	0.0	0.0	0.0	0.0	0.0
121	40.000	0.29674	431.495	0.27864	0.0	0.0	0.0	0.0	0.0	0.0
122	160.000	1.18694	2686.429	1.73480	38.611	2.74327	23.224	0.55153	453.181	3.21885
123	40.000	0.29674	344.708	0.22260	0.0	0.0	0.0	0.0	0.0	0.0
124	40.000	0.29674	616.324	0.39800	3.762	0.26729	13.733	0.32614	41.946	0.29793
125	40.000	0.29674	512.591	0.33101	1.141	0.08107	0.828	0.01966	2.391	0.01698
126	120.000	0.89021	2265.597	1.46304	32.840	2.33324	41.016	0.97406	366.166	2.60080
127	80.000	0.59347	1369.642	0.88447	12.190	0.86609	7.157	0.16997	123.202	0.87508
128	80.000	0.59347	1553.677	1.00331	17.258	1.22616	26.922	0.63935	181.179	1.28687
129	160.000	1.18694	2247.720	1.45150	12.860	0.91369	16.874	0.40073	153.335	1.08911
131	160.000	1.18694	2379.854	1.53683	21.123	1.50077	32.205	0.76482	225.453	1.60134
134	160.000	1.18694	1654.940	1.06870	2.049	0.14558	77.889	1.84973	9.499	0.06747
135	160.000	1.18694	1578.880	1.01959	0.0	0.0	233.571	5.54692	0.0	0.0
139	240.000	1.78041	2224.422	1.43645	11.982	0.85131	12.190	0.28949	137.687	0.97796
140	160.000	1.18694	1775.113	1.14631	5.227	0.37137	108.624	2.57964	39.567	0.28104
141	40.000	0.29674	392.143	0.25323	0.0	0.0	131.400	3.12053	0.0	0.0
142	40.000	0.29674	533.460	0.34449	1.834	0.13030	13.167	0.31269	13.835	0.09827
145	80.000	0.59347	983.380	0.63503	3.044	0.21627	4.216	0.10012	31.069	0.22068

APPENDIX C (CONTINUED)

TRACT NO.	SURFACE ACRES		CUM. OIL THRU 07-89		CURRENT OIL		CURRENT GAS		REM PRIMARY OIL	
	VALUE	PERCENT	MSTB	PERCENT	MSTB	PERCENT	MMSCF	PERCENT	MSTB	PERCENT
146	120.000	0.89021	1744.276	1.12639	16.431	1.16740	14.169	0.33649	181.072	1.28611
147	40.000	0.29674	457.179	0.29523	0.0	0.0	0.0	0.0	0.0	0.0
148	40.000	0.29674	315.175	0.20353	0.357	0.02536	15.397	0.36565	2.425	0.01722
149	80.000	0.59347	990.831	0.63984	0.0	0.0	3.031	0.07198	0.0	0.0
150	200.000	1.48368	2416.108	1.56024	4.147	0.29464	5.925	0.14071	16.401	0.11649
151	120.000	0.89021	849.330	0.54847	0.105	0.00746	69.882	1.65958	1.061	0.00754
152	40.000	0.29674	546.932	0.35319	1.765	0.12540	22.082	0.52441	15.053	0.10692
153	40.000	0.29674	309.843	0.20009	2.246	0.15958	25.207	0.59862	19.528	0.13870
154	40.000	0.29674	203.862	0.13165	0.619	0.04398	20.562	0.48831	5.310	0.03772
155	40.000	0.29674	216.491	0.13980	0.638	0.04533	17.607	0.41814	7.114	0.05053
156	40.000	0.29673	102.402	0.06613	0.0	0.0	0.0	0.0	0.0	0.0
157	40.000	0.29673	182.945	0.11814	0.0	0.0	10.583	0.25133	0.0	0.0
158	40.000	0.29673	70.421	0.04548	0.0	0.0	0.0	0.0	0.0	0.0
159	40.000	0.29673	11.364	0.00734	0.024	0.00171	14.198	0.33718	0.272	0.00193
160	40.000	0.29673	18.064	0.01167	0.0	0.0	0.0	0.0	0.0	0.0
181	40.000	0.29673	523.716	0.33820	0.680	0.04831	0.995	0.02363	0.0	0.0
187	120.000	0.89021	1607.003	1.03775	2.240	0.15915	0.456	0.01083	11.719	0.08324
188	160.000	1.18694	1715.650	1.10791	5.972	0.42430	30.709	0.72929	40.121	0.28497
TOTAL	13480.000	100.00000	154855.093	100.00000	1407.482	100.00000	4210.823	100.00000	14078.988	100.00000

APPENDIX C (CONTINUED)
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
TABULATION OF POTENTIAL PARTICIPATION PARAMETERS -- TRACT SUMMARY
(PARAMETERS 6 THROUGH 8)

TRACT NO.	REM PRIMARY GAS		ULTIMATE PRIMARY OIL		SECONDARY OIL	
	MMSCF	PERCENT	MSTB	PERCENT	MSTB	PERCENT
1	0.0	0.0	3.456	0.00205	0.200	0.00041
2	0.0	0.0	8.291	0.00491	4.743	0.00973
3	0.0	0.0	107.017	0.06335	66.728	0.13686
4	0.0	0.0	53.065	0.03141	10.084	0.02068
5	85.123	0.21619	749.300	0.44355	196.815	0.40367
6	115.347	0.29295	371.896	0.22014	236.577	0.48522
7	49.856	0.12662	395.479	0.23410	208.175	0.42697
9	50.668	0.12868	255.788	0.15141	214.944	0.44085
10	0.0	0.0	43.058	0.02549	15.790	0.03239
11	0.0	0.0	180.352	0.10676	110.693	0.22703
12	21.808	0.05539	484.731	0.28693	210.464	0.43166
13	44.157	0.11215	554.943	0.32850	129.340	0.26528
14	264.251	0.67113	2430.664	1.43882	704.270	1.44446
15	241.965	0.61453	1346.171	0.79686	733.954	1.50535
16	471.722	1.19806	4206.034	2.48975	817.794	1.67730
17	221.377	0.56224	1601.815	0.94819	221.490	0.45428
18	58.679	0.14903	1753.036	1.03770	434.792	0.89176
19	330.651	0.83977	2711.158	1.60486	513.129	1.05243
20	250.043	0.63505	1043.909	0.61794	268.436	0.55056
21	0.0	0.0	14.729	0.00872	22.243	0.04562
22	77.859	0.19774	83.164	0.04923	25.493	0.05229
23	191.682	0.48683	248.939	0.14736	168.315	0.34522
24	890.317	2.26119	1693.604	1.00252	980.779	2.01159
25	109.013	0.27687	1458.502	0.86336	487.013	0.99887
26	492.097	1.24981	2144.709	1.26955	425.967	0.87366
27	239.930	0.60936	657.321	0.38910	304.040	0.62359
28	704.721	1.78982	7256.514	4.29547	551.783	1.13171
29	146.286	0.37153	1308.868	0.77478	87.401	0.17926
30	247.134	0.62766	1443.262	0.85433	56.619	0.11613
31	369.276	0.93787	2026.036	1.19931	167.105	0.34273
32	193.803	0.49221	2762.758	1.63541	136.536	0.28004
33	401.662	1.02013	1978.812	1.17135	128.476	0.26351
34	95.133	0.24162	1474.628	0.87290	333.777	0.68458
35	134.348	0.34121	801.978	0.47473	459.538	0.94252
36	187.594	0.47644	362.125	0.21436	244.320	0.50110
37	164.562	0.41795	1616.207	0.95671	417.756	0.85682
38	468.304	1.18938	2991.665	1.77091	1192.249	2.44531
39	163.871	0.41619	638.229	0.37780	297.307	0.60978
40	199.606	0.50695	629.508	0.37264	241.515	0.49535
41	0.0	0.0	428.597	0.25371	118.242	0.24252
42	320.777	0.81470	49.640	0.02938	20.331	0.04170
43	157.653	0.40040	321.651	0.19040	168.784	0.34618
44	61.907	0.15723	64.926	0.03843	19.187	0.03935

APPENDIX C (CONTINUED)

TRACT NO.	REM PRIMARY GAS		ULTIMATE PRIMARY OIL		SECONDARY OIL	
	MMSCF	PERCENT	MSTB	PERCENT	MSTB	PERCENT
45	10.133	0.02574	463.711	0.27449	222.672	0.45670
46	0.0	0.0	18.467	0.01093	21.296	0.04368
47	0.0	0.0	180.333	0.10675	122.711	0.25168
48	25.809	0.06555	655.742	0.38816	517.187	1.06075
49	0.0	0.0	3.896	0.00231	7.080	0.01452
50	0.0	0.0	183.996	0.10892	130.355	0.26736
51	0.0	0.0	51.202	0.03031	28.808	0.05909
52	0.0	0.0	0.0	0.0	0.615	0.00126
53	0.0	0.0	29.342	0.01737	25.887	0.05309
54	0.0	0.0	167.611	0.09922	68.840	0.14119
55	103.687	0.26334	57.285	0.03391	34.935	0.07165
56	110.497	0.28064	1879.841	1.11277	824.319	1.69068
57	466.243	1.18415	2821.873	1.67040	1326.996	2.72168
58	184.258	0.46797	2246.737	1.32995	584.782	1.19939
59	0.0	0.0	35.951	0.02128	36.044	0.07393
60	339.066	0.86115	2425.674	1.43587	528.293	1.08353
61	200.256	0.50860	71.873	0.04254	144.629	0.29664
62	445.551	1.13159	5583.592	3.30519	332.655	0.68228
63	400.516	1.01722	2471.448	1.46297	135.912	0.27876
64	311.904	0.79216	4320.020	2.55722	293.962	0.60292
65	464.713	1.18026	3675.712	2.17583	510.460	1.04696
66	11.374	0.02889	1179.459	0.69818	267.253	0.54814
67	208.052	0.52840	1502.902	0.88964	494.187	1.01358
68	159.021	0.40388	897.980	0.53156	543.899	1.11554
69	177.470	0.45073	1242.274	0.73536	639.406	1.31143
70	194.488	0.49395	1701.963	1.00747	783.110	1.60616
71	178.093	0.45231	1239.223	0.73355	508.263	1.04245
72	333.887	0.84799	997.761	0.59062	623.809	1.27944
73	0.0	0.0	308.318	0.18251	199.137	0.40843
74	75.411	0.19153	669.912	0.39655	415.742	0.85269
75	0.0	0.0	22.572	0.01336	21.817	0.04475
78	347.120	0.88160	298.896	0.17693	161.807	0.33187
79	16.262	0.04130	47.108	0.02789	31.697	0.06501
80	23.106	0.05868	207.840	0.12303	81.425	0.16700
81	0.0	0.0	100.001	0.05919	71.155	0.14594
82	130.723	0.33201	205.743	0.12179	113.766	0.23334
83	0.0	0.0	199.658	0.11819	125.260	0.25691
84	829.814	2.10753	463.179	0.27418	236.420	0.48490
85	3555.891	9.03111	1513.822	0.89610	834.818	1.71222
86	992.150	2.51982	2041.577	1.20850	1278.807	2.62284
87	1339.205	3.40126	134.790	0.07979	149.142	0.30589
88	78.442	0.19922	604.265	0.35769	358.755	0.73581
89	29.267	0.07433	820.990	0.48598	372.213	0.76341
90	1315.642	3.34142	4768.410	2.82265	1928.194	3.95474
91	288.003	0.73146	4174.903	2.47132	856.329	1.75634
92	258.787	0.65726	3095.332	1.83227	767.077	1.57328

APPENDIX C (CONTINUED)

TRACT NO.	REM PRIMARY GAS		ULTIMATE PRIMARY OIL		SECONDARY OIL	
	MMSCF	PERCENT	MSTB	PERCENT	MSTB	PERCENT
93	59.753	0.15176	2023.916	1.19805	26.740	0.05484
94	1460.097	3.70830	2954.855	1.74912	718.922	1.47451
95	71.978	0.18281	1573.462	0.93141	612.189	1.25560
96	267.567	0.67956	1526.045	0.90334	860.068	1.76401
97	1553.566	3.94569	1763.744	1.04404	200.654	0.41154
98	86.049	0.21854	2090.128	1.23724	924.330	1.89581
99	706.801	1.79511	563.258	0.33342	121.571	0.24934
100	578.383	1.46895	1513.012	0.89562	826.903	1.69598
101	788.915	2.00366	1931.672	1.14345	1118.955	2.29498
102	1.145	0.00291	408.252	0.24166	213.582	0.43806
103	12.995	0.03300	323.011	0.19121	179.764	0.36870
104	208.689	0.53002	736.821	0.43616	481.706	0.98798
105	92.799	0.23569	584.170	0.34580	265.735	0.54502
106	0.0	0.0	193.287	0.11442	87.697	0.17987
107	795.668	2.02081	736.874	0.43619	460.010	0.94348
108	56.088	0.14245	1225.237	0.72527	415.865	0.85294
109	27.661	0.07025	169.823	0.10053	83.983	0.17225
110	0.0	0.0	549.032	0.32500	188.742	0.38711
111	0.0	0.0	209.046	0.12374	137.700	0.28242
112	53.020	0.13466	125.965	0.07456	59.127	0.12127
113	0.0	0.0	651.483	0.38564	192.688	0.39520
114	162.488	0.41268	444.429	0.26308	82.238	0.16867
115	0.0	0.0	1.303	0.00077	2.352	0.00482
116	0.0	0.0	4.404	0.00261	4.782	0.00981
117	451.215	1.14598	212.823	0.12598	79.865	0.16380
118	433.064	1.09988	241.416	0.14291	62.399	0.12798
119	0.0	0.0	1352.949	0.80087	649.059	1.33122
120	0.0	0.0	373.392	0.22103	156.852	0.32170
121	0.0	0.0	431.495	0.25542	193.756	0.39740
122	272.362	0.69173	3139.610	1.85848	1559.854	3.19927
123	0.0	0.0	344.708	0.20405	177.947	0.36497
124	153.104	0.38885	658.270	0.38966	366.998	0.75272
125	1.736	0.00441	514.982	0.30484	265.751	0.54506
126	457.342	1.16154	2631.763	1.55786	1139.503	2.33713
127	72.320	0.18368	1492.844	0.88368	353.123	0.72426
128	282.639	0.71784	1734.856	1.02694	479.733	0.98394
129	172.962	0.43928	2401.055	1.42130	169.993	0.34866
131	343.816	0.87321	2605.307	1.54220	391.404	0.80277
134	205.888	0.52291	1664.439	0.98526	7.077	0.01452
135	2604.317	6.61434	1578.880	0.93461	85.265	0.17488
139	140.028	0.35564	2362.109	1.39824	455.364	0.93395
140	1165.309	2.95961	1814.680	1.07419	293.268	0.60149
141	1465.110	3.72103	392.143	0.23213	4.078	0.00836
142	99.321	0.25225	547.295	0.32397	51.763	0.10617
145	43.031	0.10929	1014.449	0.60050	40.089	0.08222

APPENDIX C (CONTINUED)

TRACT NO.	REM PRIMARY GAS		ULTIMATE PRIMARY OIL		SECONDARY OIL	
	MMSCF	PERCENT	MSTB	PERCENT	MSTB	PERCENT
146	156.084	0.39642	1925.348	1.13970	281.552	0.57747
147	0.0	0.0	457.179	0.27063	139.068	0.28523
148	104.588	0.26563	317.600	0.18800	108.402	0.22233
149	0.0	0.0	990.831	0.58652	284.871	0.58427
150	23.437	0.05952	2432.509	1.43992	1042.736	2.13866
151	705.902	1.79282	850.391	0.50339	434.965	0.89212
152	188.328	0.47831	561.985	0.33266	112.189	0.23010
153	219.163	0.55662	329.371	0.19497	89.050	0.18264
154	176.388	0.44798	209.172	0.12382	88.226	0.18095
155	196.329	0.49863	223.605	0.13236	88.152	0.18080
156	0.0	0.0	102.402	0.06062	40.012	0.08207
157	58.686	0.14905	182.945	0.10829	65.168	0.13366
158	0.0	0.0	70.421	0.04169	49.276	0.10107
159	160.935	0.40874	11.636	0.00689	13.205	0.02708
160	0.0	0.0	18.064	0.01069	21.084	0.04324
181	0.0	0.0	523.716	0.31001	22.487	0.04612
187	2.391	0.00607	1618.722	0.95820	318.655	0.65356
188	206.302	0.52396	1755.771	1.03932	392.868	0.80578
TOTAL	39373.782	100.00000	168934.081	100.00000	48756.530	100.00000

APPENDIX D
NORTH MONUMENT GRAYBURG/SAN ANDRES STUDY AREA
TABULATION OF POTENTIAL PARTICIPATION PARAMETERS -- OWNER DETAIL

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
AMERADA HESS CORP.	4	100.00000	0.29674	0.03427	0.04107	0.04405	0.0	0.0	0.03141	0.02068
	10	100.00000	0.29674	0.02781	0.0	0.0	0.0	0.0	0.02549	0.03239
	15	100.00000	0.59347	0.78265	0.91269	0.54999	0.95320	0.61453	0.79686	1.50535
	35	100.00000	0.59347	0.50754	0.20199	0.56578	0.11387	0.34121	0.47473	0.94252
	37	100.00000	0.59347	0.96917	0.87752	0.41823	0.81967	0.41795	0.95671	0.85682
	44	87.50000	0.25965	0.03063	0.08430	0.16256	0.06669	0.13758	0.03363	0.03443
	48	100.00000	1.18694	0.40217	0.32576	0.08530	0.23412	0.06555	0.38816	1.06075
	53	100.00000	0.29674	0.01895	0.0	0.0	0.0	0.0	0.01737	0.05309
	56	100.00000	1.18694	1.11803	0.76179	0.18932	1.05489	0.28064	1.11277	1.69068
	59	100.00000	0.29674	0.02322	0.0	0.00857	0.0	0.0	0.02128	0.07393
	63	100.00000	1.18694	1.55052	0.44853	0.85314	0.49996	1.01722	1.46297	0.27876
	67	100.00000	0.59347	0.88107	0.86310	0.43326	0.98385	0.52840	0.88964	1.01358
	70	100.00000	0.59347	0.99907	1.12556	0.47266	1.09984	0.49395	1.00747	1.60616
	71	100.00000	0.59347	0.75877	0.37876	0.35110	0.45617	0.45231	0.73355	1.04245
	78	85.88650	0.25486	0.15714	0.08964	0.66809	0.09497	0.75718	0.15196	0.28503
	83	100.00000	0.29674	0.12893	0.0	0.0	0.0	0.0	0.11819	0.25691
	85	100.00000	1.78041	0.95334	0.18863	6.45831	0.26650	9.03111	0.89610	1.71222
	91	100.00000	1.18694	2.31876	3.91763	0.64562	4.14933	0.73146	2.47132	1.75634
	92	100.00000	1.18694	1.80271	1.98411	0.56481	2.15741	0.65726	1.83227	1.57328
	96	100.00000	0.59347	0.88049	1.08243	0.59542	1.15460	0.67956	0.90334	1.76401
	99	100.00000	0.29674	0.36373	0.0	2.30955	0.0	1.79511	0.33342	0.24934
	100	100.00000	0.59347	0.83172	1.27753	1.09743	1.59850	1.46895	0.89562	1.69598
	101	87.50000	1.03857	1.03009	0.65121	1.58047	0.67526	1.75320	1.00052	2.00811
	103	4.09370	0.01215	0.00849	0.00251	0.00616	0.00052	0.00135	0.00783	0.01509
	105	100.00000	0.29674	0.34808	0.29436	0.20217	0.32075	0.23569	0.34580	0.54502
	112	100.00000	1.78041	0.08054	0.07041	1.00467	0.00882	0.13466	0.07456	0.12127
	113	100.00000	0.59347	0.42070	0.0	0.0	0.0	0.0	0.38564	0.39520
	114	85.88650	0.25486	0.24226	0.08750	0.62287	0.04654	0.35444	0.22595	0.14486
	117	100.00000	0.59347	0.12673	0.13059	1.18806	0.11775	1.14598	0.12598	0.16380
	118	100.00000	0.59347	0.14994	0.06409	1.00484	0.06557	1.09988	0.14291	0.12798
	120	100.00000	0.29674	0.24112	0.0	0.0	0.0	0.0	0.22103	0.32170
	121	100.00000	0.29674	0.27864	0.0	0.0	0.0	0.0	0.25542	0.39740
	123	62.50000	0.18546	0.13913	0.0	0.0	0.0	0.0	0.12753	0.22811
	124	100.00000	0.29674	0.39800	0.26729	0.32614	0.29793	0.38885	0.38966	0.75272
	126	100.00000	0.89021	1.46304	2.33324	0.97406	2.60080	1.16154	1.55786	2.33713
	128	100.00000	0.59347	1.00331	1.22616	0.63935	1.28687	0.71784	1.02694	0.98394
	129	100.00000	1.18694	1.45150	0.91369	0.40073	1.08911	0.43928	1.42130	0.34866
	135	100.00000	1.18694	1.01959	0.0	5.54692	0.0	6.61434	0.93461	0.17488
	148	100.00000	0.29674	0.20353	0.02536	0.36565	0.01722	0.26563	0.18800	0.22233
	150	100.00000	1.48368	1.56024	0.29464	0.14071	0.11649	0.05952	1.43992	2.13866
	151	100.00000	0.89021	0.54847	0.00746	1.65958	0.00754	1.79282	0.50339	0.89212
	153	100.00000	0.29674	0.20009	0.15958	0.59862	0.13870	0.55662	0.19497	0.18264
	154	100.00000	0.29674	0.13165	0.04398	0.48831	0.03772	0.44798	0.12382	0.18095

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
AHC (CONTINUED)	155	100.00000	0.29674	0.13980	0.04533	0.41814	0.05053	0.49863	0.13236	0.18080
	157	100.00000	0.29673	0.11814	0.0	0.25133	0.0	0.14905	0.10829	0.13366
	158	100.00000	0.29673	0.04548	0.0	0.0	0.0	0.0	0.04169	0.10107
	159	100.00000	0.29673	0.00734	0.00171	0.33718	0.00193	0.40874	0.00689	0.02708
	187	100.00000	0.89021	1.03775	0.15915	0.01083	0.08324	0.00607	0.95820	0.65356
OWNER TOTAL			30.19545	27.93434	21.33930	34.23998	22.66686	37.70208	27.49533	33.28344
AMOCO PRODUCTION CO.	119	25.00000	0.37092	0.21842	0.01334	0.04703	0.0	0.0	0.20022	0.33281
OWNER TOTAL			0.37092	0.21842	0.01334	0.04703	0.0	0.0	0.20022	0.33281
ARCO OIL AND GAS CO.	80	99.96211	0.29663	0.13232	0.06122	0.16573	0.02025	0.05866	0.12298	0.16694
	88	100.00000	0.59347	0.39021	0.0	0.17958	0.0	0.19922	0.35769	0.73581
	94	100.00000	1.18694	1.77003	1.48080	3.37920	1.51908	3.70830	1.74912	1.47451
	97	100.00000	1.18694	1.10856	0.40853	3.33317	0.33446	3.94569	1.04404	0.41154
	110	100.00000	0.59347	0.35455	0.0	0.0	0.0	0.0	0.32500	0.38711
	115	100.00000	0.29674	0.00084	0.0	0.0	0.0	0.0	0.00077	0.00482
	119	25.00000	0.37092	0.21842	0.01334	0.04703	0.0	0.0	0.20022	0.33280
	123	25.00000	0.07419	0.05565	0.0	0.0	0.0	0.0	0.05101	0.09124
OWNER TOTAL			4.59930	4.03058	1.96389	7.10471	1.87379	7.91187	3.85083	3.60477
RON BROOKS	68	3.00000	0.01780	0.01680	0.00865	0.01478	0.00663	0.01212	0.01595	0.03347
OWNER TOTAL			0.01780	0.01680	0.00865	0.01478	0.00663	0.01212	0.01595	0.03347
LOUIS BURLESON	1	100.00000	0.29674	0.00223	0.0	0.0	0.0	0.0	0.00205	0.00041
	2	100.00000	0.29674	0.00535	0.0	0.0	0.0	0.0	0.00491	0.00973
	3	100.00000	0.29674	0.06911	0.0	0.0	0.0	0.0	0.06335	0.13686
	47	100.00000	0.59347	0.11645	0.0	0.0	0.0	0.0	0.10675	0.25168
OWNER TOTAL			1.48369	0.19314	0.0	0.0	0.0	0.0	0.17706	0.39868
ROY CAIN	68	3.00000	0.01780	0.01680	0.00865	0.01478	0.00662	0.01212	0.01595	0.03347
OWNER TOTAL			0.01780	0.01680	0.00865	0.01478	0.00662	0.01212	0.01595	0.03347

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
CHEVRON U.S.A. INC.	5	100.00000	0.59347	0.45210	0.78218	0.45233	0.34949	0.21619	0.44355	0.40367
	6	100.00000	0.59347	0.22886	0.12718	0.28023	0.12428	0.29295	0.22014	0.48522
	7	100.00000	0.29674	0.24455	0.16462	0.16348	0.11919	0.12662	0.23410	0.42697
	14	100.00000	1.18694	1.45595	1.34922	0.67711	1.25044	0.67113	1.43882	1.44446
	20	100.00000	1.18694	0.65454	0.60484	1.66711	0.21538	0.63505	0.61794	0.55056
	24	100.00000	1.18694	1.07831	0.23148	2.89644	0.16893	2.26119	1.00252	2.01159
	28	100.00000	2.07715	4.24800	7.06446	2.45370	4.81760	1.78982	4.29547	1.13171
	33	100.00000	0.59347	1.07457	2.66405	1.13629	2.23583	1.02013	1.17135	0.26351
	39	100.00000	0.59347	0.40795	0.07524	0.63482	0.04611	0.41619	0.37780	0.60978
	45	100.00000	0.29674	0.29356	0.09585	0.03560	0.06478	0.02574	0.27449	0.45670
	51	100.00000	0.29674	0.03306	0.0	0.0	0.0	0.0	0.03031	0.05909
	52	100.00000	0.29674	0.0	0.0	0.0	0.0	0.0	0.0	0.00126
	54	100.00000	0.29674	0.10824	0.0	0.0	0.0	0.0	0.09922	0.14119
	57	100.00000	1.18694	1.66763	1.56101	1.01564	1.70088	1.18415	1.67040	2.72168
	60	100.00000	0.59347	1.30356	2.59371	0.72209	2.89113	0.86115	1.43587	1.08353
	66	100.00000	0.59347	0.75195	0.22913	0.05797	0.10672	0.02889	0.69818	0.54814
	72	100.00000	0.89021	0.62452	0.29322	1.06727	0.21777	0.84799	0.59062	1.27944
	74	100.00000	0.89021	0.43096	0.04476	0.44246	0.01811	0.19153	0.39655	0.85269
	81	100.00000	0.29674	0.06458	0.0	0.0	0.0	0.0	0.05919	0.14594
	82	100.00000	0.29674	0.11582	0.19141	0.31699	0.18739	0.33201	0.12179	0.23334
	87	100.00000	0.29674	0.07807	0.08853	2.85246	0.09867	3.40126	0.07979	0.30589
	93	100.00000	1.18694	1.26337	0.60193	0.17802	0.47957	0.15176	1.19805	0.05484
	95	100.00000	0.59347	0.90620	1.11398	0.15759	1.20861	0.18281	0.93141	1.25560
	98	100.00000	0.89021	1.24548	1.06360	0.18942	1.14669	0.21854	1.23724	1.89581
	108	100.00000	0.59347	0.73940	0.52946	0.12375	0.56993	0.14245	0.72527	0.85294
	111	100.00000	0.59347	0.13499	0.0	0.0	0.0	0.0	0.12374	0.28242
	119	25.00000	0.37092	0.21842	0.01334	0.04702	0.0	0.0	0.20021	0.33280
	127	100.00000	0.59347	0.88447	0.86609	0.16997	0.87508	0.18368	0.88368	0.72426
OWNER TOTAL			19.36202	20.70911	22.34929	17.73776	18.89258	15.18123	20.55770	20.55503
CHI ENERGY INC.	116	100.00000	0.29674	0.00284	0.0	0.0	0.0	0.0	0.00261	0.00981
OWNER TOTAL			0.29674	0.00284	0.0	0.0	0.0	0.0	0.00261	0.00981
CONOCO INC.	19	100.00000	1.78041	1.62656	1.23021	0.70670	1.36623	0.83977	1.60486	1.05243
	29	100.00000	0.29674	0.63483	1.34261	0.20172	2.31411	0.37153	0.77478	0.17926
	62	100.00000	1.18694	2.84452	6.86254	0.86700	8.37209	1.13159	3.30519	0.68228
	119	25.00000	0.37092	0.21843	0.01334	0.04703	0.0	0.0	0.20022	0.33281
OWNER TOTAL			3.63501	5.32434	9.44870	1.82245	12.05243	2.34289	5.88505	2.24678

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
HERMAN R. CRILE	68	11.87500	0.07048	0.06648	0.03422	0.05852	0.02622	0.04796	0.06312	0.13247
OWNER TOTAL			0.07048	0.06648	0.03422	0.05852	0.02622	0.04796	0.06312	0.13247
ROBERT B. CROTTY	80	0.03789	0.00011	0.00005	0.00002	0.00006	0.00001	0.00002	0.00005	0.00006
OWNER TOTAL			0.00011	0.00005	0.00002	0.00006	0.00001	0.00002	0.00005	0.00006
DAVOIL INC.	103	17.84950	0.05297	0.03703	0.01093	0.02686	0.00224	0.00589	0.03413	0.06581
	109	35.52400	0.42165	0.03737	0.03882	0.05183	0.01747	0.02496	0.03571	0.06119
OWNER TOTAL			0.47462	0.07440	0.04975	0.07869	0.01971	0.03085	0.06984	0.12700
FINA OIL	160	100.00000	0.29673	0.01167	0.0	0.0	0.0	0.0	0.01069	0.04324
OWNER TOTAL			0.29673	0.01167	0.0	0.0	0.0	0.0	0.01069	0.04324
MARGARET GAGE	103	3.69460	0.01096	0.00766	0.00226	0.00556	0.00046	0.00122	0.00706	0.01362
OWNER TOTAL			0.01096	0.00766	0.00226	0.00556	0.00046	0.00122	0.00706	0.01362
GRACE PETROLEUM CORP.	36	100.00000	0.59347	0.23090	0.05734	0.78825	0.03240	0.47644	0.21436	0.50110
	42	100.00000	0.59347	0.02807	0.05847	1.01662	0.04380	0.81470	0.02938	0.04170
	43	100.00000	0.29674	0.20249	0.07453	0.48542	0.05747	0.40040	0.19040	0.34618
OWNER TOTAL			1.48368	0.46146	0.19034	2.29029	0.13367	1.69154	0.43414	0.88898
GRAHAM ROYALTY LTD	78	14.11350	0.04188	0.02582	0.01473	0.10979	0.01561	0.12442	0.02497	0.04684
	79	100.00000	0.29674	0.02890	0.07261	0.16709	0.01678	0.04130	0.02789	0.06501
	106	100.00000	0.29674	0.12482	0.0	0.0	0.0	0.0	0.11442	0.17987
	114	14.11350	0.04188	0.03981	0.01438	0.10236	0.00765	0.05824	0.03713	0.02381
	145	54.40000	0.32285	0.34546	0.11765	0.05447	0.12005	0.05945	0.32667	0.04473
	181	54.40000	0.16142	0.18398	0.02628	0.01285	0.0	0.0	0.16865	0.02509
OWNER TOTAL			1.16151	0.74879	0.24565	0.44656	0.16009	0.28341	0.69973	0.38535

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
GREAT WESTERN DRLG	103	37.41640	0.11103	0.07762	0.02291	0.05630	0.00470	0.01235	0.07154	0.13796
	109	64.47600	0.76529	0.06782	0.07045	0.09408	0.03171	0.04529	0.06482	0.11106
OWNER TOTAL			0.87632	0.14544	0.09336	0.15038	0.03641	0.05764	0.13636	0.24902
DOYLE HARTMAN	123	12.50000	0.03709	0.02782	0.0	0.0	0.0	0.0	0.02551	0.04562
OWNER TOTAL			0.03709	0.02782	0.0	0.0	0.0	0.0	0.02551	0.04562
HOYT ET AL	103	29.55660	0.08770	0.06132	0.01810	0.04447	0.00371	0.00975	0.05652	0.10898
OWNER TOTAL			0.08770	0.06132	0.01810	0.04447	0.00371	0.00975	0.05652	0.10898
JENNIE HUGHES	68	2.66667	0.01583	0.01493	0.00768	0.01314	0.00589	0.01077	0.01417	0.02975
OWNER TOTAL			0.01583	0.01493	0.00768	0.01314	0.00589	0.01077	0.01417	0.02975
PETER HURD	68	8.75000	0.05193	0.04898	0.02521	0.04312	0.01932	0.03534	0.04651	0.09761
OWNER TOTAL			0.05193	0.04898	0.02521	0.04312	0.01932	0.03534	0.04651	0.09761
C. E. LONG	46	100.00000	0.29674	0.01193	0.0	0.0	0.0	0.0	0.01093	0.04368
	75	100.00000	0.29674	0.01458	0.0	0.0	0.0	0.0	0.01336	0.04475
OWNER TOTAL			0.59348	0.02651	0.0	0.0	0.0	0.0	0.02429	0.08843
MARATHON OIL CO.	50	100.00000	0.59347	0.11882	0.03730	0.02584	0.0	0.0	0.10892	0.26736
	65	100.00000	1.18694	2.13956	2.39612	1.02693	2.57469	1.18026	2.17583	1.04696
	107	100.00000	0.59347	0.39536	0.90140	1.92333	0.88526	2.02081	0.43619	0.94348
	139	100.00000	1.78041	1.43645	0.85131	0.28949	0.97796	0.35564	1.39824	0.93395
	188	100.00000	1.18694	1.10791	0.42430	0.72929	0.28497	0.52396	1.03932	0.80578
OWNER TOTAL			5.34123	5.19810	4.61043	3.99488	4.72288	4.08067	5.15850	3.99753

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
GENEVIEVE MARTIN	145	45.60000	0.27062	0.28957	0.09862	0.04565	0.10063	0.04984	0.27383	0.03749
	181	45.60000	0.13531	0.15422	0.02203	0.01078	0.0	0.0	0.14136	0.02103
OWNER TOTAL			0.40593	0.44379	0.12065	0.05643	0.10063	0.04984	0.41519	0.05852
HANS MAY TRUST	103	7.38920	0.02193	0.01533	0.00453	0.01112	0.00093	0.00244	0.01413	0.02724
OWNER TOTAL			0.02193	0.01533	0.00453	0.01112	0.00093	0.00244	0.01413	0.02724
MERIDIAN OIL INC.	141	100.00000	0.29674	0.25323	0.0	3.12053	0.0	3.72103	0.23213	0.00836
OWNER TOTAL			0.29674	0.25323	0.0	3.12053	0.0	3.72103	0.23213	0.00836
MOBIL PROD. TEXAS & N.M.	122	100.00000	1.18694	1.73480	2.74327	0.55153	3.21885	0.69173	1.85848	3.19927
OWNER TOTAL			1.18694	1.73480	2.74327	0.55153	3.21885	0.69173	1.85848	3.19927
H. F. MONTGOMERY TRUST	101	12.50000	0.14837	0.14715	0.09303	0.22578	0.09646	0.25046	0.14293	0.28687
OWNER TOTAL			0.14837	0.14715	0.09303	0.22578	0.09646	0.25046	0.14293	0.28687
OCCIDENTAL PETR. CORP.	64	100.00000	1.18694	2.50483	2.70639	0.63919	3.13350	0.79216	2.55722	0.60292
OWNER TOTAL			1.18694	2.50483	2.70639	0.63919	3.13350	0.79216	2.55722	0.60292
ORYX ENERGY COMPANY	22	100.00000	0.29674	0.05259	0.02714	0.41066	0.01222	0.19774	0.04923	0.05229
	58	100.00000	0.59347	1.24885	1.89835	0.37385	2.22198	0.46797	1.32995	1.19939
	86	100.00000	1.78041	1.22135	1.00314	2.21389	1.06724	2.51982	1.20850	2.62284
	142	100.00000	0.29674	0.34449	0.13030	0.31269	0.09827	0.25225	0.32397	0.10617
	152	100.00000	0.29674	0.35319	0.12540	0.52441	0.10692	0.47831	0.33266	0.23010
OWNER TOTAL			3.26410	3.22047	3.18433	3.83550	3.50663	3.91609	3.24431	4.21079

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
PHILLIPS PETROLEUM CO.	27	100.00000	0.29674	0.38554	0.40988	0.54517	0.42829	0.60936	0.38910	0.62359
	30	100.00000	0.29674	0.72897	2.00351	0.52641	2.23325	0.62766	0.85433	0.11613
OWNER TOTAL			0.59348	1.11451	2.41339	1.07158	2.66154	1.23702	1.24343	0.73972
RUTH SNOWDEN	68	3.00000	0.01780	0.01679	0.00865	0.01478	0.00662	0.01212	0.01595	0.03346
OWNER TOTAL			0.01780	0.01679	0.00865	0.01478	0.00662	0.01212	0.01595	0.03346
SHELL WESTERN E & P INC.	25	100.00000	0.59347	0.89850	1.01493	0.55101	0.47678	0.27687	0.86336	0.99887
	31	100.00000	0.59347	1.13874	1.74595	0.82029	1.86550	0.93787	1.19931	0.34273
	40	100.00000	0.29674	0.38885	0.38004	0.92723	0.19424	0.50695	0.37264	0.49535
	73	100.00000	0.29674	0.19910	0.0	0.0	0.0	0.0	0.18251	0.40843
	84	100.00000	0.59347	0.28652	0.12419	1.76737	0.13844	2.10753	0.27418	0.48490
	89	100.00000	0.29674	0.47324	0.57109	0.06343	0.62613	0.07433	0.48598	0.76341
	90	100.00000	1.18694	2.51625	5.55560	2.80285	6.19266	3.34142	2.82265	3.95474
	146	100.00000	0.89021	1.12639	1.16740	0.33649	1.28611	0.39642	1.13970	0.57747
	147	100.00000	0.29674	0.29523	0.0	0.0	0.0	0.0	0.27063	0.28523
	156	100.00000	0.29673	0.06613	0.0	0.0	0.0	0.0	0.06062	0.08207
OWNER TOTAL			5.34125	7.38895	10.55920	7.26867	10.77986	7.64139	7.67158	8.39320
TEXACO INC.	9	100.00000	0.59347	0.16304	0.04817	0.24603	0.02355	0.12868	0.15141	0.44085
	11	100.00000	0.29674	0.11566	0.06210	0.0	0.00884	0.0	0.10676	0.22703
	12	100.00000	0.29674	0.30932	0.09982	0.12698	0.04070	0.05539	0.28693	0.43166
	13	100.00000	0.29674	0.35397	0.12533	0.27175	0.04835	0.11215	0.32850	0.26528
	16	100.00000	1.18694	2.46183	4.34514	1.73949	2.79678	1.19806	2.48975	1.67730
	17	100.00000	0.59347	0.93748	1.00065	0.49344	1.06603	0.56224	0.94819	0.45428
	18	100.00000	1.18694	1.11330	0.18501	0.12496	0.20623	0.14903	1.03770	0.89176
	21	100.00000	0.89021	0.00951	0.0	0.0	0.0	0.0	0.00872	0.04562
	23	100.00000	0.59347	0.15961	0.02146	0.77199	0.01265	0.48683	0.14736	0.34522
	26	100.00000	0.59347	1.21586	2.52252	1.58461	1.86017	1.24981	1.26955	0.87366
	32	100.00000	0.59347	1.37510	4.03572	0.41244	4.49849	0.49221	1.63541	0.28004
	34	100.00000	0.59347	0.91891	0.33862	0.20849	0.36684	0.24162	0.87290	0.68458
	38	100.00000	1.18694	1.76446	1.68819	1.01914	1.84178	1.18938	1.77091	2.44531
	49	100.00000	0.59347	0.00252	0.0	0.0	0.0	0.0	0.00231	0.01452
	55	100.00000	0.59347	0.03640	0.01584	0.59425	0.00656	0.26334	0.03391	0.07165
	61	100.00000	0.29674	0.04522	0.02430	0.88311	0.01308	0.50860	0.04254	0.29664
	69	100.00000	0.59347	0.76719	0.46963	0.51361	0.38525	0.45073	0.73536	1.31143
	102	100.00000	0.29674	0.26348	0.00398	0.05669	0.00167	0.00291	0.24166	0.43806

APPENDIX D (CONTINUED)

WIO NAME	TRACT NO.	WORK INT PERCENT	SURFACE ACRES	CUM OIL 07-89	CURRENT OIL	CURRENT GAS	REM PRI OIL	REM PRI GAS	ULT PRI OIL	SECONDARY OIL
TEXACO (CONTINUED)	104	100.00000	0.59347	0.42445	0.46530	0.40807	0.56489	0.53002	0.43616	0.98798
	131	100.00000	1.18694	1.53683	1.50077	0.76482	1.60134	0.87321	1.54220	0.80277
	134	100.00000	1.18694	1.06870	0.14558	1.84973	0.06747	0.52291	0.98526	0.01452
	140	100.00000	1.18694	1.14631	0.37137	2.57964	0.28104	2.95961	1.07419	0.60149
	149	100.00000	0.59347	0.63984	0.0	0.07198	0.0	0.0	0.58652	0.58627
OWNER TOTAL			16.02372	16.82899	17.46950	14.72122	15.69171	11.97673	16.73420	14.18592
F. TURNER	125	100.00000	0.29674	0.33101	0.08107	0.01966	0.01698	0.00441	0.30484	0.54506
OWNER TOTAL			0.29674	0.33101	0.08107	0.01966	0.01698	0.00441	0.30484	0.54506
WAGONNER ESTATE	44	12.50000	0.03709	0.00437	0.01204	0.02322	0.00953	0.01965	0.00480	0.00492
OWNER TOTAL			0.03709	0.00437	0.01204	0.02322	0.00953	0.01965	0.00480	0.00492
WISER OIL CO.	41	100.00000	0.29674	0.27677	0.0	0.0	0.0	0.0	0.25371	0.24252
	68	64.70833	0.38403	0.36224	0.18647	0.31885	0.14286	0.26134	0.34396	0.72185
OWN TL			0.68077	0.63901	0.18647	0.31885	0.14286	0.26134	0.59767	0.96437
JACK WRIGHT	68	3.00000	0.01780	0.01679	0.00864	0.01478	0.00662	0.01211	0.01595	0.03346
OWNER TOTAL			0.01780	0.01679	0.00864	0.01478	0.00662	0.01211	0.01595	0.03346
GRAND TOTAL			100.00000	100.00000	100.00000	100.00000	100.00000	100.00000	100.00000	100.00000