BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF EXXON MOBIL CORPORATION FOR CERTIFICATION OF A POSITIVE PRODUCTION RESPONSE, EDDY COUNTY, NEW MEXICO. **Case No.** 12512

APPLICATION

Exxon Mobil Corporation applies for an order certifying a positive production response for a waterflood project, and in support thereof, states:

1. Applicant is operator of the Avalon (Delaware) Unit, which covers the following state, federal, and fee lands in Eddy County, New Mexico:

Township 20 South, Range 27 East, NMPM
Section 25: E½E½
Section 26: E½E½

Township 20 South, Range 28 East, NMPM
Section 29: SW¼SW¼
Section 30: Lots 1-4, SW¼NE¼, E½W½, and SE¼
Section 31: Lots 1-4, E½W½, and E½
Section 32: SW¼NE¼, W½, and W½SE¼

Township 21 South, Range 27 East, NMPM
Section 4: Lot 4
Section 5: Lots 1 and 2
Section 6: Lots 1 and 2

2. Applicant has instituted a waterflood project for the Avalon (Delaware) Unit, which was certified as an Enhanced Oil Recovery project by the Division on October 15, 1995.

3. Applicant seeks certification of a positive production response for all wells in the Avalon (Delaware) Unit. In support thereof, attached are the following:

(a) Exhibit A: A copy of the Commission's Order approving the Avalon (Delaware) Unit and the waterflood project for the

unit.

(b) Exhibits B and C: A plat of the Avalon (Delaware) Unit, showing all injection and producing wells, and a listing of all wells in the unit.

(c) Exhibits D and E: Production and injection data for wells in the Avalon (Delaware) Unit, in both graphical and tabular form.

4. The entire unit area is benefitting from enhanced recovery operations, and all producing wells in the unit are eligible for certification for the credit.

5. The granting of this application is in the interests of conservation and the prevention of waste.

WHEREFORE, applicant requests that the Division set this matter for hearing, and thereafter certify that a positive production response has occurred in the Avalon (Delaware) Unit Waterflood Project.

Respectfully submitted,

James Bruce
Post Office Box 1056
Santa Fe, New Mexico 87504
(505) 982-2043

Attorney for Exxon Mobil Corporation

AVALON-DELAWARE POOL
(Avalon (Delaware) Unit Area Statutory Unitization and Waterflood Project)
Eddy County, New Mexico

Order No. R-10460-B, Authorizing Exxon Corporation to Institute a Waterflood Project on its Avalon (Delaware) Unit Area and for Statutory Unitization in the Unit, located in the Avalon-Delaware Pool, Eddy County, New Mexico, March 12, 1996.

Application of Exxon Corporation for a Waterflood Project, Qualification for the Recovered Oil Tax Rate Pursuant to the "New Mexico Enhanced Oil Recovery Act" for said Project, and for 18 Non-Standard Oil Well Locations, Eddy County, New Mexico.

CASE NO. 11297
(DE NOVO)

Application of Exxon Corporation for Statutory Unitization, Eddy County, New Mexico.

CASE NO. 11298
Order No. R-10460-B

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9:00 a.m. on December 14, 1995 at Santa Fe, New Mexico, before the Oil Conservation Commission of the State of New Mexico, hereinafter referred to as the "Commission".

NOW, on this 12th day of March, 1996, the Commission, a quorum being present, having considered the testimony and the record, and being fully advised in the premises,

FINDS THAT:

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

(2) Case Nos. 11297 and 11298 were consolidated at the time of the hearing, and the record from the Examiner hearing held on June 29 and 30, 1995 was incorporated into the record without objection by any party.

(3) The applicant in Case No. 11298, Exxon Corporation ("Exxon"), seeks the statutory unitization, pursuant to the "Statutory Unitization Act," Sections 70-7-1 through 70-7-21 NMSA (1978), for the purpose of establishing a secondary recovery project, of all mineral interests in the designated and Undesignated Avalon-Delaware Pool, underlying its proposed Avalon (Delaware) Unit Area, comprising 2118.78 acres, more or less, of State, Federal, and fee lands in Eddy County, New Mexico, said unit to henceforth be known as the Avalon (Delaware) Unit Area; the applicant further seeks approval of the Unit Agreement and the Unit Operating Agreement which were submitted in evidence at the time of the hearing as applicant's Exhibit Nos. 2 and 3.

(4) In Case No. 11297, Exxon seeks authority to:

(a) institute a waterflood project in its proposed Avalon (Delaware) Unit Area by the injection of water into the designated and Undesignated Avalon-Delaware Pool through 18 new wells to be drilled as injection wells and one well to be converted from a producing oil well to an injection well;

(b) qualify the project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5); and

(c) drill 18 new producing wells throughout the project area at locations considered to be unorthodox.

(5) The applicant proposes that the unit comprise the following described area in Eddy County, New Mexico:

Township 20 South, Range 27 East, NMPM
Section 25: E/2 E/2
Section 26: E/2 E/2

Township 20 South, Range 28 East, NMPM
Section 29: SW/4 SW/4
Section 30: Lots 1 through 4, E/2 W/2, SW/4 NE/4, SE/4
Section 31: Lots 1 through 4, E/2 W/2, E/2 (All)
Section 32: SW/4 NE/4, W/2, W/2 SE/4

Township 21 South, Range 27 East, NMPM
Section 4: Lot 4
Section 5: Lots 1 and 2
Section 6: Lots 1 and 2

(6) The proposed Unit Area includes portions of the designated and Undesignated Avalon-Delaware Pool. The pool was discovered in 1983, and no development wells have been drilled in the pool since 1985. The horizontal and vertical limits of the Unit Area have been reasonably defined by development.

(7) The proposed "unitized formation" is that interval underlying the Unit Area described as the Delaware Mountain Group, extending from 100 feet above the base of the Goat Seep Reef to the top of the Bone Spring formation and including, but not limited to, the Cherry Canyon and Brushy Canyon Formations, as identified by the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet from the North and East lines of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico, with the top of the unitized formation being found in said well at a depth of 2,378 feet below the surface (869 feet above sea level) and the base of the unitized formation being found at a depth of 4,880 feet below the surface (1,633 feet below sea level), or stratigraphic equivalents thereof.

(8) The proposed Unit Area contains twelve separate tracts of land, the working interests in which are owned by forty-three different persons. Prior to October 1, 1995, Exxon operated five of the twelve tracts, five tracts were operated by Yates Petroleum Corporation ("Yates"), one tract was operated by Premier Oil & Gas, Inc. ("Premier"), and one tract was operated by MWJ Producing Company. There are twenty-four royalty and overriding royalty interest owners in the Unit Area.

(9) At the time of the hearing, the owners of 98.66% of the working interest, and the owners of over 98% of the royalty and overriding interest, had voluntarily joined the Unit. The 98% royalty owner approval includes the U. S. Bureau of Land Management and the Commissioner of Public Lands, who are the two largest royalty owners in the unit. The participation formula, proposed by Exxon and Yates and approved by all parties except Premier, is as follows:

25% remaining primary reserves as of 1/1/93;
50% waterflood reserves; and
25% tertiary reserves.

(10) The applicant has conducted negotiations with interest owners within the Unit Area for over four years. Therefore, the applicant has made a good faith effort to secure voluntary unitization within the above-described Unit Area.

(11) All interested parties who have not agreed to unitization were notified of the hearing by applicant. At the hearing on these matters, Yates entered its appearance and presented evidence in support of the applications. Unit Petroleum Company made a statement in support of the applications. At the examiner hearing on these matters, MWJ Producing Company made a statement in support of the applications.

EXHIBIT A

(AVALON-DELAWARE (AVALON (DELAWARE) UNIT AREA STATUTORY UNITIZATION AND WATERFLOOD PROJECT) POOL - Cont'd.)

(12) Premier, the working interest owner of Tract 6 of the unit, comprising the E/2 E/2 of Section 25, Township 20 South, Range 27 East, NMPM, entered an appearance and presented evidence in opposition to the application, and requested that Tract 6 be deleted from the Unit Area. In the alternative, Premier requested that the following participation formula be adopted by the Commission:

50% original oil in place;
10% 1/1/93 producing rate;
20% remaining primary; and
20% future production.

Premier did not propose the above formula until December 13, 1995, the day before the hearing. No interest owner has approved this formula.

(13) Exxon is the largest working interest owner in the proposed Unit Area with 61 percent of the unit acreage and approximately 80% of current production. A substantial majority of working interest acreage owners, excluding Exxon, requested that Exxon prepare a technical report of the Avalon-Delaware Pool. Exxon prepared the "Report of the Technical Committee for the Working Interest Owners" (Exxon Exhibit 10, Volumes I and II; hereafter the "Technical Report") at its own expense which according to testimony, cost Exxon approximately $500,000.

(14) The applicant proposes to institute a waterflood project at an expected initial cost of $14,400,000 for the secondary recovery of oil and associated gas, condensate, and all associated liquifiable hydrocarbons within and to be produced from the proposed Unit Area (being subject of Case No. 11297). The estimated reserves recoverable from the waterflood project are 8.2 million barrels of oil.

(15) The Unit also has potential as a tertiary (CO_2 injection) project. Evidence presented at the hearing shows that:

(a) estimated recoverable tertiary reserves are 39.9 million barrels of oil;

(b) if such a CO_2 flood is instituted in the proposed Unit Area, it will likely be the first CO_2 project in the area and could facilitate other CO_2 floods;

(c) this project will provide valuable data which could justify additional waterflood projects and tertiary projects in other Delaware pools in New Mexico;

(d) institution of the CO_2 flood depends upon waterflood performance, results of future CO_2 injectivity tests, and perception of future oil prices. A minimum of 3 years of water injection would probably be required to repressure the reservoir prior to commencing a CO_2 injection project;

(e) the risk associated with a successful CO_2 flood in the Avalon Delaware Field is significantly higher than risk associated with the proposed waterflood because CO_2 technology is relatively new to Delaware Sand Fields and there is less data available; and

(f) CO_2 injection in the Delaware is of major importance to the State because primary and secondary recovery in the Delaware amounts to less than 10% of the original oil-in-place. CO_2 could greatly increase the recovery factor. A successful CO_2 project would serve as a catalyst for others in New Mexico.

(16) At issue are the various factors which form the basis for the participation formula which in turn governs the relative ownership of future oil and gas produced from the unit.

(17) Exxon presented evidence that:

(a) the pay in the Avalon Field is Upper Cherry Canyon and Upper Brushy Canyon Sands. There is no Bell Canyon Sand present;

(b) Exxon's geologic model was calibrated by actual production and verified by a reservoir simulation program;

(c) Exxon's geological pick of the base of the Upper Cherry reservoir is consistent with regional geologic markers found throughout the Avalon-Delaware Pool (Exxon Exhibits 16, 19a, and 19b);

(d) the waterflood project area includes 1088.50 acres in the center of the Unit Area. The outer or "fringe" tracts were included in the Unit Area based upon their CO_2 flood potential and not their waterflood potential. The "fringe" tracts will participate in production from inception of the Unit due to their CO_2 potential and the agreement to a single stage formula;

(e) a well critical to both sides' interpretation is the Premier's FV3 Well which produced 5100 barrels of oil prior to ceasing production. The nearest geologically analogous well to the FV3 Well, the Yates Citadel ZG1 Well, located in the NE/4 NE/4 of Section 36, Township 20 South, Range 27 East (Unit Tract 7), immediately to the South of the FV3 Well, produces from an interval similar to the FV3 Well, and is expected to produce equivalent amounts of oil (6000 barrels of primary oil);

(f) Premier claimed that the FV3 Well suffered completions problems, but Exxon claimed that completion problems were highly unlikely and that production is in line with Gulf's initial expectations;

(g) the Technical Report and the Unit Agreement attribute no remaining primary or waterflood reserves to Tract 6, operated by Premier. Primary production data from the Yates Citadel ZG1 Well, and other offset wells, support the Technical Report's estimate of primary and waterflood reserves in Unit Tract 6;

(h) Premier's engineering consultant stated that Tract 6 was not given credit for waterflood target "reserves" (referencing Technical Report Exhibit E-6). However, Technical Report Exhibit E-6 does not set forth "reserves," but rather "waterflood target oil-in-place." "Target oil-in-place" is a volumetric value used as a starting point in calculating recoverable reserves, on which equity is based. In order to obtain recoverable reserves, the "target oil-in-place" must be adjusted by factors such as well-to-well continuity, sweep efficiency, floodable oil, pattern effects, and development costs. This was done on all tracts, including Premier's Tract 6;

(i) The inclusion of Tract 6 in the Unit will enhance CO_2 flood sweep efficiency. Conversely, omitting Tract 6 from the Unit, as Premier advocated will diminish CO_2 flood sweep efficiency in that area of the Unit resulting in waste.

(j) the unit boundary has not changed since 1991.

(18) Yates presented evidence that.

(a) deleting Tract 6 from the Unit would substantially reduce recoverable tertiary reserves under Tracts 3, 5, and 7, which are adjacent to Tract 6;

(b) deletion of Tract 6 from the Unit will decrease the amount of oil produced from the Unit by approximately 2,000,000 barrels, thus causing loss of royalties and severance taxes to the State;

(c) Yates' geologist had done independent work which confirmed Exxon's geologic interpretation in the area contested by Premier;

(d) in June 1994 the working interest owners considered excluding Tract 6 from the Unit, but never agreed to do so. However, Premier thought that they were excluded;

(e) moving the proposed western CO_2 injection wells further west, as advocated by Premier, will diminish the CO_2 sweep efficiency on Unit Tracts 3 and 5; and

(AVALON-DELAWARE (AVALON (DELAWARE) UNIT AREA STATUTORY UNITIZATION AND WATERFLOOD PROJECT) POOL - Cont'd.)

(f) negotiations over the equity formula in the Unit Agreement lasted approximately one year. Deleting Tract 6 from the Unit Area would require additional negotiations among working interest owners, revision of unit documents, and other delays. Yates' witness testified that if Tract 6 is deleted, unitization may never occur.

(19) Premier presented evidence that:

(a) Tract 6 has substantial primary and waterflood reserves which were not properly evaluated when participation percentages were formulated. Premier's claim is based upon "oil-in-place" log calculations which excludes recovery efficiency. The only Delaware completion on Tract 6, the FV3 Well, produced only 5100 barrels of oil (the analogous offset well, the Yates Citadel ZG1 Well, will produce an estimated 6000 barrels of oil);

(b) Premier's FV3 Well was drilled and completed by Gulf in 1984, and purchased by Premier in 1990. The interval below the Exxon pick of the base of the Upper Cherry Canyon reservoir is claimed by Premier to be productive in the FV3 Well. Premier's geologist utilizing detailed mapping techniques has made different "picks" in the FV3 Well resulting in an additional 82 feet of net pay which, based upon log analysis, would increase Premier's Unit participation percentage;

(c) Gulf improperly drilled and completed the FV3 Well. They used a fresh water mud which tends to swell clays within the Delaware Sand, thus creating damage and reduced productivity. The acid job channeled 50 feet above the top of their perforations and the frac job further extended the channel behind pipe because of its high pumping rate;

(d) Exxon proposes to include a column of 40-acre tracts including four 40-acre tracts (Tract 6) operated by Premier within the western boundary of the Avalon Unit but does not intend to attempt to recover from those tracts any remaining primary oil, any workover oil or any secondary oil by waterflooding;

(e) Premier's hydrocarbon pore volume map shows that there is substantial recoverable oil remaining under Premier's Tract 6.

(f) the Exxon - Yates participation formula is flawed because it failed to allocate total unit waterflood and CO2 reserves equitably among the tracts;

(g) the best formula is Premier's proposed participation formula which distributes equity based upon the following:

50% original oil in place;
10% 1/93 rate;
20% remaining primary and
20% future production

(h) the Premier geology is correct and their participation formula is fair because;

(i) it used more traditional parameters like those adopted for Parkway Delaware Unit while the Exxon proposal does not;

(ii) it allocates the total unit future oil production equitably among the tracts while the Exxon participation formula is flawed because it fails to do so.

(20) Based upon the foregoing, the Commission concludes that:

(a) Premier's claim of an additional 82 feet of "pay" is refuted by their own workover attempt in October, 1995. Their workover of the FV3 Well in what they considered to be "pay not accounted for in the Unit participation formula", resulted in 6 to 7 barrels of oil and 300 barrels of water per day, which is uneconomic. This section overlies the disputed 82 feet of additional pay, but both zones correlate with uneconomic production from the Yates Citdel ZG "Stat" No. 1, the south offset to this well;

(b) Premier's arguments and proposed participation formula is limited to oil-in-place calculations. The oil-in-place is a log calculation which may or may not be producible. Equal value was given to potential CO2 reserves compared to primary and secondary recoveries which are far less risky operations.

(c) the geological interpretation of Premier's was a more believable and scientifically sound interpretation. Unfortunately, for Premier, the production results show the additional potential pay to be uneconomic;

(d) Premier has had five years to test the Delaware potential on their marginally economic lease. They have failed to prove additional recoverable reserves, leaving only the risky potential of CO2 flooding;

(e) Premier did not present their proposal to Exxon in a timely manner, although they were afforded the opportunity from the beginning to do so. Premier did not carry out their responsibilities, by delaying involvement in negotiations They benefited from Yates' efforts at negotiation, but did not contribute to the process. An estimated six to twenty-four months would be required to re-negotiate a new unitization formula. Such a delay constitutes waste;

(f) the correlative rights of all interest owners are protected by the Exxon Unit participation formula. It is not the Commission's responsibility to change a formula which was the product of negotiation if that formula is "fair". That is not to say that other formulas, derived as a result of negotiations would not be "fair" because there is no one perfect formula. Premier will benefit by receiving income from the start even though their tract is uneconomic today. However, CO2 "potential" earns Premier the right according to Exxon's formula to receive income from the start of unit operation;

(g) Premier protests the division of its property for the formation of the unit, but no convincing alternative was presented to demonstrate that the ultimate recovery of reserves would result from such proposed division. Excluding Premier's tract would in fact delay unitization and disrupt the orderly development of a CO2 flood.

(21) The proposed unitized method of operation as applied to the Avalon (Delaware) Unit is feasible and will result with reasonable probability in the recovery of substantially more oil and gas from the unitized portion of the Avalon-Delaware Pool than would otherwise be recovered without unitization.

(22) Such unitization and adoption of applicant's proposed unitized method of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the Avalon (Delaware) Unit Area.

(23) The granting of the applications in these cases will have no adverse effect upon the interest owners in the Avalon-Delaware Pool.

(24) The estimated additional costs of such operations will not exceed the estimated value of the additional oil so recovered.

(25) The applicant's Exhibit Nos. 2 and 3 in this case, being the Unit Agreement and Unit Operating Agreement, should be incorporated by reference into this order.

(26) The unitized management, operation and further development of the Avalon (Delaware) Unit Area, as proposed, is necessary to effectively increase the ultimate recovery of oil and gas from the unitized portion of the Avalon-Delaware Pool.

(27) The Avalon (Delaware) Unit Agreement and the Avalon (Delaware) Unit Operating Agreement provide for unitization and unit operation for the Avalon (Delaware) Unit Area upon terms and conditions that are fair, reasonable and equitable, and include:

(a) a participation formula which will result in fair, reasonable and equitable allocation to the separately owned tracts of the Unit Area of all oil and gas that is produced from the Unit Area and which is saved, being the production that is (i) not used in the conduct of unit operations, or (ii) unavoidably lost,

(AVALON-DELAWARE (AVALON (DELAWARE) UNIT AREA STATUTORY UNITIZATION AND WATERFLOOD PROJECT) POOL - Cont'd.)

(b) a provisions for the credits and charges to be made in the adjustment among the owners in the Unit Area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to unit operations;

(c) a provision governing how the costs of unit operations including capital investments shall be determined and charged to the separately-owned tracts and how said costs shall be paid, including a provision providing when, how and by whom such costs shall be charged to each owner, or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;

(d) a provision for carrying any working interest owner on a limited or carried basis payable out of production, upon terms and conditions which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Commission to be just and reasonable;

(e) a provision designating the Unit Operator and providing for supervision and conduct of the unit operations, including the selection, removal and substitution of an operator from among the working interest owners to conduct the unit operations;

(f) a provision for a voting procedure for decisions on matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and

(g) a provision specifying the time when unit operations shall commence and the manner in which, and the circumstances under which, the operations shall terminate and for the settlement of accounts upon such termination.

(28) The applicant requested that a 200 percent penalty of cost incurred be assessed against those working interest owners who do not voluntarily agree to join the proposed unit.

(29) Section 70-7-7.F NMSA (1978) provides that the unit plan of operation shall include a provision for carrying any working interest owner subject to limitations set forth in the statute, and any non-consenting working interest owner so carried shall be deemed to have relinquished to the unit operator all of his operating rights and working interest in and to the unit until his share of the costs has been repaid plus an amount not to exceed 200 percent thereof as a non-consent penalty.

(30) The Unit Operating Agreement contains a provision whereby any working interest owner who elects not to pay his share of unit expense shall be liable for his share of such unit expense plus an additional 200 percent thereof as a non-consent penalty, and that such costs and non-consent penalty may be recovered from each non-consenting working interest owner's share of unit production.

(31) A non-consent penalty of 200 percent should be adopted in this case. The applicant should be authorized to recover from unit production each non-consenting working interest owner's share of unit expense plus 200 percent thereof as provided in the Unit Operating Agreement.

(32) The statutory unitization of the Avalon (Delaware) Unit Area is in conformity with the above findings, and will prevent waste and protect the correlative rights of all interest owners within the proposed Unit Area, and should be approved.

(33) The proposed Avalon (Delaware) Unit Area contains undeveloped acreage and acreage that will not be part of the initial waterflood project. Therefore, in compliance with Division General Rule 701.G(3), the initial waterflood project area for allowable and tax credit purposes should be reduced to include the following described 1088.50 acres in Eddy County, New Mexico:

Township 20 South, Range 28 East, NMPM
Section 30: Lots 1 through 4, SE/4 NW/4, E/2 SW/4, and S/2 SE/4
Section 31: Lots 1 through 3, NE/4, E/2 NW/4, NE/4 SW/4, N/2 SE/4, and SE/4 SE/4
Section 32: W/2 NW/4, N/2 SW/4, and SW/4 SW/4

(34) Exhibit "A", attached hereto and made a part hereof, lists the 19 proposed injection (18 of which are to be new drills and one of which is to be a conversion) for the initial waterflood project. It is the applicant's intent to drill the 18 new wells and initially complete them first as oil producing wells and eventually convert them to water injectors. Approval of the unorthodox locations is necessary for "start-up" of said waterflood project.

(35) The waterflood pattern to be utilized initially is to be a 40-acre inverted five-spot comprising the 19 aforementioned water injection wells and 27 producing wells.

(36) The present Delaware oil producing wells within the subject project area and interval are in an advanced state of depletion and should therefore be properly classified as "stripper wells."

(37) The operator of the proposed Avalon (Delaware) Unit Waterflood Project should take all steps necessary to ensure that the injected water enters and remains confined to only the proposed injection interval and is not permitted to escape from that interval and migrate into other formations, producing intervals, pools, or onto the surface from injection, production, or plugged and abandoned wells.

(38) Injection should be accomplished through lined or otherwise corrosion-resistant tubing installed in a packer set within 500 feet of the uppermost injection perforation; the casing-tubing annulus in each well should be filled with an inert fluid and equipped with an approved gauge or leak-detection device. The supervisor of the Artesia District Office of the Division may authorize the setting of the casing-tubing isolation device at a shallower depth if appropriate.

(39) Prior to commencing injection operations, each injection well should be pressure tested throughout the interval from the surface down to the proposed upper-most perforation to assure mechanical integrity of each well.

(40) The injection wells or pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 490 psi; however, the Division Director should have the authority to administratively authorize a pressure increase upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(41) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-tests in order that the same may be witnessed.

(42) The proposed waterflood project should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(43) The applicant further requests that the subject waterflood project be approved by the Division as a qualified Enhanced Oil Recovery Project ("EOR") pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Section 1 through 5.)

(44) The evidence presented indicates that the subject waterflood project meets all the criteria for approval.

(45) The approved "project area" should initially comprise that area described in Finding Paragraph No. (33) above.

(AVALON-DELAWARE (AVALON (DELAWARE) UNIT AREA STATUTORY UNITIZATION AND WATERFLOOD PROJECT) POOL - Cont'd.)

(46) To be eligible for the EOR credit, prior to commencing injection operations the operator must request from the Division a Certificate of Qualification, which Certificate will specify the proposed project area as described above.

(47) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the operator must apply to the Division for certification of a positive production response, which application shall identify the area actually benefiting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells which area eligible for the credit.

(48) The injection authority granted herein for the proposed injection wells should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided, however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(49) Division Order No. R-10460, entered September 18, 1995, approved statutory unitization, and unitization became effective October 1, 1995.

IT IS THEREFORE ORDERED THAT:

(1) The application of Exxon Corporation for the Avalon (Delaware) Unit, covering 2118.78 acres, more or less, of State, Federal, and fee lands in the Avalon-Delaware Pool, Eddy County, New Mexico, is hereby approved for statutory unitization pursuant to the "Statutory Unitization Act," Section 70-7-1 through 70-7-21 NMSA (1978).

(2) The Avalon (Delaware) Unit Agreement and the Avalon (Delaware) Unit Operating Agreement, which were submitted to the Commission at the time of the hearing as Exhibits 2 and 3, are hereby incorporated by reference into this order.

(3) The lands herein designated the Avalon (Delaware) Unit Area shall comprise the following described acreage in Eddy County, New Mexico:

Township 20 South, Range 27 East, NMPM
Section 25: E/2 E/2
Section 36: E/2 E/2

Township 20 South, Range 28 East, NMPM
Section 29: SW/4 SW/4
Section 30: Lots 1 through 4, E/2 W/2, SW/4 NE/4, SE/4
Section 31: Lots 1 through 4, E/2 W/2, E/2 (All)
Section 32: SW/4 NE/4, W/2, W/2 SE/4

Township 21 South, Range 27 East, NMPM
Section 4: Lot 4
Section 5: Lots 1 and 2
Section 6: Lots 1 and 2

(4) The vertical limits or "unitized formation" of the unitized area shall include that interval underlying the Unit Area described as the Delaware Mountain Group, extending from 100 feet above the base of the Goat Seep Reef to the top of the Bone Spring formation and including, but not limited to, the Cherry Canyon and Brushy Canyon Formations, as identified on the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet from the North and East lines of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico, with the top of the unitized formation being found in said well at a depth of 2,378 feet below the surface (869 feet above sea level) and the base of the unitized formation being found at a depth of 4,880 feet below the surface (1,633 feet below sea level), or stratigraphic equivalents thereof.

(5) Since the persons owning the required statutory minimum percentage of interest in the Unit Area have approved, ratified, or indicated their preliminary approval of the Unit Agreement and the Unit Operating Agreement, the interests of all persons within the Unit Area are hereby unitized whether or not such persons have approved the Unit Agreement or the Unit Operating Agreement in writing.

(6) The applicant, hereby designated as Unit Operator, shall notify in writing the Division Director of any removal or substitution of said Unit Operator by any other working interest owner within the Unit Area.

(7) A non-consent penalty of 200 percent is hereby adopted in this case The unit operator shall be authorized to recover from unit production each non-consenting working interest owner's share of unit expense plus 200 percent thereof as provided in the Unit Operating Agreement.

IT IS FURTHER ORDERED THAT:

(8) Exxon is hereby authorized to institute a waterflood project in its Avalon (Delaware) Unit Area by the injection of water into the designated and Undesignated Avalon-Delaware pool, as found in that stratigraphic interval between 2378 feet to 4880 feet and identified by the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet form the North and East lines (Unit A) of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico. Injection will be through nineteen wells described in Exhibit "A" attached hereto and made a part hereof.

(9) In compliance with Division General Rule 701.G(3), the initial waterflood project area, for allowable and tax credit purposes, shall comprise the following described 1088.50 acres in Eddy County, New Mexico:

Township 20 South, Range 28 East, NMPM
Section 30: Lots 1 through 4, SE/4 NW/4, E/2 SW/4, and S/2 SE/4
Section 31: Lots 1 through 3, NE/4, E/2 NW/4, NE/4 SW/4, N/2 SE/4, and SE/4 SE/4
Section 32: W/2 NW/4, N/2 SW/4, and SW/4 SW/4

(10) The applicant must take all steps necessary to ensure that the injected water only enters and remains confined to the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

IT IS FURTHER ORDERED THAT:

(11) Injection shall be accomplished through lined or otherwise corrosion-resistant tubing installed in packer set within 500 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved gauge or leak-detection device. The supervisor of the Artesia District Office of the Division can authorize the setting of the casing-tubing isolation device at a shallower depth if appropriate.

(12) The 19 water injection wells or pressurization system shall be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 490 psi.

(13) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the 490 psi herein authorized upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(14) Prior to commencing injection operations, each injection well shall be pressure tested throughout the interval from the surface down to the proposed upper most perforation to assure mechanical integrity of each well.

(15) The operator shall give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(AVALON-DELAWARE (AVALON (DELAWARE) UNIT AREA STATUTORY UNITIZATION AND WATERFLOOD PROJECT) POOL - Cont'd.)

(16) The applicant shall immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing or seal bore assembly in any of the injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(17) The applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.

FURTHERMORE:

(18) The subject waterflood project is hereby approved as an Enhanced Oil Recovery Project ("EOR") pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(19) The approved "project area" shall initially comprise that area described in Decretory Paragraph No. (9) above.

(20) To be eligible for the EOR credit, prior to commencing injection operations the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area as described above.

(21) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the operator must apply to the Division for certification of a positive production response, which application shall identify the area actually benefiting from enhanced recover operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented the Division will certify to the Department of Taxation and Revenue those lands and wells which are eligible for the credit.

(22) The injection authority granted herein for the proposed injection wells shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided, however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(23) The applicant is authorized to drill the first eighteen wells listed on Exhibit "A" attached thereto. The applicant may complete the wells as producers and later convert them to injection.

(24) Division Order No. R-10460 is hereby affirmed.

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

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

EXHIBIT "A"

CASE NO. 11297
ORDER NO. R-10460-B

EXXON CORPORATION
PROPOSED WATER INJECTION WELLS/UNORTHODOX OIL WELL LOCATIONS
AVALON (DELAWARE) UNIT WATERFLOOD PROJECT AREA

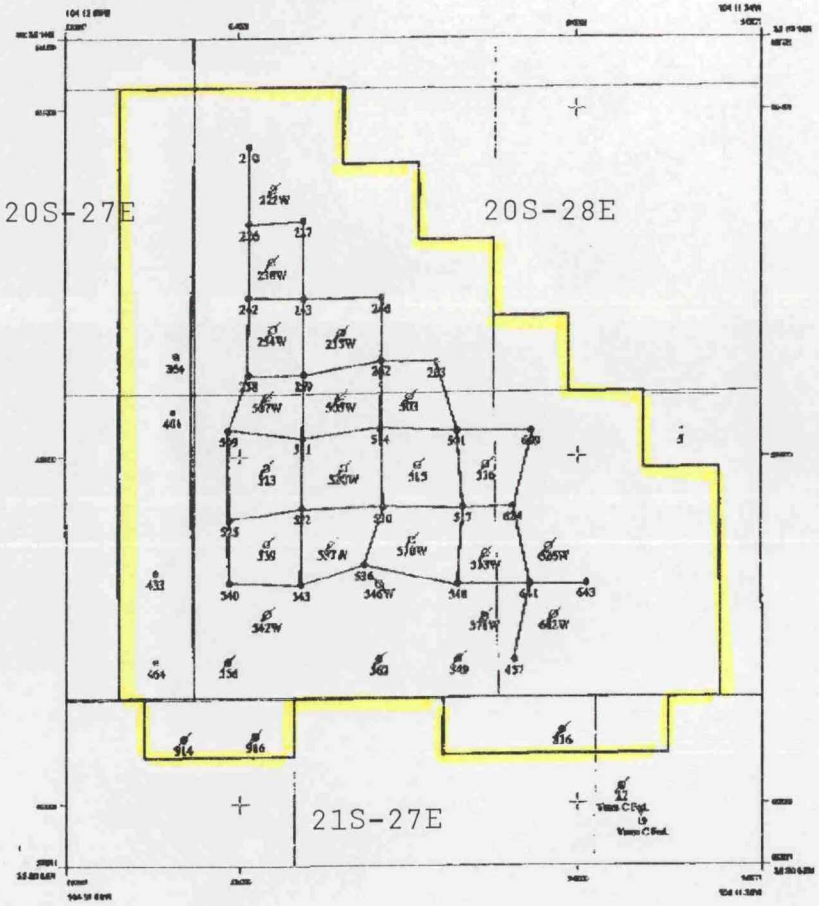
TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM.
EDDY COUNTY, NEW MEXICO

WELL NO.	ORIGINALLY PROPOSED LOCATION	SECTION	ACTUAL STAKED LOCATION	PROPOSED PERFORATED INTERVAL FEET
1212	1668' FNL & 1455' FWL	30	1665' FNL & 1452' FWL	2486 - 4817
1412	2318' FSL & 1485' FWL	30	2301' FSL & 1485' FWL	2509 - 4832
1612	992' FSL & 1489' FWL	30	1152' FSL & 1489' FWL	2492 - 4798
1614	1046' FSL & 2677' FWL	30	NO CHANGE	2498 - 4853
1812	183' FNL & 1397' FWL	31	181' FNL & 1355' FWL	2467 - 4774
1814	123' FNL & 2673' FEL	31	NO CHANGE	2496 - 4844
1816	46' FNL & 1402' FEL	31	43' FNL & 1458' FEL	2510 - 4902
2012	1386' FNL & 1314' FWL	31	NO CHANGE	2461 - 4880
2014	1335' FNL & 2681' FWL	31	1388' FNL & 2750' FWL	2495 - 4843
2016	1317' FNL & 97' FEL	31	1310' FNL & 97' FEL	2501 - 4924
2212	2600' FSL & 1321' FWL	31	NO CHANGE	2496 - 4817
2214	2699' FSL & 2549' FWL	31	2610' FSL & 2549' FWL	2509 - 4841
2216	2566' FNL & 1377' FEL	31	2564' FNL & 1377' FEL	2505 - 4885
2218	2423' FSL & 78' FEL	31	2517' FSL & 78' FEL	2477 - 4918
2220	2648' FSL & 1127' FWL	32	2658' FSL & 1127' FWL	2489 - 4945
2412	1337' FSL & 1324' FWL	31	NO CHANGE	2535 - 4826
2418	1356' FSL & 99' FEL	31	NO CHANGE	2478 - 4911
2420	1323' FSL & 1107' FWL	31	1333' FSL & 1107' FWL	2479 - 4935
2016*	1305' FNL & 1305' FEL	31	NO CHANGE	2478 - 4880

*Already drilled under prior Division Order (previously designated the Exxon Corporation Yates "C" Federal No. 36).

Avalon Delaware Unit

Eddy County, New Mexico
Water Injection Pattern



Well Status Symbols

- Oil Producer
- Water Injector
- Pre-Producing Injector
- Make-Up Source Water
- TA'd Producer
- Disposal
- Shut-In Oil Producer

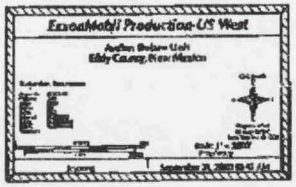


EXHIBIT B

Avalon Delaware Unit

Well List

Well Name	API No.	S-T-R	Location	Well Type
AVALON_UT_0210	300152465300	31-20S-28E	990 FNL, 990 FWL	P
AVALON_UT_0222W	300152865800	31-20S-28E	1665 FNL, 1452 FWL	WIW
AVALON_UT_0226	300152463600	31-20S-28E	2310 FNL, 990 FWL	P
AVALON_UT_0227	300152471000	31-20S-28E	2310 FNL,1980 FWL	P
AVALON_UT_0238W	300152865900	31-20S-28E	2301 FSL,1485 FWL	WIW
AVALON_UT_0242	300152463700	31-20S-28E	1650 FSL, 990 FWL	P
AVALON_UT_0243	300152457400	31-20S-28E	1650 FSL, 1980 FWL	P
AVALON_UT_0246	300152462300	31-20S-28E	1650 FSL, 1980 FEL	P
AVALON_UT_0253W	300152866100	31-20S-28E	1046 FSL, 2667 FWL	WIW
AVALON_UT_0254W	300152866000	31-20S-28E	1152 FSL, 1489 FWL	WIW
AVALON_UT_0258	300152454600	31-20S-28E	330 FSL, 990 FWL	P
AVALON_UT_0259	300152448700	31-20S-28E	330 FSL, 1980 FWL	P
AVALON_UT_0262	300152441400	31-20S-28E	560 FSL, 1980 FEL	P
AVALON_UT_0263	300152454300	31-20S-28E	450 FSL, 990 FEL	P
AVALON_UT_0364	300152477000	25-20S-27E	660 FSL, 333 FEL	SI
AVALON_UT_0401	300152479400	36-20S-27E	330 FNL, 330 FEL	S
AVALON_UT_0433	300152344300	36-20S-27E	2180 FSL, 660 FEL	S
AVALON_UT_0464	300152474800	36-20S-27E	660 FSL, 660 FEL	SI
AVALON_UT_0501	300152433100	31-20S-28E	660 FNL, 660 FEL	P
AVALON_UT_0503	300152859400	31-20S-28E	43 FNL, 1458 FEL	WIW
AVALON_UT_0505W	300152867700	31-20S-28E	123 FNL, 2673 FEL	WIW
AVALON_UT_0507W	300152867800	31-20S-28E	101 FNL, 1355 FWL	WIW
AVALON_UT_0509	300152433200	31-20S-28E	660 FNL, 660 FWL	P
AVALON_UT_0511	300152452400	31-20S-28E	760 FNL, 1980 FWL	P
AVALON_UT_0514	300152419400	31-20S-28E	660 FNL, 1980 FEL	P
AVALON_UT_0515	300152637000	31-20S-28E	1305 FNL, 1305 FEL	P
AVALON_UT_0516	300152866500	31-20S-28E	1310 FNL, 97 FEL	P
AVALON_UT_0517	300152433700	31-20S-28E	1980 FNL, 560 FEL	P
AVALON_UT_0520W	300152866400	31-20S-28E	1388 FNL, 2750 FWL	WIW
AVALON_UT_0522	300150243400	31-20S-28E	1980 FNL, 1980 FWL	P
AVALON_UT_0523	300152891000	31-20S-28E	1336 FNL, 1314 FWL	WIW
AVALON_UT_0525	300152433600	31-20S-28E	2180 FNL, 660 FWL	P
AVALON_UT_0530	300152433500	31-20S-28E	1980 FNL, 1980 FEL	P
AVALON_UT_0533W	300152866700	31-20S-28E	2517 FSL, 78 FEL	WIW
AVALON_UT_0536	300152452500	31-20S-28E	2310 FSL, 2310 FEL	P
AVALON_UT_0537W	300152868300	31-20S-28E	2610 FWL, 2549 FWL	WIW
AVALON_UT_0539	300152868200	31-20S-28E	2600 FSL, 1322 FWL	P
AVALON_UT_0540	300152438600	31-20S-28E	1980 FSL, 660 FWL	P
AVALON_UT_0542W	300152868400	31-20S-28E	1337 FSL, 1324 FWL	WIW
AVALON_UT_0543	300152437600	31-20S-28E	1980 FSL, 1980 FWL	P
AVALON_UT_0546W	300152404800	31-20S-28E	1980 FSL, 1980 FEL	D
AVALON_UT_0548	300152437300	31-20S-28E	1980 FSL, 660 FEL	P
AVALON_UT_0549	300152437800	31-20S-28E	660 FSL, 660 FEL	TA

EXHIBIT C

Avalon Delaware Unit

Well List

Well Name	API No.	S-T-R	Location	Well Type
AVALON_UT_0556	300152437900	31-20S-28E	660 FSL, 660 FWL	TA
AVALON_UT_0562	300152437700	31-20S-28E	660 FSL, 1980 FEL	S
AVALON_UT_0570W	300152866600	31-20S-28E	2564 FNL, 1377 FEL	WIW
AVALON_UT_0571W	300152866800	31-20S-28E	1356 FSL, 99 FEL	WIW
AVALON_UT_573W	300152868300	31-20S-28E	2610 FSL, 2549 FWL	WIW
AVALON_UT_0609	300152438800	32-20S-28E	660 FNL, 660 FWL	P
AVALON_UT_0624	300152441000	32-20S-28E	1980 FNL, 330 FWL	P
AVALON_UT_0626W	300152866200	32-20S-28E	2658 FSL, 1127 FWL	WIW
AVALON_UT_0641	300152440900	32-20S-28E	1980 FSL, 610 FWL	P
AVALON_UT_0642W	300152866300	32-20S-28E	1333 FSL, 1107 FWL	WIW
AVALON_UT_0643	300152449500	32-20S-28E	1980 FSL, 1650 FWL	P
AVALON_UT_0657	300152447300	32-20S-28E	660 FSL, 330 FWL	P
AVALON_UT_0816	300152469600	5-21S-27E	6945 FSL, 560 FEL	S
AVALON_UT_0914	300152475100	6-21S-27E	660 FNL, 1980 FEL	TA
AVALON_UT_0916	300152468700	6-21S-27E	660 FNL, 660 FEL	S

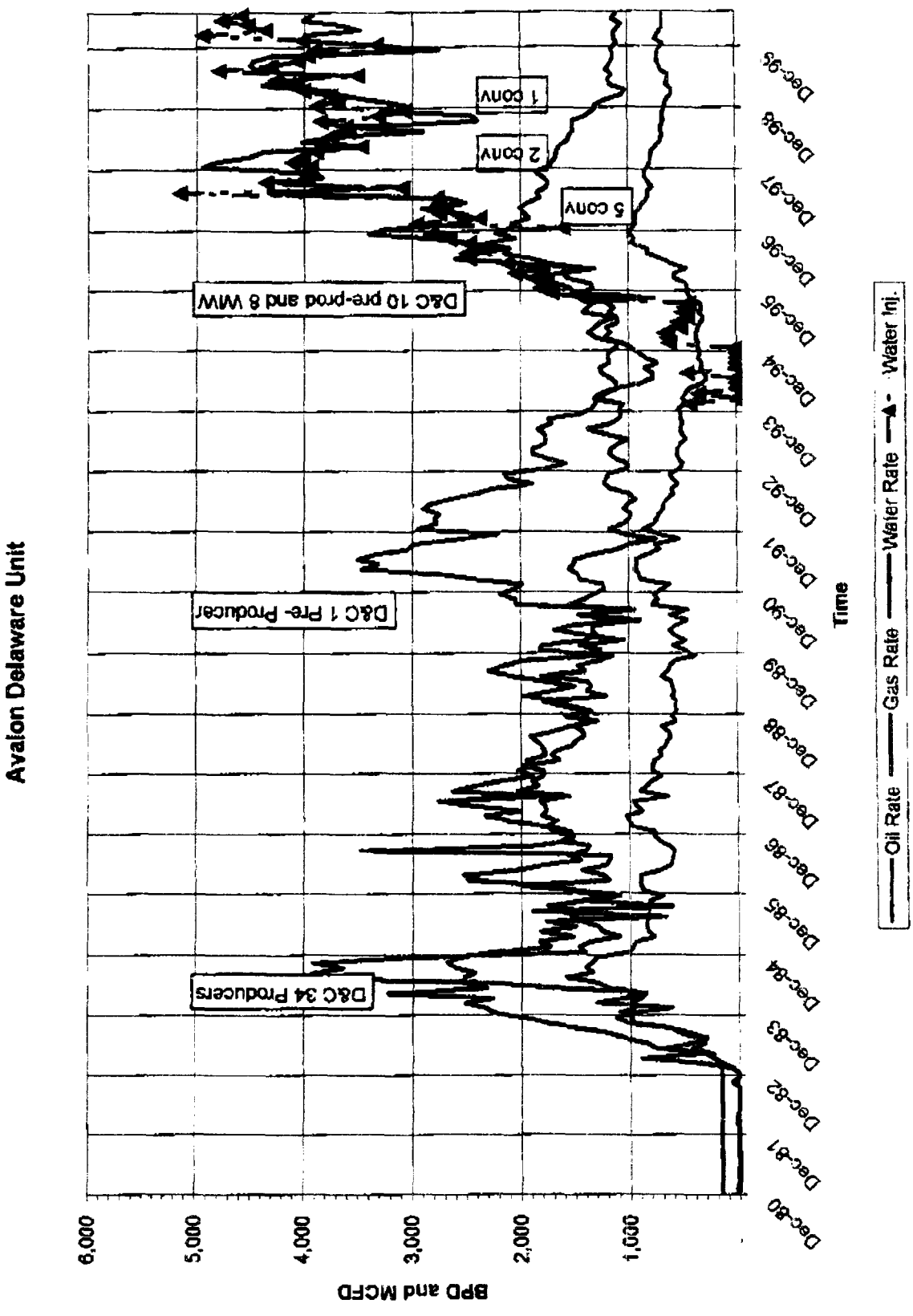
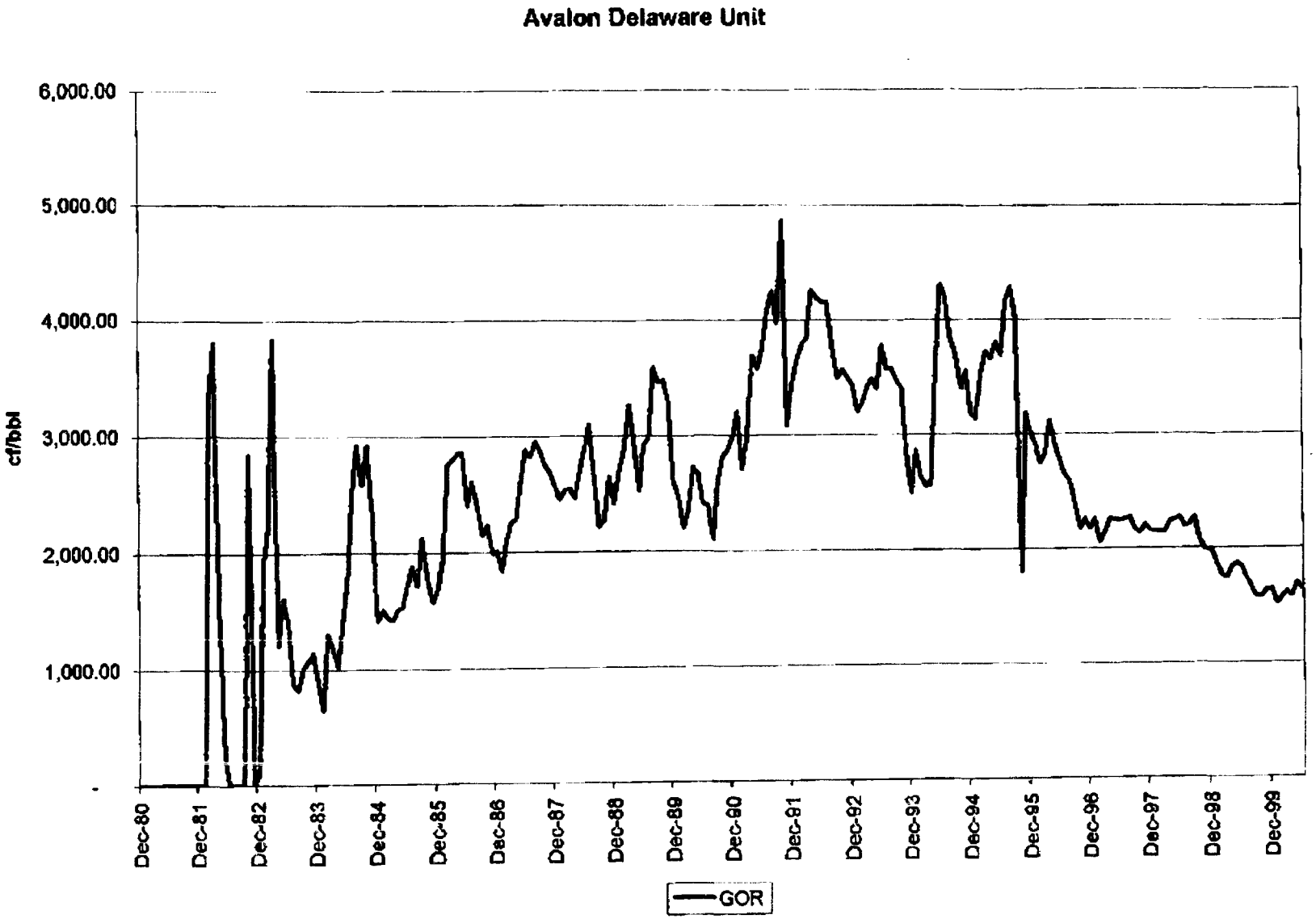
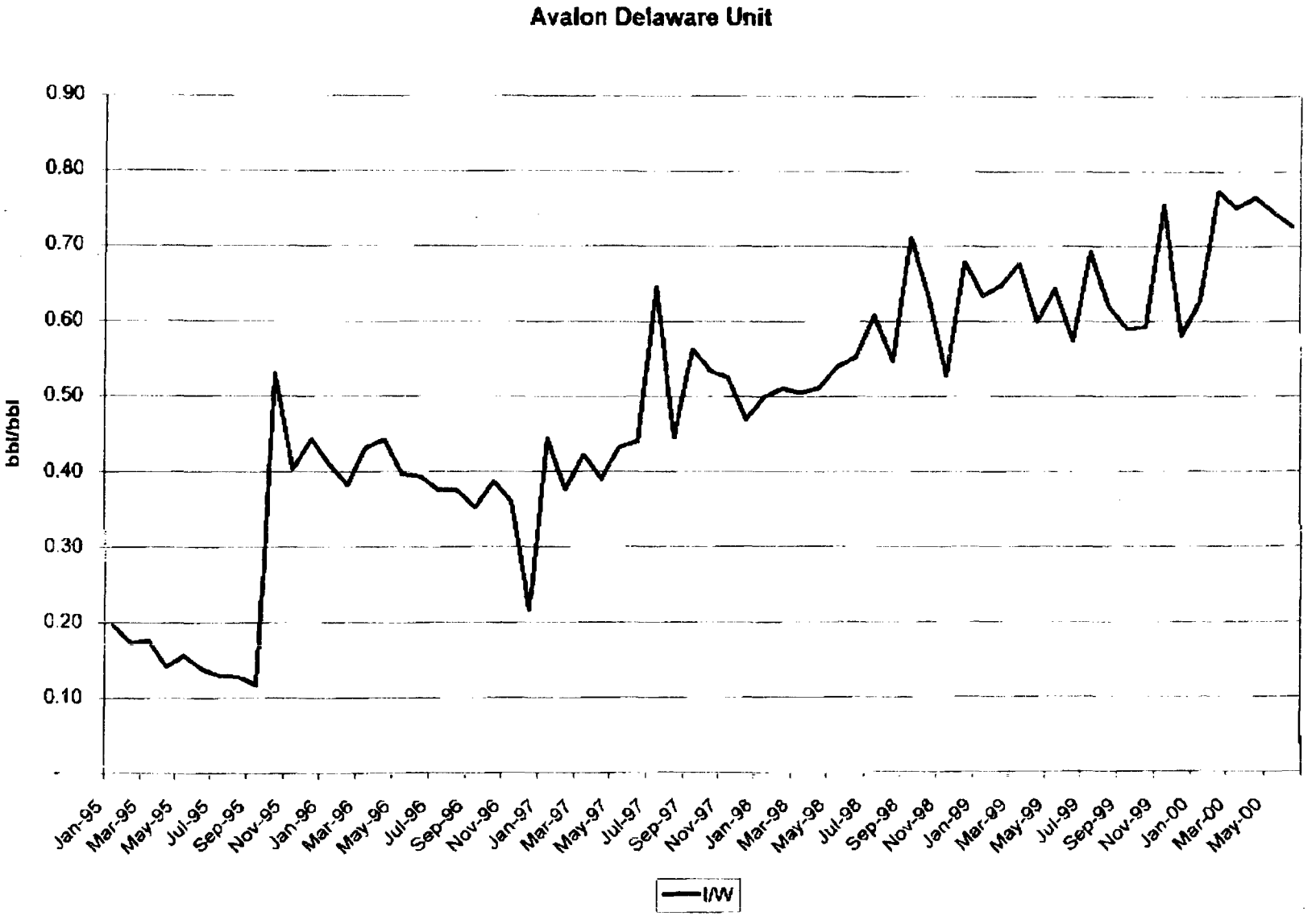

Avalon Delaware Unit
BPD and MCFD
6,000
5,000
4,000
3,000
2,000
1,000
Dec-80
Dec-81
Dec-82
Dec-83
Dec-84
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
Time
Oil Rate
Gas Rate
Water Rate
Water Inj.
D&C 34 Producers
D&C 1 Pre- Producer
D&C 10 pre-prod and 8 WWV
1 conv
2 conv
5 conv

EXHIBIT D


Avalon Delaware Unit
6,000.00
5,000.00
4,000.00
3,000.00
2,000.00
1,000.00
-
cf/bbl
Dec-80
Dec-81
Dec-82
Dec-83
Dec-84
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
GOR


Avalon Delaware Unit
bbl/bbl
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
-
Jan-95
Mar-95
May-95
Jul-95
Sep-95
Nov-95
Jan-96
Mar-96
May-96
Jul-96
Sep-96
Nov-96
Jan-97
Mar-97
May-97
Jul-97
Sep-97
Nov-97
Jan-98
Mar-98
May-98
Jul-98
Sep-98
Nov-98
Jan-99
Mar-99
May-99
Jul-99
Sep-99
Nov-99
Jan-00
Mar-00
May-00
I/W

Avalon Delaware Unit

Production and Injection Data

DATE	Calendar Day Oil Rate bbl/d	Calendar Day Gas Rate Mcf/d	Calendar Day Water Rate bbl/d	Calendar Day Water Inj. bbl/d	Cumulative Oil Produced Mbbl	Cumulative Gas Produced MMcf	Cumulative Water Produced Mbbl	Cumulative Water Injected Mbbl	GOR cf/bbl	I/W
Dec-80	19	-	156		1	-	5	-	-	
Jan-81	15	-	156		1	-	10	-	-	
Feb-81	7	-	156		1	-	14	-	-	
Mar-81	12	-	156		2	-	19	-	-	
Apr-81	10	-	156		2	-	24	-	-	
May-81	8	-	156		2	-	28	-	-	
Jun-81	6	-	156		2	-	33	-	-	
Jul-81	7	-	156		3	-	38	-	-	
Aug-81	7	-	156		3	-	43	-	-	
Sep-81	7	-	156		3	-	47	-	-	
Oct-81	7	-	156		3	-	52	-	-	
Nov-81	7	-	156		3	-	57	-	-	
Dec-81	7	-	156		4	-	62	-	-	
Jan-82	4	-	156		4	-	67	-	-	
Feb-82	7	23	156		4	1	71	-	3,263	
Mar-82	5	21	156		4	1	76	-	3,808	
Apr-82	5	8	156		4	2	81	-	1,504	
May-82	5	1	151		4	2	85	-	228	
Jun-82	6	-	156		5	2	90	-	-	
Jul-82	5	-	157		5	2	95	-	-	
Aug-82	2	-	157		5	2	100	-	-	
Sep-82	4	-	156		5	2	104	-	-	
Oct-82	23	65	157		6	4	109	-	2,843	
Nov-82	4	-	156		6	4	114	-	-	
Dec-82	4	0	156		6	4	119	-	96	
Jan-83	45	85	157		7	6	123	-	1,907	
Feb-83	142	317	181		11	15	129	-	2,237	
Mar-83	233	895	231		18	43	136	-	3,843	
Apr-83	245	295	321		26	52	145	-	1,204	
May-83	431	690	756		39	73	169	-	1,601	
Jun-83	318	446	839		49	86	194	-	1,402	
Jul-83	343	297	1,044		59	96	226	-	866	
Aug-83	553	451	1,193		76	110	263	-	817	
Sep-83	622	627	1,484		95	128	308	-	1,007	
Oct-83	960	1,025	1,767		125	160	363	-	1,068	
Nov-83	988	1,122	1,961		155	194	421	-	1,136	
Dec-83	1,088	968	2,255		188	224	491	-	889	
Jan-84	948	609	2,327		218	243	564	-	642	
Feb-84	999	1,300	2,516		247	280	636	-	1,301	
Mar-84	897	1,046	2,256		274	313	706	-	1,166	
Apr-84	854	868	3,226		300	339	803	-	1,017	
May-84	1,202	1,687	2,314		337	391	875	-	1,404	
Jun-84	1,297	2,260	2,531		376	459	951	-	1,742	
Jul-84	1,584	3,884	2,530		425	579	1,029	-	2,452	
Aug-84	1,340	3,915	2,423		467	701	1,104	-	2,920	
Sep-84	1,408	3,532	2,602		509	810	1,182	-	2,580	
Oct-84	1,338	3,908	2,679		551	931	1,266	-	2,920	
Nov-84	1,309	3,055	2,573		590	1,023	1,343	-	2,333	
Dec-84	1,004	1,417	2,282		621	1,066	1,413	-	1,411	
Jan-85	968	1,460	1,728		651	1,112	1,467	-	1,508	
Feb-85	950	1,368	1,830		678	1,150	1,518	-	1,440	
Mar-85	779	1,099	1,523		702	1,184	1,565	-	1,411	

EXHIBIT E

Avalon Delaware Unit

Production and Injection Data

DATE	Calendar Day Oil Rate bbl/d	Calendar Day Gas Rate Mcf/d	Calendar Day Water Rate bbl/d	Calendar Day Water Inj bbl/d	Cumulative Oil Produced Mbbl	Cumulative Gas Produced MMcf	Cumulative Water Produced Mbbl	Cumulative Water Injected Mbbl	GOR cf/bbl	I/W
Apr-85	829	1,251	1,820		727	1,222	1,620	-	1,509	
May-85	848	1,294	1,496		753	1,262	1,666	-	1,526	
Jun-85	842	1,439	1,767		778	1,305	1,719	-	1,708	
Jul-85	817	1,536	664		804	1,353	1,740	-	1,680	
Aug-85	921	1,406	1,889		829	1,396	1,799	-	1,711	
Sep-85	828	1,755	606		854	1,449	1,817	-	2,120	
Oct-85	819	1,452	1,361		879	1,494	1,859	-	1,772	
Nov-85	690	1,085	1,207		900	1,526	1,895	-	1,571	
Dec-85	874	1,475	1,551		927	1,572	1,943	-	1,688	
Jan-86	890	1,737	1,981		955	1,626	2,005	-	1,951	
Feb-86	900	2,477	1,195		980	1,695	2 038	-	2,753	
Mar-86	902	2,527	1,244		1,008	1,774	2,077	-	2,802	
Apr-86	717	2,045	1,437		1,029	1,835	2,120	-	2,852	
May-86	623	1,780	1,216		1,049	1,890	2,158	-	2,856	
Jun-86	608	1,452	1,185		1,067	1,934	2.193	-	2,397	
Jul-86	597	1,554	1,170		1,085	1,982	2,229	-	2,603	
Aug-86	585	1,399	3,468		1,103	2,025	2,337	-	2,390	
Sep-86	638	1,369	1,861		1,123	2,066	2,393	-	2 143	
Oct-86	724	1,618	1,527		1,145	2 116	2,441	-	2 233	
Nov-86	754	1,517	1,547		1,168	2,162	2,487	-	1 987	
Dec-86	770	1,547	1,710		1,192	2,210	2,540	-	2 008	
Jan-87	971	1,782	1,761		1,222	2,265	2,595	-	1,834	
Feb-87	999	2,104	1,669		1,250	2,324	2,641	-	2 106	
Mar-87	1,031	2,329	1,805		1,282	2,396	2,697	-	2 258	
Apr-87	861	2,013	1,769		1,308	2,457	2,750	-	2,284	
May-87	940	2,446	1,780		1,337	2,532	2,806	-	2,604	
Jun-87	960	2,762	1,823		1,366	2,615	2,860	-	2,878	
Jul-87	646	1,817	1,557		1,388	2,672	2,909	-	2,813	
Aug-87	894	2,633	2,031		1,414	2,753	2,972	-	2,944	
Sep-87	845	2,437	1,842		1,439	2,826	3,027	-	2,882	
Oct-87	795	2,184	1,893		1,464	2,894	3,085	-	2,747	
Nov-87	705	1,892	1,790		1,485	2,951	3,139	-	2,685	
Dec-87	786	2,022	1,797		1,509	3,014	3,195	-	2,571	
Jan-88	783	1 914	1,981		1,534	3,073	3,256	-	2,445	
Feb-88	769	1 948	1,645		1,556	3,129	3,304	-	2,535	
Mar-88	699	1,776	1,720		1,578	3,184	3,357	-	2,543	
Apr-88	724	1,784	1,885		1,599	3,238	3,407	-	2,464	
May-88	669	1,807	1,532		1,620	3,294	3,455	-	2,702	
Jun-88	647	1,857	1,493		1,640	3,350	3,500	-	2,870	
Jul-88	617	1,912	1,415		1,659	3,409	3,543	-	3,098	
Aug-88	635	1,889	1,427		1,678	3,461	3,588	-	2,659	
Sep-88	699	1 544	1,503		1,699	3,508	3,633	-	2,209	
Oct-88	565	1,288	1,385		1,717	3,548	3,676	-	2,278	
Nov-88	601	1,591	1,387		1,735	3,595	3,717	-	2,647	
Dec-88	559	1,345	1,398		1,752	3,637	3,761	-	2,407	
Jan-89	570	1,532	1,619		1,770	3,684	3,811	-	2,685	
Feb-89	566	1,623	1,791		1,786	3,730	3,861	-	2,870	
Mar-89	604	1,971	1,213		1,804	3,791	3,899	-	3,282	
Apr-89	585	1,714	1,389		1,822	3,842	3,940	-	2,933	
May-89	597	1,504	1,348		1,841	3,889	3,982	-	2,517	
Jun-89	613	1,793	1,390		1,859	3,943	4,024	-	2,923	
Jul-89	702	2,083	1,810		1,881	4,007	4,080	-	2,968	

Avalon Delaware Unit

Production and Injection Data

DATE	Calendar Day Oil Rate bbl/d	Calendar Day Gas Rate Mcf/d	Calendar Day Water Rate bbl/d	Calendar Day Water Inj. bbl/d	Cumulative Oil Produced Mbbl	Cumulative Gas Produced MMcf	Cumulative Water Produced Mbbl	Cumulative Water Injected Mbbl	GOR cf/bbl	I/W
Aug-89	640	2,297	1,402		1,901	4,079	4,123	-	3,588	
Sep-89	621	2,150	1,471		1,919	4,143	4,167	-	3,462	
Oct-89	572	1,988	1,271		1,937	4,205	4,207	-	3,475	
Nov-89	382	1,258	1,139		1,948	4,242	4,241	-	3,292	
Dec-89	484	1,258	1,823		1,963	4,282	4,298	-	2,598	
Jan-90	589	1,451	1,801		1,982	4,326	4,353	-	2,463	
Feb-90	477	1,046	1,414		1,995	4,356	4,393	-	2,198	
Mar-90	577	1,367	1,304		2,013	4,398	4,433	-	2,368	
Apr-90	621	1,690	1,337		2,032	4,449	4,473	-	2,719	
May-90	569	1,518	1,329		2,049	4,496	4,515	-	2,669	
Jun-90	456	1,098	892		2,063	4,529	4,541	-	2,408	
Jul-90	614	1,469	1,438		2,082	4,574	4,586	-	2,392	
Aug-90	450	944	1,043		2,096	4,604	4,618	-	2,100	
Sep-90	788	2,042	1,541		2,119	4,665	4,665	-	2,591	
Oct-90	728	2,047	1,417		2,142	4,728	4,708	-	2,912	
Nov-90	762	2,167	1,324		2,165	4,794	4,748	-	2,868	
Dec-90	693	2,068	1,221		2,186	4,858	4,786	-	2,983	
Jan-91	618	1,980	1,237		2,206	4,919	4,824	-	3,203	
Feb-91	697	2,426	1,457		2,231	4,987	4,865	-	2,705	
Mar-91	901	2,717	1,470		2,259	5,072	4,911	-	3,014	
Apr-91	938	3,460	1,554		2,287	5,175	4,957	-	3,689	
May-91	927	3,312	1,512		2,315	5,278	5,004	-	3,575	
Jun-91	932	3,501	1,502		2,343	5,383	5,049	-	3,756	
Jul-91	821	3,338	1,324		2,369	5,487	5,090	-	4,065	
Aug-91	715	3,039	1,090		2,391	5,581	5,124	-	4,248	
Sep-91	751	2,985	985		2,414	5,670	5,154	-	3,972	
Oct-91	527	2,566	747		2,430	5,750	5,177	-	4,865	
Nov-91	715	2,204	1,045		2,451	5,816	5,208	-	3,082	
Dec-91	657	2,951	1,173		2,478	5,907	5,245	-	3,442	
Jan-92	762	2,773	1,045		2,502	5,993	5,277	-	3,637	
Feb-92	739	2,794	994		2,523	6,074	5,306	-	3,783	
Mar-92	717	2,755	980		2,545	6,160	5,336	-	3,843	
Apr-92	660	2,897	1,041		2,566	6,247	5,367	-	4,260	
May-92	676	2,835	998		2,587	6,335	5,398	-	4,193	
Jun-92	637	2,652	932		2,606	6,414	5,426	-	4,160	
Jul-92	584	2,427	991		2,624	6,489	5,457	-	4,152	
Aug-92	599	2,256	1,162		2,642	6,559	5,493	-	3,770	
Sep-92	541	1,990	1,226		2,659	6,616	5,530	-	3,492	
Oct-92	594	2,117	1,204		2,677	6,682	5,567	-	3,566	
Nov-92	615	2,151	1,180		2,695	6,746	5,603	-	3,498	
Dec-92	517	1,770	1,006		2,712	6,801	5,634	-	3,422	
Jan-93	495	1,583	1,001		2,727	6,850	5,665	-	3,199	
Feb-93	535	1,748	1,123		2,742	6,899	5,696	-	3,269	
Mar-93	552	1,886	1,177		2,759	6,958	5,733	-	3,419	
Apr-93	543	1,893	1,163		2,775	7,014	5,768	-	3,485	
May-93	522	1,777	1,097		2,791	7,069	5,802	-	3,404	
Jun-93	468	1,766	1,009		2,805	7,122	5,832	-	3,776	
Jul-93	498	1,777	1,203		2,821	7,178	5,869	-	3,569	
Aug-93	513	1,835	1,378		2,837	7,234	5,912	-	3,575	
Sep-93	495	1,715	1,166		2,852	7,286	5,947	-	3,465	
Oct-93	509	1,735	1,087		2,867	7,340	5,981	-	3,407	
Nov-93	509	1,437	1,063		2,883	7,383	6,013	-	2,825	

Avalon Delaware Unit

Production and Injection Data

DATE	Calendar Day Oil Rate bbl/d	Calendar Day Gas Rate Mcf/d	Calendar Day Water Rate bbl/d	Calendar Day Water Inj. bbl/d	Cumulative Oil Produced Mbbl	Cumulative Gas Produced MMcf	Cumulative Water Produced Mbbl	Cumulative Water Injected Mbbl	GOR cf/bbl	I/W
Dec-93	539	1,343	1,085		2,899	7,424	6,046	-	2,493	
Jan-94	455	1,302	1,043	431	2,913	7,465	6,076	13	2,559	
Feb-94	496	1,306	1,316	-	2,927	7,501	6,115	13	2,631	
Mar-94	470	1,196	1,259	350	2,942	7,538	6,154	24	2,546	
Apr-94	434	1,111	1,121	-	2,955	7,572	6,188	24	2,558	
May-94	315	1,116	885	-	2,965	7,606	6,215	24	3,542	
Jun-94	270	1,164	772	-	2,973	7,641	6,239	24	4,307	
Jul-94	296	1,248	775	452	2,982	7,680	6,263	38	4,214	
Aug-94	328	1,262	848	-	2,992	7,719	6,289	38	3,845	
Sep-94	317	1,173	726	-	3,002	7,754	6,311	38	3,698	
Oct-94	349	1,187	832	-	3,013	7,791	6,337	38	3,404	
Nov-94	333	1,183	901	-	3,023	7,827	6,364	38	3,554	
Dec-94	348	1,106	966	-	3,033	7,861	6,394	38	3,179	
Jan-95	347	1,088	1,060	617	3,044	7,895	6,426	57	3,132	0.20
Feb-95	358	1,295	1,220	635	3,054	7,931	6,461	75	3,521	0.17
Mar-95	368	1,370	1,164	657	3,065	7,973	6,497	95	3,722	0.18
Apr-95	358	1,310	1,203	518	3,077	8,013	6,533	111	3,660	0.14
May-95	330	1,256	1,087	536	3,087	8,051	6,566	128	3,802	0.16
Jun-95	301	1,108	1,107	443	3,096	8,085	6,600	141	3,688	0.14
Jul-95	342	1,421	1,174	498	3,106	8,129	6,636	156	4,154	0.13
Aug-95	320	1,370	1,131	473	3,116	8,171	6,671	171	4,285	0.13
Sep-95	332	1,331	1,204	433	3,126	8,211	6,707	184	4,008	0.12
Oct-95	423	760	1,108	1,418	3,139	8,235	6,742	228	1,798	0.53
Nov-95	446	1,416	1,514	1,704	3,153	8,277	6,787	279	3,180	0.40
Dec-95	443	1,328	1,530	1,811	3,166	8,318	6,834	335	2,998	0.44
Jan-96	465	1,349	1,683	1,757	3,181	8,360	6,887	390	2,902	0.41
Feb-96	571	1,567	1,867	1,878	3,197	8,406	6,941	444	2,747	0.38
Mar-96	568	1,604	1,633	2,048	3,215	8,455	6,991	508	2,826	0.43
Apr-96	461	1,433	1,306	1,793	3,229	8,498	7,031	561	3,108	0.44
May-96	597	1,735	1,990	2,120	3,247	8,552	7,092	627	2,906	0.40
Jun-96	683	1,891	2,601	2,470	3,268	8,609	7,170	701	2,768	0.39
Jul-96	812	2,146	2,470	2,499	3,293	8,675	7,247	779	2,641	0.38
Aug-96	815	2,110	2,092	2,337	3,318	8,741	7,312	851	2,589	0.38
Sep-96	966	2,310	2,453	2,472	3,347	8,810	7,385	925	2,391	0.35
Oct-96	941	2,042	2,787	2,657	3,376	8,873	7,471	1,008	2,171	0.39
Nov-96	986	2,225	3,402	2,826	3,406	8,940	7,573	1,092	2,252	0.36
Dec-96	955	2,070	3,233	1,599	3,436	9,004	7,673	1,142	2,168	0.22
Jan-97	917	2,065	2,549	2,961	3,464	9,068	7,752	1,234	2,253	0.44
Feb-97	934	1,917	2,422	2,370	3,490	9,122	7,820	1,300	2,052	0.38
Mar-97	919	1,968	2,554	2,751	3,519	9,183	7,899	1,385	2,141	0.42
Apr-97	888	2,002	2,912	2,691	3,545	9,243	7,987	1,466	2,254	0.39
May-97	860	1,934	2,505	2,752	3,572	9,303	8,064	1,551	2,249	0.43
Jun-97	811	1,816	2,657	2,771	3,596	9,356	8,144	1,635	2,238	0.44
Jul-97	818	1,842	4,318	5,157	3,622	9,415	8,278	1,794	2,252	0.65
Aug-97	771	1,751	3,450	3,089	3,646	9,469	8,385	1,890	2,272	0.45
Sep-97	807	1,745	4,238	4,355	3,670	9,521	8,512	2,021	2,163	0.56
Oct-97	840	1,793	3,831	3,968	3,696	9,577	8,631	2,144	2,136	0.53
Nov-97	841	1,854	3,910	4,000	3,721	9,633	8,748	2,264	2,206	0.53
Dec-97	801	1,723	4,938	3,936	3,746	9,686	8,901	2,366	2,150	0.47
Jan-98	790	1,696	4,819	4,110	3,770	9,739	9,051	2,513	2,147	0.50
Feb-98	782	1,672	4,506	4,013	3,792	9,785	9,177	2,626	2,138	0.51
Mar-98	777	1,663	4,378	3,892	3,816	9,837	9,313	2,746	2,139	0.50

Avalon Delaware Unit

Production and Injection Data

DATE	Calendar Day Oil Rate bbl/d	Calendar Day Gas Rate Mcf/d	Calendar Day Water Rate bbl/d	Calendar Day Water Inj. bbl/d	Cumulative Oil Produced Mbbl	Cumulative Gas Produced MMcf	Cumulative Water Produced Mbbl	Cumulative Water Injected Mbbl	GOR cf/bbl	I/W
Apr-98	732	1,633	3,543	3,474	3,838	9,886	9,419	2,851	2,231	0.51
May-98	694	1,559	4,021	3,844	3,860	9,934	9,544	2,970	2,247	0.54
Jun-98	681	1,546	3,723	3,752	3,880	9,981	9,655	3,082	2,271	0.55
Jul-98	688	1,510	2,896	3,594	3,902	10,027	9,745	3,194	2,184	0.61
Aug-98	688	1,518	3,579	3,614	3,923	10,075	9,856	3,306	2,207	0.55
Sep-98	665	1,511	2,392	3,846	3,943	10,120	9,928	3,421	2,272	0.71
Oct-98	672	1,384	2,452	3,318	3,964	10,163	10,004	3,524	2,060	0.63
Nov-98	664	1,316	3,142	3,066	3,984	10,202	10,098	3,616	1,980	0.53
Dec-98	653	1,300	3,067	3,677	4,004	10,243	10,193	3,736	1,992	0.68
Jan-99	639	1,198	3,360	3,687	4,024	10,280	10,297	3,850	1,875	0.63
Feb-99	594	1,047	3,639	3,761	4,040	10,309	10,399	3,956	1,763	0.65
Mar-99	584	1,031	3,782	4,009	4,059	10,341	10,516	4,080	1,737	0.68
Apr-99	639	1,171	4,393	4,079	4,078	10,376	10,648	4,202	1,832	0.60
May-99	634	1,181	4,204	4,266	4,098	10,413	10,779	4,335	1,863	0.64
Jun-99	625	1,147	3,750	3,506	4,116	10,447	10,891	4,440	1,836	0.57
Jul-99	692	1,203	4,430	4,798	4,138	10,484	11,028	4,589	1,739	0.69
Aug-99	704	1,173	4,499	4,302	4,160	10,521	11,168	4,722	1,666	0.62
Sep-99	727	1,144	4,472	4,061	4,181	10,555	11,302	4,844	1,574	0.59
Oct-99	724	1,137	4,289	3,964	4,204	10,590	11,435	4,967	1,570	0.59
Nov-99	704	1,151	2,746	3,902	4,225	10,625	11,517	5,084	1,635	0.76
Dec-99	669	1,098	3,435	3,333	4,246	10,659	11,624	5,187	1,642	0.58
Jan-00	743	1,119	4,020	4,019	4,269	10,694	11,748	5,312	1,507	0.63
Feb-00	724	1,133	3,998	4,948	4,290	10,726	11,864	5,455	1,565	0.77
Mar-00	682	1,101	3,488	4,361	4,311	10,760	11,973	5,590	1,613	0.75
Apr-00	675	1,060	3,866	4,523	4,331	10,792	12,083	5,726	1,570	0.77
May-00	678	1,144	4,013	4,770	4,352	10,828	12,207	5,874	1,688	0.75
Jun-00	673	1,102	3,922	4,583	4,372	10,861	12,325	6,011	1,638	0.73