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SANTA FE, NEW MEXICO 87504-2265

JASON KELLAHIN
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April 1, 1991

TELEPHONE (505) 982-4285

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Ale a los

OIL CONSERVATION DIVISION

RECEIVED

Mr. David R. Catanach Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87504

Re: Marathon Oil Company
NMOCD Case No. 19269
Application for Approval of
the McDonald State Waterflood

Project

Dear Mr. Catanach:

Please find enclosed our proposed order for entry in the referenced case. It was heard before Examiner Stogner on March 21, 1991 and continued to the April 18, 1991 docket to recorrect the advertisement.

I have enclosed the order for your review in the hope that we could have it entered immediately following the hearing on April 18, 1991.

Please call me if you have any questions.

W. Thomas Kellahin

WTK/tic Enclosure

cc: Tom Lowry, Esq.

Marathon Oil Company Post Office Box 552 Midland, Texas 79702 David R. Catanach April 1, 1991 Page 2

> William F. Carr, Esq. Campbell & Black, P.A. Post Office Box 2208 Santa Fe, New Mexico 87504-2208 Attorney for ARCO Oil & Gas Company

889/ltrt401.092

#### STATE OF NEW MEXICO

# ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING;

CASE NO. 10269 ORDER NO. R-

APPLICATION OF MARATHON OIL COMPANY FOR A WATERFLOOD PROJECT AND TWELVE UNORTHODOX INJECTION WELL LOCATIONS, LEA COUNTY, NEW MEXICO.

### MARATHON'S PROPOSED ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on

March 21, 1991 and April 18, 1991, at Santa Fe, New

Mexico, before Examiner Michael E. Stogner and Examiner

David R. Catanach, respectively.

NOW, on this \_\_\_\_ day of April, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Marathon Oil Company, seeks authority to institute a waterflood project on its McDonald State A/C 1 Lease underlying the E/2, SE/4NW/4 and SW/4 of Section 16, and W/2 of Section 15, Township 22 South Range 36 East, N.M.P.M., Lea County, New Mexico, by injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from approximately 3500 feet to 3850 feet in twelve injection wells, each to be drilled at unorthodox locations all as identified on Exhibit "A" to this order.
- (3) The wells in the project area are in an advanced stage of depletion and should properly be classified as "stripper" wells.
- (4) The proposed waterflood project is estimated to have the potential to recover 1.44 million barrels

of additional oil which might not otherwise be recovered in the absence of a waterflood project.

- (5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.
- (6) While the applicant applied for authority to inject water under pressure in excess of the NMOCD guideline of 0.2 psi per foot of depth, at the hearing the applicant withdrew that request.
- (7) The operator should take all steps necessary to ensure that the injected water enters only 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.
- (8) Prior to commencing the injection of water into waterflood injection wells Nos. 37 or 43, the operator shall obtain a lease line injection agreement with the offset operators for the W/2NW/4 of said Section 16 and submit a copy of the agreement to the Division.

- will be the South Eunice Seven Rivers-Queen Pool, the vertical limits of which extends from 100 feet above the top of the Queen to the top of the Grayburg formation, except that waterflood injection well Nos. 33, 34 and 40 should not inject water into the Seven-Rivers formation of the pool at this time. This vertical interval is identified in the Marathon McDonald State A/C No. 29 well located in Unit I, Section 16, T22S, R36E, with the top of the Queen at 3695 feet and the top of the Grayburg at 3866 feet, respectively.
- (10) The McDonald State WN No. 15 and No. 23 wells are two producing Jalmat gas wells located in Unit L and Unit C, respectively, of Section 15 currently operated by ARCO.
- (11) The base of the Jalmat Gas Pool corresponds to the top of the South Eunice Seven Rivers-Queen Pool.
- (12) To help ensure that water injection from the proposed waterflood project does not adversely affect these Jalmat gas wells, the injection well Nos. 33, 34

and 40 should be subject to the following special provisions:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) any hydraulic fracture treatment for these wells shall be tagged with radioactive tracer material and logged immediately after the fracture treatment to ensure that the fracture treatment and subsequent water injection are contained in the Queen formation;
- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that

injection is being maintained within the top of the Oueen formation;

- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16, and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching Arco's No. 15 and No. 23 Jalmat gas wells;
- (g) If the results of any survey or test performed on these injection wells show that the limitations of items 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.
- (13) Applicant submitted data on the proposed injection wells, water wells in the area, and all wells (including plugged wells) which penetrate the zone of interest within 1/2 mile of each of the proposed injection wells. This data shows that wells in the

area are cased and plugged so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.

- (14) With the adoption of the special provisions of Paragraph (12) above, the proposed waterflood injection interval is adequately isolated from any hydrocarbon productive formation above or below that interval and is further isolated from any potential fresh water sources.
- (15) The injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, but the Division Director should have the authority to increase said pressure limitation, should circumstances warrant.
- (16) The Operator should give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the

installation of the injection equipment in order that the same may be witnessed.

- (17) The injection wells are to be newly drilled wells at unorthodox well locations approximately equal distances from offsetting producing wells in order to develop an effective and efficient well pattern. In order to accomplish this pattern, it is necessary to approve the unorthodox location of these injection wells as described on Exhibit A of this order.
- (18) The subject application should be approved and the project should be governed by the provision of Rules 701 through 708 of the Division Rules and Regulations and the special provisions of this order.

#### IT IS THEREFORE ORDERED THAT:

(1) The applicant, Marathon Oil Company, is hereby authorized to institute a waterflood project on its McDonald State A/C l Lease, comprising the E/2, SE/4NW/4 and SW/4 of Section 16 and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico by the injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from

approximately 3500 feet to 3850 feet in each of the injection wells shown on Exhibit "A" to this order, EXCEPT that the water injected into injection wells Nos. 33, 34 and 40 shall be confined to not exceed the top of the Queen formation pending further order of the Division.

PROVIDED HOWEVER THAT, prior to commencing injection operations in Injection wells Nos. 33, 34, or 40, the following special provision shall apply:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I, Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) hydraulic fracture treatments shall be allowed for these three injection wells only if the treatments are tagged with radioactive tracer material and the wells logged immediately after the fracture treatment to ensure that the fracture treatment and

subsequent water injection are contained in the Queen formation;

- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Queen formation;
- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16 and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching Arco's No. 13 and No. 23 Jalmat gas wells;
- (g) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraphs 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice

and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.

#### PROVIDED FURTHER THAT:

- (1) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraph 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.
- (2) The injection wells herein authorized and/or injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such higher pressure will not result in the extension of fractures outside the top of the pool or jeopardize the Jalmat gas production in the W/2 of Section 15.

- (3) The Operator shall give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of the injection equipment in order that the same may be witnessed.
- (4) The unorthodox injection well locations are approved as described on Exhibit "A" of this order.
- (5) Injection into said injection wells shall be through 2-7/8 inch internally coated tubing, set in a packer which shall be located within 100 feet of the top perforations, but no higher than the top of the pool with the exception of injection well Nos. 33, 34 and 40 which shall have packers located within 100 feet of the top perforations, but no higher than the top of the Queen formation; the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.
- (6) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any 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 timely steps as may be necessary or required to correct such failure or leakage.

- (7) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.
- (8) The subject waterflood is hereby designated the Marathon McDonald State A/C Lease Waterflood and shall be governed by the provisions of this order and the provisions of Rules 701 through 708 of the Division Rules and Regulations.
- (9) Jurisdiction of this cause is retained for the entry of further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY Director

SEAL

889/ordt401.092

#### KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW

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CANDACE HAMANN CALLAHAN

JASON KELLAHIN OF COUNSEL

KAREN AUBREY

W. THOMAS KELLAHIN

SANTA FE, NEW MEXICO 87504-2265

April 1, 1991

Mr. David R. Catanach Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87504

Re: Marathon Oil Company
NMOCD Case No. 19269
Application for Approval of
the McDonald State Waterflood
Project

Dear Mr. Catanach:

Please find enclosed our proposed order for entry in the referenced case. It was heard before Examiner Stogner on March 21, 1991 and continued to the April 18, 1991 docket to recorrect the advertisement.

I have enclosed the order for your review in the hope that we could have it entered immediately following the hearing on April 18, 1991.

Very

Please call me if you have any questions.

W. Thomas Kellahin

WTK/tic Enclosure

cc: Tom Lowry, Esq.

Marathon Oil Company
Post Office Box 552
Midland, Texas 79702

David R. Catanach April 1, 1991 Page 2

> William F. Carr, Esq. Campbell & Black, P.A. Post Office Box 2208 Santa Fe, New Mexico 87504-2208 Attorney for ARCO Oil & Gas Company

889/ltrt401.092

#### STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING;

CASE NO. 10269 ORDER NO. R-

APPLICATION OF MARATHON OIL COMPANY FOR A WATERFLOOD PROJECT AND TWELVE UNORTHODOX INJECTION WELL LOCATIONS, LEA COUNTY, NEW MEXICO.

## MARATHON'S PROPOSED ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on

March 21, 1991 and April 18, 1991, at Santa Fe, New

Mexico, before Examiner Michael E. Stogner and Examiner

David R. Catanach, respectively.

NOW, on this \_\_\_\_ day of April, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Marathon Oil Company, seeks authority to institute a waterflood project on its McDonald State A/C 1 Lease underlying the E/2, SE/4NW/4 and SW/4 of Section 16, and W/2 of Section 15, Township 22 South Range 36 East, N.M.P.M., Lea County, New Mexico, by injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from approximately 3500 feet to 3850 feet in twelve injection wells, each to be drilled at unorthodox locations all as identified on Exhibit "A" to this order.
- (3) The wells in the project area are in an advanced stage of depletion and should properly be classified as "stripper" wells.
- (4) The proposed waterflood project is estimated to have the potential to recover 1.44 million barrels

of additional oil which might not otherwise be recovered in the absence of a waterflood project.

- (5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.
- (6) While the applicant applied for authority to inject water under pressure in excess of the NMOCD guideline of 0.2 psi per foot of depth, at the hearing the applicant withdrew that request.
- (7) The operator should take all steps necessary to ensure that the injected water enters only 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.
- (8) Prior to commencing the injection of water into waterflood injection wells Nos. 37 or 43, the operator shall obtain a lease line injection agreement with the offset operators for the W/2NW/4 of said Section 16 and submit a copy of the agreement to the Division.

- (9) The proposed waterflood injection interval will be the South Eunice Seven Rivers-Queen Pool, the vertical limits of which extends from 100 feet above the top of the Queen to the top of the Grayburg formation, except that waterflood injection well Nos. 33, 34 and 40 should not inject water into the Seven-Rivers formation of the pool at this time. This vertical interval is identified in the Marathon McDonald State A/C No. 29 well located in Unit I, Section 16, T22S, R36E, with the top of the Queen at 3695 feet and the top of the Grayburg at 3866 feet, respectively.
- (10) The McDonald State WN No. 15 and No. 23 wells are two producing Jalmat gas wells located in Unit L and Unit C, respectively, of Section 15 currently operated by ARCO.
- (11) The base of the Jalmat Gas Pool corresponds to the top of the South Eunice Seven Rivers-Queen Pool.
- (12) To help ensure that water injection from the proposed waterflood project does not adversely affect these Jalmat gas wells, the injection well Nos. 33, 34

and 40 should be subject to the following special provisions:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) any hydraulic fracture treatment for these wells shall be tagged with radioactive tracer material and logged immediately after the fracture treatment to ensure that the fracture treatment and subsequent water injection are contained in the Queen formation;
- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that

injection is being maintained within the top of the Queen formation;

- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16, and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching Arco's No. 15 and No. 23 Jalmat gas wells;
- performed on these injection wells show that the limitations of items 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.
- (13) Applicant submitted data on the proposed injection wells, water wells in the area, and all wells (including plugged wells) which penetrate the zone of interest within 1/2 mile of each of the proposed injection wells. This data shows that wells in the

area are cased and plugged so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.

- (14) With the adoption of the special provisions of Paragraph (12) above, the proposed waterflood injection interval is adequately isolated from any hydrocarbon productive formation above or below that interval and is further isolated from any potential fresh water sources.
- (15) The injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, but the Division Director should have the authority to increase said pressure limitation, should circumstances warrant.
- (16) The Operator should give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the

installation of the injection equipment in order that the same may be witnessed.

- (17) The injection wells are to be newly drilled wells at unorthodox well locations approximately equal distances from offsetting producing wells in order to develop an effective and efficient well pattern. In order to accomplish this pattern, it is necessary to approve the unorthodox location of these injection wells as described on Exhibit A of this order.
- (18) The subject application should be approved and the project should be governed by the provision of Rules 701 through 708 of the Division Rules and Regulations and the special provisions of this order.

#### IT IS THEREFORE ORDERED THAT:

(1) The applicant, Marathon Oil Company, is hereby authorized to institute a waterflood project on its McDonald State A/C 1 Lease, comprising the E/2, SE/4NW/4 and SW/4 of Section 16 and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico by the injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from

approximately 3500 feet to 3850 feet in each of the injection wells shown on Exhibit "A" to this order, EXCEPT that the water injected into injection wells Nos. 33, 34 and 40 shall be confined to not exceed the top of the Queen formation pending further order of the Division.

PROVIDED HOWEVER THAT, prior to commencing injection operations in Injection wells Nos. 33, 34, or 40, the following special provision shall apply:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I, Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) hydraulic fracture treatments shall be allowed for these three injection wells only if the treatments are tagged with radioactive tracer material and the wells logged immediately after the fracture treatment to ensure that the fracture treatment and

subsequent water injection are contained in the Queen formation;

- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Oueen formation;
- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16 and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching Arco's No. 13 and No. 23 Jalmat gas wells;
- (g) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraphs 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice

and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.

#### PROVIDED FURTHER THAT:

- (1) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraph 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat gas wells.
- (2) The injection wells herein authorized and/or injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such higher pressure will not result in the extension of fractures outside the top of the pool or jeopardize the Jalmat gas production in the W/2 of Section 15.

- (3) The Operator shall give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of the injection equipment in order that the same may be witnessed.
- (4) The unorthodox injection well locations are approved as described on Exhibit "A" of this order.
- (5) Injection into said injection wells shall be through 2-7/8 inch internally coated tubing, set in a packer which shall be located within 100 feet of the top perforations, but no higher than the top of the pool with the exception of injection well Nos. 33, 34 and 40 which shall have packers located within 100 feet of the top perforations, but no higher than the top of the Queen formation; the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.
- (6) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any 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 timely steps as may be necessary or required to correct such failure or leakage.

- (7) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.
- (8) The subject waterflood is hereby designated the Marathon McDonald State A/C Lease Waterflood and shall be governed by the provisions of this order and the provisions of Rules 701 through 708 of the Division Rules and Regulations.
- (9) Jurisdiction of this cause is retained for the entry of further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY Director

SEAL

889/ordt401.092

### KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW

EL PATIO BUILDING 117 NORTH GUADALUPE

POST OFFICE BOX 2265 SANTA FE, NEW MEXICO 87504-2265 TELEPHONE (505) 982-4285 TELEFAX (505) 982-2047

JASON KELLAHIN

W. THOMAS KELLAHIN

CANDACE HAMANN CALLAHAN

KAREN AUBREY

OF COUNSEL

April 18, 1991

Mr. Jim Morrow Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87504

RECEIVED

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HAND DELIVERED

QIL CONSERVATION DIVISION

Marathon Oil Company Re: NMOCD Case No. 19269

> Application for Approval of the McDonald State Waterflood

Project

Dear Mr. Morrow:

Please find enclosed Marathon's proposed order for entry in the referenced case which incorporates ARCO and Doyle Hartman's stipulations.

Please call me if you have any questions.

Thomas Kellahin

Very truly yours

WTK/tic Enclosure

Tom Lowry, Esq. cc: William F. Carr, Esq. Joanne Reuter, Esq.

889/ltrt418.092

#### STATE OF NEW MEXICO

## ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

#CEIVED

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING;

OIL CONSERVATION DIVISION

CASE NO. 10269 ORDER NO. R-

APPLICATION OF MARATHON OIL COMPANY FOR A WATERFLOOD PROJECT AND TWELVE UNORTHODOX INJECTION WELL LOCATIONS, LEA COUNTY, NEW MEXICO.

## MARATHON'S PROPOSED ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on

March 21, 1991 and April 18, 1991, at Santa Fe, New

Mexico, before Examiner Michael E. Stogner and Examiner

David R. Catanach, respectively.

NOW, on this \_\_\_\_ day of April, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Marathon Oil Company, seeks authority to institute a waterflood project on its McDonald State A/C 1 Lease underlying the E/2, SE/4NW/4 and SW/4 of Section 16, and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico, by injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from approximately 3500 feet to 3850 feet in twelve injection wells, each to be drilled at unorthodox locations all as identified on Exhibit "A" to this order.
- (3) The wells in the project area are in an advanced stage of depletion and should properly be classified as "stripper" wells.
- (4) The proposed waterflood project is estimated to have the potential to recover 1.44 million barrels of additional oil which might not otherwise be recovered in the absence of a waterflood project.

- (5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.
- (6) While the applicant applied for authority to inject water under pressure in excess of the NMOCD guideline of 0.2 psi per foot of depth, at the hearing the applicant withdrew that request.
- (7) The operator should take all steps necessary to ensure that the injected water enters only 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.
- (8) Prior to commencing the injection of water into waterflood injection well Nos. 37 or 43, the operator shall obtain a lease line injection agreement with the offset operators for the W/2NW/4 of said Section 16 and submit a copy of the agreement to the Division.
- (9) The proposed waterflood injection interval will be the South Eunice Seven Rivers-Queen Pool, the vertical limits of which extends from 100 feet above

the top of the Queen to the top of the Grayburg formation, except that waterflood injection well Nos. 33, 34 and 40 should not inject water into the Seven-Rivers formation of the pool at this time. This vertical interval is identified in the Marathon McDonald State A/C No. 29 well located in Unit I, Section 16, T22S, R36E, with the top of the Queen at 3695 feet and the top of the Grayburg at 3866 feet, respectively.

- (10) The McDonald State WN No. 15 and No. 23 wells are two producing Jalmat Gas wells located in Unit L and Unit C, respectively, of Section 15 currently operated by ARCO.
- (11) In addition, Doyle Hartman currently operates three existing Jalmat Gas wells: the Boren-Greer Gas Com Wells Nos. 1, 2, and 3 in Unit D and C of Section 21 and in Unit A of Section 20, T22S, R36E, N.M.P.M., respectively.
- (12) The base of the Jalmat Gas Pool corresponds to the top of the South Eunice Seven Rivers-Queen Pool.

- (12) To help ensure that water injection from the proposed waterflood project does not adversely affect these Jalmat Gas wells, the injection wells Nos. 7, 8, 30, 31, 33, 34, 40 and 47 should be subject to the following special provisions:
- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) any hydraulic fracture treatment for these wells shall be tagged with radioactive tracer material and logged immediately after the fracture treatment to ensure that the fracture treatment and subsequent water injection are contained in the Queen formation;
- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;

- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Oueen formation;
- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16, and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching ARCO's No. 15 and No. 23 Jalmat Gas wells;
- (g) Marathon shall not commingle production in the producing wells of its McDonald State A/C No. 1 lease, South Eunice Oil Pool waterflood, with gas production from the Jalmat Gas Pool;
- (h) Marathon shall make a concerted effort not to flood/water out any gas bearing zones in the lower 100 feet of the Seven Rivers formation of the Eunice South Pool and in the event Marathon desires to flood the lower 100 feet of the Seven Rivers formation, sufficient data as to residual oil saturation will be

gathered to make certain such interval is not predominantly gas bearing;

- (i) Marathon reserves the right to apply to the New Mexico Oil Conservation Division at a later date for approval to inject water into the Seven Rivers formation in the injection wells described above.
- (j) If the results of any survey or test performed on these injection wells show that the limitations of items 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat Gas wells or any of the Hartman Jalmat Gas wells described above.
- (13) Applicant submitted data on the proposed injection wells, water wells in the area, and all wells (including plugged wells) which penetrate the zone of interest within 1/2 mile of each of the proposed injection wells. This data shows that wells in the area are cased and plugged so as to protect fresh water

and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.

- (14) With the adoption of the special provisions of Paragraph (12) above, the proposed waterflood injection interval is adequately isolated from any hydrocarbon productive formation above or below that interval and is further isolated from any potential fresh water sources.
- (15) The injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, but the Division Director should have the authority to increase said pressure limitation, should circumstances warrant.
- (16) The Operator should give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the

installation of the injection equipment in order that the same may be witnessed.

- (17) The injection wells are to be newly drilled wells at unorthodox well locations approximately equal distances from offsetting producing wells in order to develop an effective and efficient well pattern. In order to accomplish this pattern, it is necessary to approve the unorthodox location of these injection wells as described on Exhibit A of this order.
- (18) The subject application should be approved and the project should be governed by the provision of Rules 701 through 708 of the Division Rules and Regulations and the special provisions of this order.

#### IT IS THEREFORE ORDERED THAT:

(1) The applicant, Marathon Oil Company, is hereby authorized to institute a waterflood project on its McDonald State A/C 1 Lease, comprising the E/2, SE/4NW/4 and SW/4 of Section 16 and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico by the injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from

approximately 3500 feet to 3850 feet in each of the injection wells shown on Exhibit "A" to this order, EXCEPT that the water injected into injection wells Nos. 33, 34 and 40 shall be confined to not exceed the top of the Queen formation pending further order of the Division.

PROVIDED HOWEVER THAT, prior to commencing injection operations in Injection wells Nos. 33, 34, or 40, the following special provision shall apply:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald AC 1 No. 29 well, located Unit I, Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) hydraulic fracture treatments shall be allowed for these three injection wells only if the treatments are tagged with radioactive tracer material and the wells logged immediately after the fracture treatment to ensure that the fracture treatment and

subsequent water injection are contained in the Queen formation;

- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Oueen formation;
- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16 and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching ARCO's No. 13 and No. 23 Jalmat Gas wells;
- (g) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraphs 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice

and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat Gas wells.

#### PROVIDED FURTHER THAT:

- (1) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraph 12(a) through 12(f) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat Gas wells.
- (2) The injection wells herein authorized and/or injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such higher pressure will not result in the extension of fractures outside the top of the pool or jeopardize the Jalmat Gas production in the W/2 of Section 15.

- (3) The Operator shall give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of the injection equipment in order that the same may be witnessed.
- (4) The unorthodox injection well locations are approved as described on Exhibit "A" of this order.
- (5) Injection into said injection wells shall be through 2-7/8 inch internally coated tubing, set in a packer which shall be located within 100 feet of the top perforations, but no higher than the top of the pool with the exception of injection well Nos. 33, 34 and 40 which shall have packers located within 100 feet of the top perforations, but no higher than the top of the Queen formation; the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.
- (6) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any 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 timely steps as may be necessary or required to correct such failure or leakage.

- (7) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.
- (8) The subject waterflood is hereby designated the Marathon McDonald State A/C Lease Waterflood and shall be governed by the provisions of this order and the provisions of Rules 701 through 708 of the Division Rules and Regulations.
- (9) Jurisdiction of this cause is retained for the entry of further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY Director

SEAL

889/ordt417.092

#### KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW

EL PATIO BUILDING

W. THOMAS KELLAHIN KAREN AUBREY

117 NORTH GUADALUPE POST OFFICE BOX 2265 TELEPHONE (505) 982-4285 TELEFAX (505) 982-2047

CANDACE HAMANN CALLAHAN

JASON KELLAHIN OF COUNSEL

SANTA FE, NEW MEXICO 87504-2265

April 24, 1991

Mr. Jim Morrow Oil Conservation Division State Land Office Santa Fe, New Mexico 87501

#### HAND DELIVERED

Marathon Oil Company Re:

NMOCD Case No. 10269

Application for Approval of the McDonald State Waterflood

Project

Dear Mr. Morrow:

On April 18, 1991, we submitted to you a draft order which attempted to integrate the issues raised by Mr. Hartman at the April 18, 1991 hearing. Unfortunately our effort was incomplete. Accordingly, please find enclosed a replacement order which corrects our oversights. We apologize for any inconvenience.

Very truly yours,

Thomas Kellahin

WTK/tic Enclosure

cc: Tom Lowry, Esq.

William F. Carr, Esq. Joanne Rueter, Esq.

1989/ltrt424.092

#### STATE OF NEW MEXICO

# ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING;

CASE NO. 10269 ORDER NO. R-

APPLICATION OF MARATHON OIL COMPANY FOR A WATERFLOOD PROJECT AND TWELVE UNORTHODOX INJECTION WELL LOCATIONS, LEA COUNTY, NEW MEXICO.

## MARATHON'S PROPOSED ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 21, 1991 and April 18, 1991, at Santa Fe, New Mexico, before Examiner Michael E. Stogner and Examiner David R. Catanach, respectively.

NOW, on this \_\_\_\_ day of April, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS THAT:

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

- (2) The applicant, Marathon Oil Company, seeks authority to institute a waterflood project on its McDonald State A/C 1 Lease underlying the E/2, SE/4NW/4 and SW/4 of Section 16, and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico, by injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from approximately 3500 feet to 3850 feet in twelve injection wells, each to be drilled at unorthodox locations all as identified on Exhibit "A" to this order.
- (3) The wells in the project area are in an advanced stage of depletion and should properly be classified as "stripper" wells.
- (4) The proposed waterflood project is estimated to have the potential to recover 1.44 million barrels of additional oil which might not otherwise be recovered in the absence of a waterflood project.
- (5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.
- (6) While the applicant applied for authority to inject water under pressure in excess of the NMOCD guideline of 0.2 psi per foot of depth, at the hearing the applicant withdrew that request.
- (7) The operator should take all steps necessary to ensure that the injected water enters only 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.

- (8) Prior to commencing the injection of water into waterflood injection well Nos. 37 or 43, the operator shall obtain a lease line injection agreement with the offset operators for the W/2NW/4 of said Section 16 and submit a copy of the agreement to the Division.
- (9) The proposed waterflood injection interval will be the South Eunice Seven Rivers-Queen Pool, the vertical limits of which extends from 100 feet above the top of the Queen to the top of the Grayburg formation, except that waterflood injection well Nos. 30, 31, 33, 34 and 40 should not inject water into the Seven-Rivers formation of the pool at this time. This vertical interval is identified in the Marathon McDonald State A/C No. 29 well located in Unit I, Section 16, T22S, R36E, with the top of the Queen at 3695 feet and the top of the Grayburg at 3866 feet, respectively.
- (10) The McDonald State WN No. 15 and No. 23 wells are two producing Jalmat Gas wells located in Unit L and Unit C, respectively, of Section 15 currently operated by ARCO.
- (11) In addition, Doyle Hartman currently operates three existing Jalmat Gas wells: the Boren-Greer Gas Com Wells Nos. 1, 2, and 3 in Unit D and C of Section 21 and in Unit A of Section 20, T22S, R36E, N.M.P.M., respectively.
- (12) The base of the Jalmat Gas Pool corresponds to the top of the South Eunice Seven Rivers-Queen Pool.

- (13) To help ensure that water injection from the proposed waterflood project does not adversely affect these Jalmat Gas wells, the injection wells Nos. 30, 31, 33, 34 and 40 should be subject to the following special provisions:
- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald A/C 1 No. 29 well, located in Unit I of said Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77 and as defined in the Marathon McDonald A/C 1 No. 8 well, located in Unit M of said Section 16, at a depth of 3618 feet RKB on the Apollo Perforators Inc Dual Spaced Compensated Neutron/GR/CCl Log dated 9/19/90;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;
- (c) any hydraulic fracture treatment for these wells shall be tagged with radioactive tracer material and logged immediately after the fracture treatment to ensure that the fracture treatment and subsequent water injection are contained in the Queen formation:
- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Queen formation;

- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16, and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching ARCO's No. 15 and No. 23 Jalmat Gas wells:
- (g) Marathon shall not commingle production in the producing wells of its McDonald State A/C No. 1 lease, South Eunice Oil Pool waterflood, with gas production from the Jalmat Gas Pool;
- (h) Marathon shall make a concerted effort not to flood/water out any gas bearing zones in the lower 100 feet of the Seven Rivers formation of the Eunice South Pool and in the event Marathon desires to flood the lower 100 feet of the Seven Rivers formation, sufficient data as to residual oil saturation will be gathered to make certain such interval is not predominantly gas bearing;
- (i) Marathon reserves the right to apply to the New Mexico Oil Conservation Division at a later date for approval to inject water into the Seven Rivers formation in the injection wells described above.
- (14) If the results of any survey or test performed on these injection wells show that the limitations of items 13(a) through 13(h) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat Gas wells or any of the Hartman Jalmat Gas wells described above.

- (15) Applicant submitted data on the proposed injection wells, water wells in the area, and all wells (including plugged wells) which penetrate the zone of interest within 1/2 mile of each of the proposed injection wells. This data shows that wells in the area are cased and plugged so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.
- (16) With the adoption of the special provisions of Paragraph (13) above, the proposed waterflood injection interval is adequately isolated from any hydrocarbon productive formation above or below that interval and is further isolated from any potential fresh water sources.
- (17) The injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, but the Division Director should have the authority to increase said pressure limitation, should circumstances warrant.
- (18) The Operator should give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of the injection equipment in order that the same may be witnessed.
- (19) The injection wells are to be newly drilled wells at unorthodox well locations approximately equal distances from offsetting producing wells in order to develop an effective and efficient well pattern. In order to accomplish this pattern, it is necessary to approve the unorthodox location of these injection wells as described on Exhibit A of this order.

(20) The subject application should be approved and the project should be governed by the provision of Rules 701 through 708 of the Division Rules and Regulations and the special provisions of this order.

#### IT IS THEREFORE ORDERED THAT:

(1) The applicant, Marathon Oil Company, is hereby authorized to institute a waterflood project on its McDonald State A/C 1 Lease, comprising the E/2, SE/4NW/4 and SW/4 of Section 16 and W/2 of Section 15, T22S, R36E, N.M.P.M., Lea County, New Mexico by the injection of water into the South Eunice Seven Rivers-Queen Pool, through the perforated interval from approximately 3500 feet to 3850 feet in each of the injection wells shown on Exhibit "A" to this order, EXCEPT that the water injected into injection wells Nos. 30, 31, 33, 34 and 40 shall be confined to not exceed the top of the Queen formation pending further order of the Division.

PROVIDED HOWEVER THAT, prior to commencing injection operations in injection wells Nos. 30, 31, 33, 34, or 40, the following special provision shall apply:

- (a) the upper vertical limit of injection shall be the top of the Queen formation, as defined in the Marathon McDonald State A/C 1 No. 29 well, located Unit I, Section 16, at a depth of 3695 feet RKB on the Dresser Atlas Compensated Neutron/Densilog dated 3/27/77 and as defined in the Marathon McDonald State A/C 1 Well No. 8, located in Unit M of said Section 16, at a depth of 3618 feet RKB on Apollo Perforators Inc. Dual Spaced Compensated Neutron/GR/CCL Log dated 9/19/90;
- (b) the maximum injection pressure shall be below the breakdown pressure of the Queen formation;

- (c) hydraulic fracture treatments shall be allowed for these five injection wells only if the treatments are tagged with radioactive tracer material and the wells logged immediately after the fracture treatment to ensure that the fracture treatment and subsequent water injection are contained in the Queen formation:
- (d) the operator shall obtain cement bond logs to verify the integrity across the Jalmat, Queen and Seven Rivers formations in these injection wells;
- (e) the operator shall obtain initial injectivity surveys for these wells to verify that injection is being maintained within the top of the Queen formation;
- (f) the potential pay zones in the Seven Rivers and Queen formations in the Marathon producing well Nos. 4, 29 and 46 in Section 16 and Nos. 3 and 4 in Section 15 shall be opened to help prevent injection water reaching ARCO's No. 13 and No. 23 Jalmat Gas wells;
- (g) Marathon shall not commingle production in the producing wells of its McDonald State A/C No 1 lease, South Eunice Oil Pool waterflood, with gas production from the Jalmat Gas Pool;
- (h) Marathon shall make a concerted effort not to flood/water out any gas bearing zones in the lower 100 feet of the Seven Rivers formation of the South Eunice Oil Pool and in the event Marathon desires to flood the lower 100 feet of the Seven Rivers formation, sufficient data as to residual oil saturation will be gathered to make certain such interval is not predominantly gas bearing;

(2) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraphs 1(a) through 1(h) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize any of the Hartman or ARCO Jalmat Gas wells.

#### PROVIDED FURTHER THAT:

- (3) If the results of any survey or test performed on these injection wells show that the limitations of ordering Paragraph 1(a) through 1(h) are not being met, Marathon shall not commence or continue injection into the well or wells involved pending a determination by the Division, after notice and hearing, whether the failure to meet the limitation will jeopardize either of the ARCO Jalmat Gas wells.
- (4) The injection wells herein authorized and/or injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 700 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such higher pressure will not result in the extension of fractures outside the top of the pool or jeopardize the Jalmat Gas production in the W/2 of Section 15.
- (5) The Operator shall give advanced notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of the injection equipment in order that the same may be witnessed.
- (6) The unorthodox injection well locations are approved as described on Exhibit "A" of this order.

- (7) Injection into said injection wells shall be through 2-7/8 inch internally coated tubing, set in a packer which shall be located within 100 feet of the top perforations, and the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.
- (8) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any 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 timely steps as may be necessary or required to correct such failure or leakage.
- (9) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.
- (10) The subject waterflood is hereby designated the Marathon McDonald State A/C Lease Waterflood and shall be governed by the provisions of this order and the provisions of Rules 701 through 708 of the Division Rules and Regulations.
- (11) Jurisdiction of this cause is retained for the entry of further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY Director

SEAL

889/ordt417.092

### GALLEGOS LAW FIRM

A Professional Corporation

141 East Palace Avenue Santa Fe, New Mexico 87501 Telephone No. 505 • 983 • 6686 Telefax No. 505 • 986 • 0741

May 1, 1991

JOANNE REUTER

#### **HAND DELIVERED**

Mr. Jim Morrow
Oil Conservation Division
State Land Office
Santa Fe, New Mexico 87501

OIL CONSERVATION DIVISION

RE: Marathon Oil Company, NMOCD Case No. 10269

Application for Approval of the McDonald State Waterflood Project

Dear Mr. Morrow:

By letter dated April 24, 1991, Marathon Oil Company had hand-delivered to you Marathon's proposed order in the above case, attempting to integrate the stipulation between Doyle Hartman and Marathon that was entered in the record on April 18, 1991.

Please be advised that Doyle Hartman objects to Marathon's proposed order. Attached please find Mr. Hartman's objections.

We hope that these objections do not cause the Examiner any inconvenience. Counsel for Mr. Hartman was under the apparently mistaken impression that Marathon would provide its proposed order to Mr. Hartman for approval prior to submission to the Examiner so that an agreed order could be entered. This did not occur. In addition, although Marathon's proposed order was hand delivered to the Division on April 24, 1991, it was not received at the Gallegos Law Firm until April 29, 1991.

Thank you for your consideration in this matter.

Sincerely,

GALLEGOS LAW FIRM

OKNNE REUTER

JR:ap

cc: W. Thomas Kellahin William F. Carr Michael Stogner