MURPHY OPERATING CORPORATION
UNITED BANK PLAZA, SUITE 300
400 NORTH PENNSYLVANIA AVENUE
POST OFFICE BOX 2648
ROSWELL, NEW MEXICO 88202-2648

TELEPHONE
505 623-7210

August 18, 1988

VIA FEDERAL EXPRESS

Mr. Floyd O. Prando
Director, Oil & Gas Division
State of New Mexico
Commissioner of Public Lands
Post Office Box 1148
Santa Fe, New Mexico 87504-1148

Mr. William J. LeMay, Director
State of New Mexico
Energy and Minerals Department
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504-2088

Re: PLAN OF OPERATION 1988-1989
Proposed Haley Chaveroo San Andres Unit
Chaveroo San Andres Field
Chaves & Roosevelt Counties, New Mexico

Gentlemen:

Pursuant to the provisions of Section 11A. of the Unit Agreement, Murphy Operating Corporation ("MOC"), designated Unit Operator of the proposed Haley Chaveroo San Andres Unit, Chaves and Roosevelt Counties, New Mexico, respectfully submits for your consideration and approval, this Plan of Operation for the secondary recovery of oil by waterflood on the subject unitized land.

I. Proposed Plan of Operation 1988-1989: MOC hereby proposes that the Haley Chaveroo San Andres Unit ("the Unit"), consisting of 1,840.70 acres, as more particularly delineated on the map contained in Exhibit 1 attached hereto, be formed for the purpose of secondary recovery by the waterflood method. This proposed Unit currently consists of a total of forty-four (44) wells (forty (40) producing wells, two (2) salt water disposal wells, and two (2) plugged and abandoned wells). Ultimately, it is planned that the Unit will consist of forty-six (46) wells (twenty-three (23) injection wells, twenty-one (21) producing wells, and two (2) plugged and abandoned wells). The current and corresponding proposed status of each well is listed in Table I below:

TABLE I

Proposed Unit Well No.	Original Operator	Lease Name	Well No.	Current Well Status*	Proposed Well Status*	Remarks
33-01	Texaco	Hobbs "T"	6	PRD	PRD	
33-02	Texaco	Hobbs "U"	2	PRD	INJ	
33-03	Sun Op.	State "AZ"	3	PRD	PRD	
33-04	Sun Op.	State "AZ"	5	SWD	INJ	
33-05	Sun Op.	State "AZ"	1	PRD	PRD	
33-06	Texaco	Hobbs "T"	1	PRD	INJ	
33-07	Texaco	Hobbs "U"	1	PRD	PRD	
33-08	Texaco	Hobbs "T"	5	PRD	INJ	
33-09	Sun Op.	State "AZ"	7	PRD	PRD	
33-10	Texaco	Hobbs "T"	3	PRD	INJ	
33-11	Sun Op.	State "AZ"	2	PRD	PRD	
33-12	Texaco	Hobbs "T"	2	PRD	INJ	
33-13	Sun Op.	State "AZ"	4	PRD	PRD	
33-14	Sun Op.	State "AZ"	6	PRD	INJ	
33-15	Texaco	Hobbs "T"	4	PRD	PRD	
33-16	Texaco	Hobbs "T"	11Y	SWD	INJ	
34-01	Sun Op.	State "AZ"	13	PRD	PRD	
34-02	Sun Op.	State "AZ"	12	PRD	INJ	
34-03	Sun Op.	State "AZ"	11	PRD	PRD	
34-04	Texaco	Hobbs "T"	9	PRD	INJ	
34-05	Sun Op.	State "AZ"	8	PRD	PRD	
34-06	Sun Op.	State "AZ"	9	PRD	INJ	
34-07	Texaco	Hobbs "T"	10	PRD	PRD	

TABLE I
(Continued)

Proposed Unit Well No.	Original Operator	Lease Name	Well No.	Current Well Status*	Proposed Well Status*	Remarks
34-08	Sun Op.	State "AZ"	14	PRD	INJ	
34-09	Texaco	Hobbs "T"	12	PRD	PRD	
34-10	Texaco	Hobbs "T"	8	PRD	INJ	
34-11	Sun Op.	State "AZ"	10	PRD	PRD	
34-12	Texaco	Hobbs "T"	7	PRD	INJ	
34-13	Sun Op.	State "AZ"	16	PRD	PRD	
34-14	Texaco	Hobbs "T"	13	PRD	INJ	
34-15	Texaco	Hobbs "T"	15	PRD	PRD	
34-16	Sun Op.	State "AZ"	15	PRD	INJ	
03-01	ARCO	State "BF"	1	PRD	PRD	
03-02	ARCO	State "BF"	2	PRD	INJ	
03-03	ARCO	State "BF"	3	PRD	PRD	
03-04	ARCO	State "BF"	5	P&A	INJ	Well to be reentered or redrilled
03-06	ARCO	State "BF"	7	PRD	INJ	
03-07	ARCO	State "BF"	6	PRD	PRD	
03-08	ARCO	State "BF"	4	PRD	INJ	
03-10	ARCO	State "BF"	8	PRD	INJ	
03-11	ARCO	State "BF"	11	PRD	PRD	
03-14	Tierra	Annarco	1	P&A	INJ	Well to be reentered or redrilled
03-15	ARCO	State "BF"	10	PRD	PRD	
03-16	ARCO	State "BF"	9	PRD	INJ	

* Well Status: PRD - Producer
INJ - Injector
SWD - Salt Water Disposal
P&A - Plugged and Abandoned

The conversion to injection of certain wells will be undertaken in three (3) phases as proposed below:

Phase I: Subsequent to Unit approval, MOC will initiate injection by gravity into proposed injection Wells #33-8, #34-6, and #34-14. This proposed injection, together with existing injection into Well #33-16 (SWD), will facilitate a 360-acre nine-spot pattern permitting MOC the opportunity to monitor and observe any preferential fracture trends.

Phase II: Upon completion of the injection plant approximately 45 to 90 days after Unit approval, it is proposed that Well #33-10, #34-10, and #34-12 be converted to injection status. The conversion of these wells will modify the above-described nine-spot pattern to two (2) 80-acre five-spot patterns. It is proposed that Phase II be monitored for 12 to 24 months and, subject to reservoir fill up and response, additional development will be implemented as described in Phase III below.

Phase III: Assuming satisfactory response, Phase III will consist of unit-wide development in five-spot injection patterns. The proposed five-spot patterns will utilize the existing salt water disposal wells, protect lease boundaries and provide for the maximum recovery of secondary oil. This will require the conversion to injection of fourteen (14) wells and the drilling of two (2) additional injectors.

As presented in Exhibit 1 attached, MOC plans to construct a water injection plant in the SE/4SE/4, Section 33, Township 7 South, Range 33 East, to service the Unit area. This plant will be constructed in such a manner to provide approximately 4,200 BBLS of water per day for ample injection capability in Phases I and II of the development program. The plant will provide an ultimate injection capability of approximately 13,800 BBLS of water per day in Phase III of the Unit development. The planned location was chosen because of its proximity to existing roads and electrical service and its central location to the proposed injection wells. wells. A series of individual and trunk injection lines will radiate in a northwesterly, northeasterly, and southeasterly direction to provide injection service to the individual injection wells.

Supplemental water will be purchased from the closest and most economical of several commercial sources which are available in this area. All sources are fresh water from the Ogallala formation which is present at an approximate depth of 200 feet below the surface. This water, combined with the San Andres produced water, has been deemed compatible by chemical analysis (submitted under separate cover and previous experience. A water supply line system will be constructed as shown on Exhibit 1.

II. Operating Guidelines: MOC plans to monitor all injection wells through daily rate and pressure checks. After 90 to 120 days of initiation of injection into any given well, a tracer survey will be run in order to insure acceptable injection profiles and to determine if water channeling is occurring. If water channeling or unacceptable injection profiles are observed, appropriate remedial work will be performed. As wells are converted to injection status, the annuluses of each well will be filled with inert ("packer") fluid containing corrosion inhibiting chemicals. The downhole integrity of each injection well will be determined by "pressuring up" the annulus of each well and maintaining a positive pressure of 300 psig for at least thirty (30) minutes. The procedure for conversion to injection status and all remedial and drilling operations will be performed in strict adherence to the Rules and Regulations of the Oil Conservation Division and other regulatory agencies.

III. Modification: Subject to approval, this Plan of Operation may be modified or supplemented during the year to meet changed conditions and to protect the interests of all parties to the Unit Agreement.

Should you have any questions or comments, please contact the undersigned.

Respectfully submitted,

MURPHY OPERATING CORPORATION

Mark B. Murphy
President and Chief Operating Officer

MBM:dr

Enclosure: Proposed Haley Chaveroo San Andres Unit, "Field Map Indicating Proposed Unit Facilities".

cc: Mr. Jerry E. Sexton
State of New Mexico
Energy and Minerals Department
Oil Conservation Division
Post Office Box 1980
Hobbs, New Mexico 88240-1980