

Case Number
4664

Application

Transcripts

Small Exhibits

E T C.



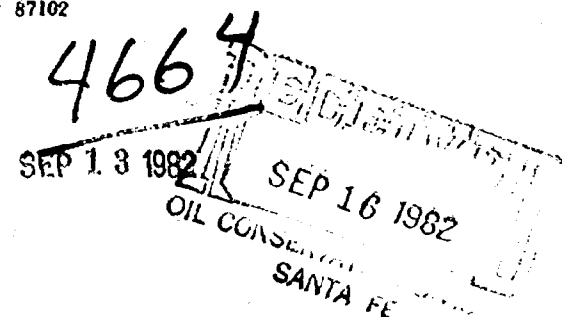
IN REPLY
REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

SOUTH CENTRAL REGION

505 MARQUETTE AVENUE, N.W., SUITE 815
ALBUQUERQUE, NEW MEXICO 87102



Tenneco Oil Company
P. O. Box 3249
Englewood, Colorado 80155

Gentlemen:

The Lone Pine Dakota "D" Unit Agreement, No. 14-08-0001-11596, was approved on March 30, 1972, effective April 1, 1972, for the recovery of oil from the Dakota "D" formation. The term of the unit agreement is for the time that unitized substances are produced in quantities sufficient to repay the cost of producing same from the unitized land, and as long thereafter as drilling, reworking, or other operations are prosecuted thereon without cessation of more than 90 consecutive days, and so long thereafter as unitized substances can be produced.

The last production from the Lone Pine Dakota "D" Unit was May 31, 1980. Our Farmington District office has advised us that all wells within the unit are reported as plugged, but final abandonment of the wells has not yet been approved.

Accordingly, the Lone Pine Dakota "D" Unit Agreement is considered to have terminated on its own terms as of May 31, 1980.

Sincerely yours,

(ORIG. SGD.) GENE F. DANIEL

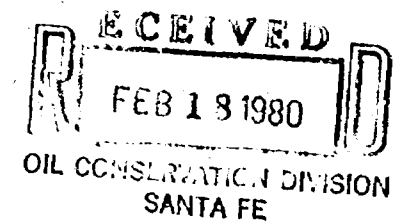
Gene F. Daniel
Deputy Minerals Manager
Oil and Gas

cc:
BLM, Santa Fe
NMOCD, Santa Fe

BEARD OIL COMPANY
SUITE 200, 2000 CLASSEN BUILDING
2000 CLASSEN BOULEVARD
OKLAHOMA CITY, OKLAHOMA 73106
405/528-2323

February 8, 1980

*Case
4664*



Tenneco Oil Company
720 South Colorado Blvd., Penthouse
Denver, CO 80222

Attention: Mr. Steve Hudson

Re: Beard Oil Company #2 Dosh e pi Henio
SE NW Section 17-17N-8W
McKinley County, New Mexico

Gentlemen:

Confirming our telephone conversation today, please be advised that Beard Oil Company has no use for the above referenced well, and hereby gives Tenneco Oil Company, as Operator of the Lone Pine Dakota "D" Unit, permission to plug this well at Unit expense.

Please furnish us with copies of the plugging reports filed with U. S. G. S. and with the State of New Mexico in connection with the plugging of this well.

Yours very truly,

BEARD OIL COMPANY

James W. Vater, Jr.
James W. Vater, Jr.
Vice President

JWVJ:tlg

XC to: U. S. G. S., Farmington, New Mexico
New Mexico Oil Conservation Commission, Santa Fe, New Mexico



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857

Roswell, New Mexico 88201

April 18, 1974

Tenneco Oil Company
Attention: Mr. L. L. Parish
P. O. Box 2410
Denver, Colorado 80201

Gentlemen:

Your application for the first expansion of the Lena Pipe Dakota "D" unit area, McKinley County, New Mexico, No. 14-05-0001-11596, was approved on April 18, 1974, effective as of August 1, 1973. Approval of the expansion increases the unit area from 2,552.30 acres to 2,638.30 acres.

Two approved copies of the application are enclosed. Please furnish the New Mexico Oil Conservation Commission and other interested principals with appropriate evidence of this approval. You are also requested to file a revised Exhibit "B" with this office.

Sincerely yours,

(ORIG. SGD) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Area Oil and Gas Supervisor

cc:
Area Dir., Window Rock (2) (w/3 appr. cert.)
BLM, Santa Fe (w/cy of appr. appln.)
Farmington (w/cy of appr. appln.)
N.M.O.C.C., Santa Fe (ltr. only)✓
Accounts (ltr. only)

REShook:lh

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
MORGAN HALL, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
February 16, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company
for a unit agreement, McKinley
County, New Mexico

CASE NO. 4664

a n d

Application of Tenneco Oil Company
for a pressure maintenance
project, McKinley County, New
Mexico.

CASE NO. 4665

BEFORE: Elvis Utz
Examiner

TRANSCRIPT OF HEARING

1 MR. UTZ: The Hearing will come to order, please.
2 We will consolidate for the purpose of testimony, Cases 4664
3 and 4665.

4 Separate Orders will be written on each Case.

5 MR. HATCH: Case 4664, Application of Tenneco Oil
6 Company for a unit agreement, McKinley County, New Mexico.

7 Case 4664, Application of Tenneco Oil Company for
8 a pressure maintenance project, McKinley County, New Mexico.

9 MR. UTZ: Appearances?

10 MR. KELLY: Booker Kelly, of White Koch, Kelly,
11 and McCarthy of Santa Fe. We have two witnesses and ask
12 that they be sworn.

13 (Whereupon, the Applicant's two witnesses were
14 sworn by Mr. Hatch.)

15 MR. UTZ: Are there any other appearances in this
16 Case?

17 (No response.)

18 MR. UTZ: You may proceed.

19 MR. KELLEY: We are going to have two witnesses,
20 and since these Cases have been consolidated, Mr. Rial is
21 going to briefly go through some of the Exhibits on geology
22 and then Mr. Malnar will resume the stand and go through the
23 engineering pressure maintenance project.
24
25

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1 WILLIAM MELNAR,
2 was called as a witness and, having already been duly sworn,
3 testified as follows:

4 DIRECT EXAMINATION

5 BY MR. KELLY:

6 Q Would you state your name, profession and employer?

7 A My name is William Melnar, I am District Reservoir
8 Engineer for the Tenneco Oil Company, in Denver,
9 Colorado.

10 Q Have you previously qualified before the Commission as
11 an expert in the field of Petroleum Engineering?

12 A Yes, I have.

13 Q These two Applications have been consolidated, would
14 you briefly state what Tenneco seeks by the two
15 Applications?

16 A Tenneco is seeking approval of unit agreement and also
17 approval of a pressure maintenance project with
18 special unit rules, in the Lone Pine Dakota "D" unit
19 in McKinley County, New Mexico.

20 Q Referring to Exhibit 1, would you locate the unit on
21 the plat?

22 A Exhibit 1 is a location map of the Lone Pine field and
23 the proposed unit is shown on the Exhibit by black hash
24 lines.

25 Q Does Exhibit 1 show all of the wells within two miles of

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1 any injection wells and all of the offset operators?
2 A Yes. The gas injection wells are shown in green and
3 the water injection wells in red.

4 Q Can you give us, just briefly, a history of this
5 particular pool?

6 A The Lone Pine Dakota "D" pool was discovered with the
7 drilling completion of the Lone Pine Number 1 Well
8 located in the northwest of the northwest of Section
9 18, Township 17, North, Range 8 West.

10 It was completed in June of 1970, and after
11 discovery, rapid development followed. As of this
12 date, we have twenty-two producing oil wells and four
13 gas wells, and two temporarily abandoned wells.

14 Q Exhibit Number 2 is a copy of the proposed unit
15 agreement; is that correct?

16 A Yes, it is.

17 Q Would you point out to the Examiner, the Section and
18 page where the legal description of the unit is found?

19 A The legal description of the unit is shown on the
20 unit agreement on pages 2 and 3, in Section 2.

21 MR. KELLY: Mr. Examiner, do you wish the
22 legal description read into the record?

23 MR. UTZ: No, I don't think it is necessary. It
24 is in the form of an Exhibit?

25 MR. KELLY: Yes.

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1 MR. UTZ: What page?

2 THE WITNESS: Pages 2 and 3 of Section 2.

3 Q What structures are to be unitized?

4 A The unitized formations are defined in the unit
5 agreement on pages 3 and 4 of Section 2.

6 Q Now, the purpose of this unit agreement is to introduce
7 a pressure maintenance project; is that correct?

8 A Yes, it is.

9 Q What kind of lands are involved in the unit?

10 A The type of lands involved in the unit are shown on
11 Exhibit 3-B to the unit agreement and they are as
12 follows: Tracts 1, 2, and 3, and Federal 4 through 9,
13 are Indian Tracts and 10 through 12 are Fee lands.

14 Q Can you describe who the offset operators are?

15 A The offset operators are Tesoro Petroleum Company
16 and Kennedy.

17 Q Tenneco has all the rest of the acreage to the south
18 and west; is that basically correct?

19 A Yes, that is true.

20 Q And some part of the north portion is concerned with
21 other operators?

22 A That is correct.

23 Q And Tenneco will be the operator of the unit?

24 A That is correct.

25 Q Who are the other working interest owners in the unit?

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- 1 A Besides Tenneco, there is Tesoro, Beard and Gil,
2 and John Beard.
- 3 Q I assume you have agreements with all the working
4 interest owners?
- 5 A Yes, we do.
- 6 Q What is the situation as far as the Indian and the
7 U.S.G.S. land is concerned?
- 8 A We have preliminary approval for the unit agreement
9 from both the B.I.A., the Bureau of Indian Affairs,
10 and the U.S.G.S., and we have Exhibit Number 3 which
11 is a letter from the United States Department of
12 Interior, Geological Surveys, approving the unit
13 agreement -- giving preliminary approval.
- 14 Q Is that on behalf of the Bureau of Indian Affairs and
15 the U.S.G.S.?
- 16 A That is correct.
- 17 Q How about the Fee land?
- 18 A The Fee land is from Santa Fe and we have agreement
19 from them also.
- 20 Q And the unit agreement submitted with the Application
21 was amended by the U.S.G.S. and B.I.A.?
- 22 A Yes.
- 23 Q And those amendments are shown in Exhibit Number 2; is
24 that correct?
- 25 A That is correct.

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1 Q Do those amendments make any substantial changes or
2 just technical changes in the language?

3 A Primarily, technical changes, and clarification of
4 language.

5 Q Will you show where the tract participation formula
6 is shown in the unit agreement?

7 A The participation formula is found on page 12 of
8 Section 13 of the unit agreement and the formula is
9 based on our current production and is to be in effect
10 until the accumulative recovery of 3.21 million barrels
11 are recovered from the pool.

12 After this Phase 2 will come into effect and that
13 will be based on oil plus the equivalent gas acre fee.

14 Q Is the formula similar to other agreements that have
15 been approved by this Commission?

16 A I believe it is.

17 Q Would it be in the best interest of conservation and
18 prevention of waste and protection of correlative
19 rights to approve this agreement?

20 A Yes, I think so.

21 MR. KELLY: Mr. Commissioner, I would like to state
22 that we could develop more in testimony, but because of the
23 nature of this reservoir it is important that the injection
24 project begin as soon as possible and we have received
25 permission from the U.S.G.S. to begin injection prior to

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1 formal approval of the unit agreement.

2 Q (By Mr. Kelly) Is it Teneco's position that if
 3 granted what is proposed in this Application, that
 4 Tenneco would inject before formal approval by the
 5 U.S.G.S. and B.I.A.?

6 A Yes, it is.

7 MR. KELLY: At this time I would move the introduction
 8 of Exhibits 1 through 3 -- Exhibit 2 is a duplicate of the
 9 proposed unit agreement; is that correct?

10 THE WITNESS: That is correct.

11 MR. KELLY: And Exhibit 1 was prepared by you or
 12 under your supervision?

13 THE WITNESS: That is correct.

14 MR. UTZ: Without objection, Exhibits 1 through 3
 15 will be entered into the record of this Case.

16 (Whereupon, Tenneco's Exhibits 1 through 3 were
 17 admitted in evidence.)

18 MR. KELLY: Mr. Melnar will be recalled for the
 19 Engineering testimony on the pressure maintenance aspect
 20 of this, but that is all I have on this phase of the Case
 21 for him.

22 That concludes our direct testimony on the unit
 23 agreement itself.

24 MR. UTZ: Do you want to submit him for Cross-
 25 Examination, at this time, then?

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1 MR. KELLY: Whatever pleases the Commissioner.
2 MR. UTZ: Any questions?
3 CROSS-EXAMINATION
4 BY MR. HATCH:
5 Q On page 12 of Exhibit 2, in Section 13, when you were
6 speaking of tract participation, it says that Exhibit
7 "C" shows the participation; is this Exhibit "C"
8 (indicating)?
9 A Yes.
10 MR. HATCH: That's all I have.
11 MR. UTZ: If there are no other questions, the
12 witness may be excused.
13 (Witness excused.)
14 MR. UTZ: The witness will be subject to recall.
15 A. D. RIAL,
16 was called as a witness and having been already duly sworn,
17 testified as follows:
18 DIRECT EXAMINATION
19 BY MR. KELLY:
20 Q Would you state your name, position and employer,
21 please?
22 A A. D. Rial, District Geological Engineer for the
23 Tenneco Oil Company.
24 Q You have previously been qualified by the Commission?
25 A Yes.

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1 Q Mr. Rial, will you refer to the structure map marked
2 Exhibit 4 and explain the Exhibit's significance to
3 the Commissioner?

4 A Exhibit 4 is a structure map drawn to the top of the
5 Dakota "D" zone. Shown here on the plat, is the
6 location of all of the producing and dry holes that
7 are in the area.

8 The producing zones are coded and shown in the
9 legend in the lower left-hand corner.

10 We see here the location of the Hospah field and
11 South Hospah field, and then the Dakota-Lone Pine.

12 The Dakota Pool is principally in Section 13 of
13 17 North, Range 9 West, and Section 18, of Township
14 17 North, and Section 8 West.

15 This shows the separation of the South Hospah
16 Pool and the Lone Pine-Dakota Pool. The Lone Pine-Dakota
17 Pool is shown on the structure map and is colored in
18 green and this line is the line which denotes the
19 structural position of the gas-oil contact.

20 Also shown in red is the structural position of
21 the oil-water contact.

22 Q You have a cross section marked as Exhibit 5?

23 A Yes. Shown on the cross section, which is the cross
24 section shown in blue and which goes from the Hospah
25 Well Number 44 in the southeast, across the field to

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1 a dry hole in the northwest of the southwest of
2 Section 17.

3 Also shown on this map, is an outline of the
4 proposed field.

5 Q Why don't you go on to the cross section?

6 A All right. This is a scale of the cross section as
7 shown in the lower right-hand portion of the cross
8 section.

9 What it primarily represents to show is the
10 continuity of the Dakota zone which is colored and
11 shows the position of the top of the sixteen percent
12 and the base of the sixteen percent, and the continuity
13 across the field.

14 It shows the position of the gas-oil contact and
15 the oil-water contact. The gas-oil contact and the
16 oil-water contact was described in the previous
17 structural map.

18 Q And Exhibit Number 6 is a log of the well that defines
19 the vertical limits of the unitized formation; is that
20 correct?

21 A That is true.

22 Q Now, the unitized formation is shown in Exhibit 6
23 and encompasses entirely the vertical limits of the
24 productivity zone of the formation; is that correct?

25 A Yes, it does.

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1 Q In your opinion, does the unit encompass both the
 2 vertical and horizontal limits of this pool?

3 A As we see right now, there is one possible exception,
 4 and that is the State Well that was completed by
 5 Kennedy in the southwest of the southeast of the
 6 northwest of Section 8, 17 North and 8 West.

7 At the present time it cannot be determined whether
 8 it is actually in the Lone Pine Pool or separated from
 9 the Lone Pine Pool and is producing in the Dakota "D"
 10 zone.

11 Q Now, with the exception of that well, are all of the
 12 other existing wells in the Dakota "D" zone in the
 13 unit?

14 A Yes, they are.

15 MR. KELLY: Mr. Examiner, that would conclude the
 16 testimony of Mr. Rial. I would like to submit him for
 17 Cross-Examination on Geology.

18 MR. UTZ: Any questions of the witness?

19 CROSS-EXAMINATION

20 BY MR. KENDRICKS:

21 Q Is Well Number 12 in the northeast of the southeast
 22 of Section 7 completed in the "D" zone or the "A"
 23 zone?

24 A It is completed in the "D" zone.

25 MR. KENDRICKS: That's all.

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1 MR. UTZ: Which well was that?

2 THE WITNESS: Well Number 12 in the northeast
 3 of the southeast of Section 7.

4 MR. UTZ: Any other questions?

5 (No response.)

6 MR. UTZ: If not, the witness may be excused.

7 (Witness excused.)

8 WILLIAM MELNAR,

9 was recalled as a witness and, having been already duly
 10 sworn, testified as follows:

11 DIRECT EXAMINATION

12 BY MR. KELLY:

13 Q Mr. Melnar, going into the engineering on the proposed
 14 pressure maintenance project, what is the drive
 15 mechanism of this reservoir?

16 A The drive mechanism is gas drive.

17 Q Referring to Exhibit 7, which is a summary of the
 18 general reservoir data, would you point out the
 19 significant items?

20 A All pertinent rock in the Lone Pine-Dakota reservoir
 21 can be seen. The reservoir contains low pressure with
 22 pressure of 992 P.S.I. with a volume factor of 1.25;
 23 a G.O.R. of 962; a standard cubic feet high-low gravity
 24 and low viscosity of 332 with an average of 19.3.

25 Based on a computation of this material, the

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1 estimated oil recovery will be 3.18 million barrels
 2 of oil or thirty percent of the oil in place.

3 An additional twenty-five percent of the original
 4 oil in place, or 2.65 million barrels of oil can be
 5 recovered by pressure maintenance with a P.S.I. of
 6 992.

7 I am also going to emphasize that, to obtain
 8 additional recovery of 2.65 million barrels of oil,
 9 it will require sufficient gas to maintain 992 P.S.I., to
 10 maintain that pressure.

11 Q In reference to that, will you refer to Exhibits 8 and
 12 9 and explain why they are important?

13 A Exhibit 8 is a pressure production history of the
 14 Lone Pine-Dakota "D" field. The solid curve at the
 15 bottom of the Exhibit which reads to the left, shows
 16 monthly production from the field in barrels of oil
 17 per month.

18 You can see that in recent months the field has
 19 produced between sixty and sixty-five thousand barrels
 20 of oil per month.

21 The curve at the bottom, which reads to the right,
 22 is accumulative oil production curve and I just want
 23 to point out that, as of December of 1971, the
 24 accumulative production was approximately 780,000 barrels.

25 Now, the curve at the top of the Exhibit is the

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1 bottom hole pressure expressed in P.S.I. You can see
2 the original pressure was 992 P.S.I. and it then
3 declined to approximately 762 P.S.I. since June of
4 1970.

5 Now, if we look at the slope of the decline
6 curve, we can calculate that the recovery has been
7 approximately 4,300 barrels of oil per P.S.I. since
8 the drop of pressure in the reservoir.

9 Now, if you go to Exhibit 9, Exhibit 9 is the
10 recovery maintenance pressure of the Lone Pine-Dakota
11 "D" field. Shown on the Exhibit is the recovery in
12 millions of barrels, on the right, and in percentage
13 of recovery on the left.

14 If the initial pressure of 992 P.S.I. was maintained
15 the recovery could be 5.83 million barrels of oil.
16 However, if unitization is declared, or we do not have
17 sufficient gas to bring about significant recovery, we
18 can lose the ultimate secondary recovery.

19 This is brought out by the fact that, at 60,000
20 barrels of production every month in this field, we are
21 losing approximately 14 P.S.I. per month in reservoir
22 pressure and this is shown by the curve.

23 For each pound of decrease in pressure, we can
24 lose approximately 3,500 barrels of oil in secondary
25 recovery.

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- 1 If you multiply 3,498 times 14 P.S.I., it shows
- 2 you can lose 50,000 barrels of ultimate secondary
- 3 recovery for each pound lost in pressure.
- 4 Q Let me see if I understand you. At the present time,
- 5 what is the pressure in the reservoir?
- 6 A Seven hundred forty-two pounds, approximately.
- 7 Q So if you maintain the pressure, what would be your
- 8 estimate of the recoverable reserves?
- 9 A If we started injecting the recovery would be
- 10 approximately five million barrels instead of 5.85.
- 11 Q As I understand it, you plan to build the pressure
- 12 up to the initial bottom hole pressure?
- 13 A Yes.
- 14 Q As a matter of fact, Tenneco has received permission
- 15 from the Oil Conservation Commissioner last Fall to
- 16 store produced gas in the Dakota zone; is that correct?
- 17 A Yes.
- 18 Q What you are going to do is start producing the stored
- 19 gas and reinjecting it?
- 20 A That is correct.
- 21 Q Now, Exhibit Number 10 is your proposed gathering
- 22 system; is that correct?
- 23 A Yes, it is.
- 24 Q Would you explain the various symbols on this Exhibit?
- 25 A Exhibit 10 shows the proposed gas injection wells and

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1 they are covered in green. The proposed water
 2 injection well is colored in red. Then we show the
 3 gas supply wells in blue.

4 We show on this pipeline gathering map the
 5 pipeline systems for the gas distribution system and
 6 also we show all the oil gathering lines for the unit.

7 Q Now, Wells Numbers 2 and 8, these wells you will
 8 reproduce the gas stored in the zone?

9 A That is correct.

10 Q So you are going to have four gas injection wells and
 11 one water injection well, initially; is that correct?

12 A That is correct.

13 Q What is the present status of the water injection well?

14 A This is a temporarily abandoned well.

15 Q Are you asking for authority to inject water from other
 16 sources?

17 A Yes, we are.

18 Q And, I assume, you are also asking for authority to
 19 drill or convert additional water or gas injection wells
 20 prior to a new Hearing?

21 A Yes.

22 Q And your proposed rules would cover that?

23 A Yes.

24 Q Is there anything else you want to say about the
 25 gathering system?

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1 A I think that's it.

2 Q Now, turning to Exhibit 11, which actually is four
 3 pages and sketches of all four gas injection wells,
 4 would you explain just the top one?

5 A Yes. These are diagrams of the proposed gas injection
 6 well for Well Number 44 and you can see the wells are
 7 completed by setting five and one-half inch casing
 8 and it is cemented by 350 sacks of cement.

9 This is a sufficient amount of cement to bring
 10 the cement at least 1,000 feet above the Dakota "D"
 11 perforation.

12 The injection of gas will still be under the
 13 Packer which will be fifty feet above the perforation
 14 and will be down 2 and 7/8 inch tubing. We will, of
 15 course, maintain surveillance by installing pressure
 16 gages.

17 Q And the other installations are similar there too?

18 A Yes, sir, they are.

19 Q Do you expect any erosion problems with this?

20 A We do not.

21 Q How many cubic feet a day will you be injecting?

22 A Approximately thirteen million cubic feet per day, or an
 23 average of three or four million per day per well.

24 Q What about the pressure?

25 A We expect the pressure to be somewhere in the vicinity

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- 1 of twelve to eighteen hundred P.S.I.
- 2 Q Do you expect any problems in the zone?
- 3 A No.
- 4 Q Exhibit Number 12 is the same type of sketch for
- 5 water injection, will you briefly go through that?
- 6 A It is very similar. Again, we will complete the casing
- 7 and the cementing will be done in the same was as
- 8 previously described. We will maintain the surveillance
- 9 on the pressure.
- 10 Q Will this prevent migration of this projected water
- 11 into any other zones?
- 12 A Yes, it will.
- 13 Q I notice that all of these sketches in Exhibits 11 and
- 14 12, you show the actual footage location for the four
- 15 injection wells; is that correct?
- 16 A That is correct. It is shown on the upper left-hand
- 17 side of the Exhibit.
- 18 Q What are you doing with your water now?
- 19 A It is presently being put in a surface pit.
- 20 Q What are the characteristics of the water?
- 21 A It is fairly fresh water.
- 22 Q And your anticipated injection rate?
- 23 A Approximately 1,500 barrels of water per day.
- 24 Q How about pressure?
- 25 A The pressure is shown in Exhibit 13.

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- 1 Q Exhibit 13 shows the proposed rules governing the
 2 unit. Would you go through those and point out anything
 3 that would be unusual?
- 4 A We have previously submitted to you a copy of our
 5 proposed rules and we made some slight revisions in that,
 6 in those rules, and we would like to just point out these
 7 revisions, if that is okay?

8 MR. UTZ: Okay.

- 9 A (Continuing) In rules 1 through 5, there are no
 10 changes.

11 In rule 6 we eliminated a sentence. A portion of
 12 the sentence begins in the fifth line and the remainder
 13 of that paragraph is eliminated.

- 14 Q In order to make this sensible, will you refer to the
 15 rules that were submitted with the Application?

16 A Rule 7 shows no change.

17 Rule 8 and rule 9, no change -- in rules 8 and
 18 9 we added the words: "injection of gas or water
 19 will be confined to the Dakota "D" Pool."

20 It previously read only injection of gas, and now
 21 we say the injection of gas and water.

22 In item 3 we inserted that -- it read originally
 23 that all of the offset operators will be furnished
 24 with copies of the Application and the date of the
 25 Application. It now reads that all offset operators

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1 within one-half mile of the proposed injection wells
 2 will be furnished with an Application and date of
 3 notification.

4 Rule number 10 is slightly revised and it allows
 5 us to drill an injection well within the unit, but the
 6 producer cannot be located nearer than 330 feet of the
 7 outer boundary of the unit.

8 Q Now, these rules are basically similar to the other
 9 adopted rules of the pressure maintenance projects
 10 of New Mexico; is that right?

11 A That's right.

12 Q In your opinion, would the granting of this Application
 13 protect the rights of all people involved?

14 A Yes, it would.

15 Q Were Exhibits 4 through 13 prepared by you, or under
 16 your supervision?

17 A Yes, they were.

18 MR. KELLY: At this time, I move for the introduction
 19 of Exhibits 4 through 13.

20 MR. UTZ: Without objection, Exhibits 4 through
 21 13 will be made part of the record of this Case.

22 (Whereupon, Tenneco's Exhibits 4 through 13 were
 23 admitted in evidence.)

24 MR. KELLY: That is all we have on Direct, Mr.
 25 Commissioner.

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CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Rial, you are going to produce a certain amount of water with your oil; is that correct?

A Yes, we are.

MR. KELLY: This is Mr. Melnar.

MR. UTZ: I'm sorry.

Q (By Mr. Utz) You will reinject the produced water?

A We plan to inject it back into the producing formation.

Q What if you need more water than that?

A Than we now produce?

Q Yes.

A We possibly may need additional water at some future date.

Q Where would you get the water?

A It's possible we could use some produced water from the Hospah area.

MR. UTZ: Any other questions?

CROSS-EXAMINATION

BY MR. HATCH:

Q What water do you expect to be producing at the beginning of the operation?

A At the beginning, it should be approximately 1,500 barrels per day.

Q About what you would be injecting?

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1 A Yes.
2 Q Do you plan to start injecting the wells immediately?
3 A Yes, that is what we propose to do.

4 MR. HATCH: I have nothing further.

5 CROSS-EXAMINATION

6 BY MR. KENDRICKS:

7 Q How much effect does the water drive have on the
8 reservoir, at the present time, or do you have any
9 way of knowing?

10 A I'd say very light, if any.

11 Q So you are not concerned at the present time about
12 the gas-oil contact being raised in the reservoir and
13 the water-oil contact not being raised?

14 A We are not concerned with that at all.

15 MR. KENDRICKS: I believe that's all.

16 MR. UTZ: You have stored gas produced out of
17 the field -- out of the zone?

18 THE WITNESS: Yes, sir.

19 MR. UTZ: All of it except that which has flared?

20 THE WITNESS: Yes.

21 MR. UTZ: Do you have enough gas in this zone for
22 pressure backup?

23 THE WITNESS: No, sir.

24 MR. UTZ: Where would you get the rest of it?

25 THE WITNESS: We have additional gas reserves to

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1 the north in the Hospah area that is still available for
2 us in the Lone Pine-Dakota.

3 We should have sufficient gas to initiate and
4 maintain the pressure maintenance project in this are.

5 MR. UTZ: I don't think the Commission is going
6 to hold you up from starting, we think you should have
7 started a long time ago.

8 MR. McGRATH: Are you going to have enough need
9 to use all the proposed gas in the entire Hospah area?

10 THE WITNESS: Would you please say that again?

11 MR. McGRATH: I said, do you anticipate you are
12 going to have a need for enough gas to use all the produced
13 gas in the Hospah area?

14 THE WITNESS: For the Lone Pine?

15 MR. McGRATH: Right.

16 THE WITNESS: I think we should probably use all
17 the gas that we have in the area, both in the Hospah and
18 the Lone Pine fields.

19 This is over a period of years, now.

20 MR. KENDRICKS: Can you give me any idea of the
21 amount of liquids that will be squeezed out of the gas that
22 is injected into this zone?

23 THE WITNESS: I don't have any numbers, Mr. Kendrick,
24 but we do feel there are a lot of liquids that will be
25 produced with the gas and the unit plans to install a plant

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1 to process this gas and recover these liquids.

2 MR. KENDRICKS: Do you have gas analyses for the
3 gas that was found?

4 THE WITNESS: I don't have any of these Exhibits
5 with me, I believe we submitted an Exhibit of this type at
6 the gas storage Hearing, but the analysis was very similar
7 in both the "A" and "B" zones.

8 MR. KENDRICKS: If you did submit those, would you
9 submit the gas analysis again, upon request?

10 THE WITNESS: Yes, we would.

11 MR. KENDRICKS: I think that's all.

12 MR. UTZ: Any further questions?

13 (No response.)

14 MR. UTZ: If not, the witness may be excused.

15 (Witness excused.)

16 MR. UTZ: Are there any statements?

17 (No response.)

18 MR. UTZ: The case will be taken under advisement.
19
20
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1 STATE OF NEW MEXICO)
) ss
 2 COUNTY OF BERNALILLO)

3 I, RICHARD E. McCORMICK, a Certified Shorthand Reporter,
 4 in and for the County of Bernalillo, State of New Mexico,
 5 do hereby certify that the foregoing and attached Transcript
 6 of Hearing before the New Mexico Oil Conservation Commission
 7 was reported by me; and that the same is a true and correct
 8 record of the said proceedings to the best of my knowledge,
 9 skill and ability.

10
 11 Richard E. McCormick
 12 CERTIFIED SHORTHAND REPORTER
 13
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I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the hearing of Case No. 4664
 heard by me on 2/10/64 1964

Richard E. McCormick
 New Mexico Oil Conservation Commission

dearnley-meier reporting company

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1	<u>I N D E X</u>			
2	<u>WITNESS:</u>			<u>PAGE</u>
3	<u>WILLIAM MELNAR</u>			
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9	<u>WILLIAM MELNAR (recalled)</u>			
10	Direct Examination by Mr. Kelly			14
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15	<u>E X H I B I T S</u>			
16	<u>APPLICANT'S (Tenneco)</u>		<u>OFFERED</u>	<u>ADMITTED</u>
17	Exhibit 1	Location Map		
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19	Exhibit 2	Proposed Unit Agreement	5	9
20	Exhibit 3	Letter from U. S. Dept. of Interior	7	9
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22	Exhibit 4	Structure Map	10	22
23	Exhibit 5	Cross Section	11	22
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1	(EXHIBITS Continued)			
2				
3	<u>APPLICANT'S</u>		<u>OFFERED</u>	<u>ADMITTED</u>
4	Exhibit 6	Log	12	22
5	Exhibit 7	Summary	14	22
6	Exhibit 8	Pressure Production History	15	22
7	Exhibit 9	Revocery Maintenance Pressure	15	22
8				
9	Exhibit 10	Proposed Gathering System	17	22
10	Exhibit 11	Sketch, Gas Injection	19	22
11	Exhibit 12	Sketch, Water Injection	20	22
12	Exhibit 13	Proposed Rules	20	22
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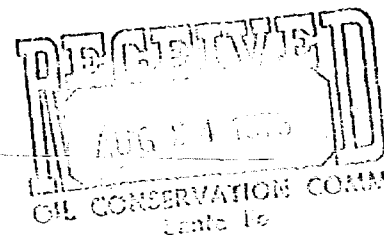
Tenneco Oil
A Tenneco Company

Suite 1200
Lincoln Tower Building
Denver, Colorado 80203
(303) 292-9920



4664

August 21, 1973



Oil Conservation Commission
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.
Secretary - Director

RE: Lone Pine Dakota "D"
Unit Expansion
McKinley County, New Mexico
PA - 5737

Dear Mr. Porter;

Your letter of May 24, 1973 advised that the New Mexico Oil Conservation Commission granted preliminary approval of Tenneco's application for expansion of the Lone Pine Dakota "D" Unit, McKinley County, New Mexico to include the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 8, Township 17 North, Range 8 West, NMPM.

Attached hereto, for your advance information, is a copy of the Notice of Expansion, Joinder and Consent to Expansion of Unit Area and revised Exhibit "C" to the Unit Agreement which has been sent to all working Interest owners, Royalty and Overriding Royalty owners, the Bureau of Indian Affairs and the USGS.


TENNECO OIL COMPANY

Oil Conservation Commission
Mr. A. L. Porter, Jr.
August 21, 1973
Page 2

Tenneco will, of course, file with the Commission the Consent and Joinders of those interests joining in the expansion immediately after the receipt of same from the various interest owners.

Very truly yours,

TENNECO OIL COMPANY



C. H. Moerbe
Landman

CHM/fv

Attachment



TENNECO OIL COMPANY • P. O. BOX 2410 • CAPITOL LIFE BLDG. • DENVER, COLORADO 80201

August 15, 1973

TO THE SUPERVISOR AND OWNERS
OF WORKING, ROYALTY OR OTHER
OIL AND GAS INTERESTS IN THE
LONE PINE DAKOTA "D" UNIT

OIL CONSERVATION COMM
Santa Fe

Re: NOTICE OF EXPANSION
Lone Pine Dakota "D" Unit
McKinley County, New Mexico

Gentlemen:

Tenneco Oil Company, as Unit Operator of the Lone Pine Dakota "D" Unit and pursuant to Section 4 of the Unit Agreement dated February 15, 1972, hereby gives notice of proposed expansion of the Unit Area thereunder to include, effective August 1, 1973 (as Tract 13) the following lands in McKinley County, New Mexico:

Township 17 North, Range 8 West, N.M.P.M.

Section 8: SW/4NW/4

containing 40 acres, more or less,

covered by United States Oil and Gas Lease Serial No. NM-052931.

Such expansion is necessary to bring into unit participation Tesoro Oil Corporation's Hanson #22 well drilled on said lands and completed in the Dakota "D" Sand, the common reservoir with unit production. Attached hereto is a revision of Exhibit "C" to the Unit Agreement showing the Tract Participation of Tract 13 and the revised Tract Participation for all other Tracts.

The basis for such participation of Tract 13 was determined as follows:

1. Phase 1 participation was computed on the same basis used when the Lone Pine Dakota "D" Unit was originally formed, being based on May, 1971 production and assuming that the Hanson #22 well was capable of producing 100 BOPD at that time.
2. Phase 2 participation is the negotiated result of adding the oil plus the equivalent gas acre-feet for Tract 13 (93.60 acre-feet) to the current total unit acre-foot number. The fractional participation for Tract 13 was determined by dividing 93.60 by the total acre-feet as prescribed. The remaining tract participations were determined by multiplying their original tract fractions by one (1) minus the Tract 13 fraction.

After unanimous agreement between the original Unit Working Interest Owners and the Working Interest Owner of Tract 13, preliminary concurrence by the Director and the Area Director to the above described basis for expansion was obtained. Copies of this notice are being mailed to all affected parties to the Lone Pine Dakota "D" Unit Agreement and all such parties are hereby advised that 30 days from the date of mailing will be allowed for submission to the undersigned, as Unit Operator, of any objection to this proposed expansion.

THIS NOTICE SUPERSEDES THE PRIOR NOTICE OF AUGUST 1, 1973.

Respectfully submitted,

TENNECO OIL COMPANY

By L. L. Parish
L. L. Parish
Attorney-In-Fact

LLE/MFC:mt

EXHIBIT "C"

(effective August 1, 1973)

TO UNIT AGREEMENT FOR THE
DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
McKINLEY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Tract Participation</u>	
	<u>Phase I (%)</u>	<u>Phase II (%)</u>
1	.000000	.208237
2	.000000	.060235
3	.000000	.182119
4	8.587377	7.020345
5	4.293689	1.603626
6	8.029196	16.020221
7	8.587377	15.761604
8	8.587377	2.619134
9	8.587377	11.718488
10	.000000	.162541
11A	8.587377	10.622240
11B	31.859164	28.848701
12	8.587377	4.758864
13	<u>4.293689</u>	<u>.413645</u>
	100.000000	100.000000

JOINDER AND CONSENT TO EXPANSION OF UNIT AREA
OF THE LONE PINE DAKOTA "D" UNIT
McKINLEY COUNTY, NEW MEXICO

In consideration of the covenants and considerations of that certain Unit Agreement for the Development and Operation of the Lone Pine Dakota "D" Unit dated February 15, 1972 as expanded to include Tract 13, as set out in Notice of Expansion dated August 15, 1973 (receipt of a copy of which is hereby acknowledged by the undersigned), the undersigned hereby expressly joins and consents to the expansion of Unit Area effective August 1, 1973 to include said Tract 13 which comprises the SW/4NW/4 of Section 8, Township 17 North, Range 8 West, N.M.P.M., McKinley County, New Mexico containing 40 acres, more or less, and hereby amends said Unit Agreement of February 15, 1972 by the deletion of the original Exhibit "C" attached thereto and the substitution therefor of the Exhibit "C" attached hereto.

This Joinder and Consent shall be effective as to the undersigned's interest in any lands and leases, or interests therein, and royalties presently held or which may arise under existing option agreements, or other interests in unitized substances, covering any lands within the Unit Area in which the undersigned may be found to have an oil or gas interest.

This Joinder and Consent shall be binding upon the undersigned, his, her or its heirs, devisees, executors, assigns, or successors in interest.

Executed this _____ day of _____, 1973.

Address: _____

STATE OF _____)
COUNTY OF _____) ss

The foregoing instrument was acknowledged before me this _____ day of _____, 1973, by _____.

Witness my hand and official seal.

Notary Public

My commission expires:

EXHIBIT "C"

(effective August 1, 1973)

TO UNIT AGREEMENT FOR THE
DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
McKINIEY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Tract Participation</u>	
	<u>Phase I (%)</u>	<u>Phase II (%)</u>
1	.000000	.208237
2	.000000	.060235
3	.000000	.182119
4	8.587377	7.020345
5	4.293689	1.603626
6	8.029196	16.020221
7	8.587377	15.761604
8	8.587377	2.619134
9	8.587377	11.718488
10	.000000	.162541
11A	8.587377	10.622240
11B	31.859164	28.848701
12	8.587377	4.758864
13	<u>4.293689</u>	<u>.413645</u>
	100.000000	100.000000

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

May 24, 1973

C
O
P
Y

Tenneco Oil Company
Lincoln Tower Building
Denver, Colorado 80203

Attention: Mr. D. D. Myers

Re: Lone Pine Dakota "D"
Unit Expansion

Gentlemen:

The New Mexico Oil Conservation Commission grants preliminary application for the expansion of the Lone Pine Dakota "D" Unit, McKinley County, to include the SW/4 NW/4 of Section 8, Township 17 North, Range 8 West, NMPM. The addition of the above described 40 acres will increase the unit area to 2638.30 acres.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

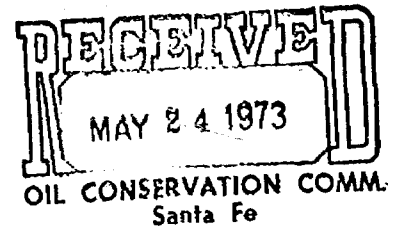
cc: United States Geological Survey
Washington, D. C.

Tenneco Oil
A Tenneco Company

Suite 1200
Lincoln Tower Building
Denver, Colorado 80203
(303) 292-9920



May 21, 1973



Mr. A. L. Porter
Secretary - Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Lone Pine Dakota "D"
Unit Expansion and
Expansion of Pressure
Maintenance
McKinley County, New Mexico

Gentlemen:

Tenneco Oil Company, as operator of the Lone Pine Dakota "D" Unit, respectfully submits application for administrative approval to expand the Lone Pine Dakota "D" Unit and the Pressure Maintenance Project to include 40 acres, more or less, of the following described Federal land:

Township 17 North, Range 8 West
Section 8 SW/4 NW/4 - Federal Lease Number - 052931

The Secretary-Director, under terms of Commission Orders R-4262 and R-4263, has the authority to grant such request.

In support of this application, Tenneco encloses the following:

- 1) a copy of the original application for preliminary approval made to the United States Geological Survey (U.S.G.S.)
- 2) a copy of the letter from the U.S.G.S. approving the preliminary application for expansion.

Commission approval of this application will promote the conservation of oil and gas in the Lone Pine Dakota "D"

TENNECO OIL COMPANY

Mr. A. L. Porter
May 21, 1973
Page 2

Pool, therefore, your rapid approval will be appreciated.

Yours very truly,

TENNECO OIL COMPANY


D. D. Myers
District Production Manager

WEB/lj
Attachments

cc: All Working Interest Owners
C. W. Nance- Rocky Mountain Division



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

MAY 11 1973

Tenneco Oil Company
Lincoln Tower Building
Denver, Colorado 80203

Attention: Mr. R. A. Williford

Gentlemen:

Your application of January 30, 1973, filed with the Oil and Gas Supervisor, Roswell, New Mexico, requests preliminary approval of a proposed expansion of the Lone Pine Dakota "D" unit area, McKinley County, New Mexico.

The proposed expansion will add 40 acres of Federal land thereby increasing the unit area from 2,598.30 acres to 2,638.30 acres. Such expansion contains land indicated by available geologic information to be within the productive limits of the Dakota "D" reservoir. The inclusion of this tract in the unit area is deemed necessary to obtain maximum recovery of secondary oil through better control of pressure maintenance operations in this part of the field.

No objections will be offered to the proposed expansion provided such expansion is accomplished in accordance with the applicable provisions of Section 4 of the unit agreement within a reasonable period of time.

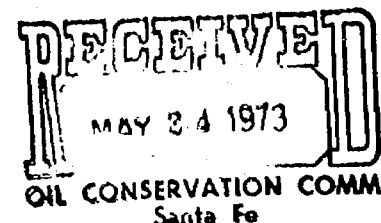
When the Oil and Gas Supervisor, Roswell, New Mexico, is asked to grant final approval of the proposed expansion, a minimum of eight copies of the request for final approval should be submitted along with eight copies of each of the necessary joinders.

Sincerely yours,

Acting Director



January 30, 1973



The Director
United States Geological Survey
Washington, 25 D.C.

RE: Application for the Preliminary
Approval of the First Expansion
of the Lone Pine Dakota "D" Unit,
McKinley County, New Mexico

Gentlemen:

Pursuant to Section 4 (Expansion of the Unit Agreement for the Development and Operation of the Lone Pine Dakota "D" Unit, Tenneco Oil Company, as operator, respectfully submits application for the approval by said Director, Application for the Preliminary Approval of the First Expansion of the Lone Pine Dakota "D" Unit. The area of expansion is 40 acres, more or less, and comprises the following Federal land:

Township 17 North, Range 8 West
Section 8: SW/4 NW/4 Federal Lease Number- 052931

In support of this application, the following numbered items are attached and made a part hereof:

1. Map showing the current Unit Area and the proposed expansion area with tract numbers.
2. Table showing tract designations, lease numbers, names, and operators.
3. Current and Revised Tract Participation Tables.
4. Geologic Study with revised structure and isopach maps plus details on map construction.
5. A table showing the monthly oil production from the Tract to be included demonstrating that hydrocarbons in paying quantities are being recovered.
6. A letter from Tesoro Petroleum accepting the terms of entry herein prescribed.

TENNECO OIL COMPANY

January 30, 1973
Page 2

The basis for participation of the Hanson #22 in the Unit is as follows:

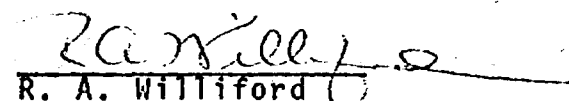
- Phase 1 - the same as when the Unit was formed. Based on May, 1971 Production and assumes the Hanson well capable of 100 BOPD at that time. (While the Hanson #22 is not currently producing 100 BOPD, changes in the mechanical condition of the well should upgrade it to that status.)
- Phase 2 - Has been negotiated by simply adding the oil + equivalent gas acre-feet for the Hanson tract (93.60 Ac-ft) to the current total Unit Acre-foot number. The fractional participation for the Hanson tract was determined by dividing 93.60 by the total acre-feet as prescribed. The remaining tract participations were determined by multiplying their existing tract fractions by 1-Hanson tract fraction.

Tenneco Oil Company, as operator, has received unanimous approval from the Working Interest Owners in the Lone Pine Dakota "D" Unit to proceed with the expansion of the Unit. We therefore respectfully request that the Director approve the First Expansion of the Lone Pine Dakota "D" Unit.

Dated this Thirtieth day of January, 1973.

Yours very truly,

TENNECO OIL COMPANY


R. A. Williford
District Production Manager

WEB/lj
Attachments

cc: Working Interest Owners
C. W. Nance - Rocky Mountain Division

ITEM 2
LEASE SERIAL NUMBERS AND TRACT NUMBERS

<u>Type</u>	<u>Map Tract Number</u>	<u>Serial Number</u>	<u>Lease Name</u>	<u>Working Interest Owner</u>
4 Federal Tracts	1	NM8270	Hospah	Tenneco Oil Co.
	13	952931	Hanson	Tesoro Petroleum
	2	NM0555807	Connelly Fed.	Tenneco Oil Co.
	3	NM9556382	Lone Pine	Tenneco Oil Co.
6 Indian Tracts	4	14-20-0603- 9534	Joe Toledo	John Beard (25%) Beard Oil (75%)
	5	14-20-0603- 9535	Dosh E Pi Henio	John Beard (25%) Beard Oil Co. (75%)
	6	14-20-0603- 9871	Don ne Pah	Tenneco Oil Co.
	7	14-20-0603- 9895	Yazzie	Tenneco Oil Co.
	8	N00-C-14-20- 2666	Kagoso	Tenneco Oil Co.
	9	N00-C-14-20- 3007	Bah E	Gil Oil & Gas Co.
4 Fee Tracts	10	SFP9744	Santa Fe & Pacific RR	Tesoro Petroleum Corp.
	11A	SFP9750	Santa Fe & Pacific RR	Tenneco Oil Co.
	11B	SFP9750	Santa Fe & Pacific RR	Tenneco Oil Co.
	12	SFP9744 SFP9750	Santa Fe & Pacific RR	Tenneco Oil Co. (50%) Tesoro Petroleum (50%)

ITEM 3
CURRENT
TRACT PARTICIPATION PARAMETERS

LONE PINE DAKOTA "D" FIELD
MCKINLEY COUNTY, NEW MEXICO

Tract No.	Description (S-T-R)	Production		Oil + Eq. Gas Ac-F	
		Tract	Unit Fraction	Tract	Unit Fraction
1	SE/4 12-17-9	0	0	47.12	.00209102
2	SW/4 17-17-8	0	0	13.63	.00060485
3	NW/4 19-17-8	0	0	41.21	.00182875
4	SW/4 8-17-8	200	.08972634	1588.57	.07049505
5	NW/4 17-17-8	100	.04486317	362.87	.01610288
6	NW/4 18-17-8	187	.08389411	3625.07	.16086763
7	NE/4 18-17-8	200	.08972634	3566.55	.15827072
8	SE/4 18-17-8	200	.08972634	592.66	.02630013
9	SW/4 18-17-8	200	.08972634	2651.67	.11767162
10	NE/4 7-17-8	0	0	36.78	.00163216
11A	SE/4 7-17-8	200	.08972633	2403.61	.10666361
11B	SE/4 N/2 24-17-9	742	.33288469	6527.91	.28968528
12	SW/4 7-17-8	200	.08972634	1076.84	.04778630
Total		2229	1.00000000	22534.49	1.00000000

ITEM 3 CON'T.
REVISED

TRACT PARTICIPATION PARAMETERS
LONE PINE DAKOTA "D" FIELD
MCKINLEY COUNTY, NEW MEXICO

Tract No.	Description (S-T-R)	Phase I Production		Phase II Oil + Eq. Gas Ac-F	
		Tract	Unit Fraction	Tract	Unit Fraction
1	SE/4 12-17-9	0	0	47.12	.00208237
13	SW/4 NW/4 8-17-8	100	.04293689	93.60	.00413645
2	SW/4 17-17-8	0	0	13.63	.00060235
3	NW/4 19-17-8	0	0	41.21	.00182119
4	SW/4 8-17-8	200	.08587377	1588.57	.07020345
5	NW/4 17-17-8	100	.04293689	362.87	.01603626
6	NW/4 18-17-8	187	.08029196	3625.07	.16020771
7	NE/4 18-17-8	200	.08587377	3566.55	.15761604
8	SE/4 18-17-8	200	.08587377	592.66	.02619134
9	SW/4 18-17-8	200	.08587377	2651.67	.11718488
10	NE/4 7-17-8	0	0	36.78	.00162541
11A	SE/4 7-17-8	200	.08587377	2403.61	.10622240
11B	SE/4 N/2 24-17-9	742	.31859164	6527.91	.28848701
12	SW/4 7-17-8	200	.08587377	1076.84	.04758864
TOTAL		2329	1.00000000	22,628.09	1.00000000

ITEM 4

LONE PINE DAKOTA
"D" UNIT
FIRST EXPANSION
GEOLOGICAL DATA

General

The drilling of three additional wells outside the eastern portion of the Lone Pine Dakota "D" Unit has necessitated a slight revision in the geologic interpretation of that portion of the pool. These wells, the Hanson #22, Edna #1, and the Lillie #1, changed the oil-water contact and the trace of Fault "C" in the eastern portion of the pool.

Net Productive Sand

The net productive sand for both the Hanson #22 and the Edna #1 was calculated to be eight (8) net feet. The basis for this calculation was consistent with page 12, the Engineering and Geologic Report dated September 1, 1971.

Productive Limits

The oil-water contact in the eastern portion of the pool was determined primarily on the basis of information obtained from the drilling of the Lillie #1. This well penetrated the top of the 16 percent porosity in the Dakota "D" Zone at a subsea depth of +4220' and drillstem tested 120 feet of oil and gas cut mud and 786 feet of water. As a result of this recovery, the oil-water contact is now considered to be at a subsea datum of +4219', or one foot below the top of the 16% porosity in the Lillie well. This is three feet below the previously determined contact of +4222' established in the Beard Dosh E Pi Henio #2. This small difference in contact is due to the sensitivity of water saturation to permeability (refer to discussion of Core Data, pp. 9-11, Engineering and Geologic Report).

The gas-oil contact has not changed.

Fault Traces

The tract of Fault "C" (see structure map) has been changed due to the drilling of the Edna #1, Hanson #22, and Lillie #1. On the structure map, Fault "C" turns sharply northward in the vicinity of LPU #2 and then returns to an easterly strike near the Hanson #22 and Edna #1 wells. The fault data for the above changes is shown adjacent to each of the above wells.

Item 4
Page Two

Net Productive Isopach Maps

Net oil and gas pay isopach maps are attached. They were constructed consistent with the Engineering and Geologic Report of September 1, 1971.

ITEM 5

PRODUCTION HISTORY
HANSON #22
TESORO PETROLEUM CORPORATION

	Month	Oil Production Barrels	Cum Oil Barrels
1972	June	2960	2960
	July	2583	5543
	August	2395	7938
	September	2030	9968
	October	2070	12038
	November	2001 (e)	14039

(e) Estimated

ITEM 6
TESORO PETROLEUM CORPORATION

8520 CROWN HILL BOULEVARD

512-624-0261

SAN ANTONIO, TEXAS 78209

HAROLD VAGTBORG, JR.
VICE PRESIDENT

November 14, 1972

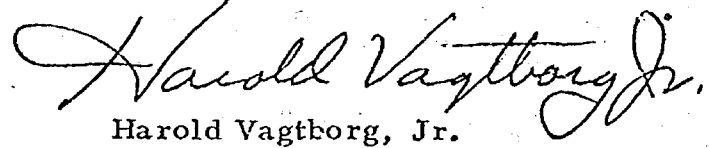
Mr. R. A. Williford
District Production Manager
Tenneco Oil Company
Suite 1200 - Lincoln Tower Bldg.
Denver, Colorado 80203

Dear Buck:

This letter will evidence our agreement to put our Hanson No. 22 well into the Lone Pine Dakota "D" Unit.

It is our understanding that our Phase I participation factor will be 4.116921 and our Phase II participation factor for this well will be 0.403989. It is also our understanding that these interests are subject to adjustment, depending on whether or not Kennedy includes his Edna well in the Lone Pine Dakota "D" Unit.

Yours very truly,


Harold Vagtborg, Jr.

HV:edq

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
MCKINLEY COUNTY, NEW MEXICO

THIS AGREEMENT, entered into as of the 15th day of February, 1972, by and between the parties subscribing, ratifying or consenting hereto, and herein referred to as "parties hereto".

WITNESSETH: That,

WHEREAS, the parties hereto are the owners of working, royalty, or other oil or gas interests in the Unit Area subject to this Agreement; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by law (chap. 72, Laws of 1935, as amended by Chap. 193, Laws of 1937, Chap. 166, Laws of 1941, and Chap. 168, Laws of 1949, Chap. 65, Art. 3, Sec. 14, N.M.S., 1953 anno) to approve this Agreement, and the conservation provisions hereof, and

WHEREAS, the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as amended, 30 U.S.C. Sections 181 et seq., authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with others in collectively adopting and operating a cooperative or unit plan of development or operation of any oil or gas pool, field or like area, or any part thereof for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, the rules and regulations governing the leasing of allotted Indian lands for oil and gas promulgated by the Secretary of the Interior (25 CFR Part 172) under and pursuant to the Allotted Land Leasing Act of March 3, 1909, 35 Stat. 783, 25 U.S.C. Sec. 396 and the oil and gas leases covering said allotted Indian lands provide for the commitment of such leases to a cooperative or unit plan of development or operation; and

WHEREAS, the parties hereto hold sufficient interests in the Lone Pine Dakota "D" Unit Area covering the land hereinafter described to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to enable institution and consummation of secondary recovery operations, conserve natural resources, prevent waste and secure the other benefits obtainable through development and operation of the area subject to this Agreement under the terms, conditions, and limitations herein set forth;

NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this Agreement their respective interests in the Unitized Formation of the below-defined Unit Area, and agree severally among themselves as follows:

SECTION 1. ENABLING ACT AND REGULATIONS. The Act of March 3, 1909, and the Mineral Leasing Act of February 25, 1920, as amended, supra, and all valid pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder and valid pertinent and reasonable regulations hereafter issued thereunder are accepted and made a part of this Agreement as to Federal and Allotted Indian lands, provided such regulations are not inconsistent with the terms of this Agreement; and, as to Non-Federal and Non-Indian lands, the oil and gas operating regulations in effect as of the effective date hereof governing drilling and producing operations, not inconsistent with the terms hereof or the laws of the State in which the Non-Federal and Non-Indian land is located, are hereby accepted and made a part of this Agreement.

SECTION 2. UNIT AREA AND DEFINITIONS. The area described in Exhibit "B" and depicted on Exhibit "A" attached hereto is hereby designated and recognized as constituting the Unit Area, containing 2, 598.30 acres, more or less, in McKinley County, New Mexico. Said land is described as follows:

Township 17 North, Range 8 West, N.M.P.M.

Section 7: Lots 3 & 4, E/2 SW/4, S/2 NE/4, SE/4
Section 8: SW/4
Section 17: NW/4, NW/4 SW/4
Section 18: Lots 1, 2, 3 & 4, E/2 W/2, E/2 (All)
Section 19: Lot 1, NE/4 NW/4

Township 17 North, Range 9 West, N.M.P.M.

Section 12: Lots 7 & 8, SW/4 SE/4
Section 13: Lots 1, 2, 3, 4, 5, 6, 7 & 8,
W/2 E/2, W/2 (All)
Section 14: NE/4 NE/4
Section 24: Lots 1, 2, 3 & 4, W/2 NE/4,
E/2 NW/4, NW/4 NW/4

For the purpose of this Agreement, the following terms and expressions as used herein shall mean:

(a) "Commission" is defined as the Oil Conservation Commission of the State of New Mexico.

(b) "Commissioner" is defined as the Commissioner of Public Lands of the State of New Mexico.

(c) "Director" is defined as the Director of the United States Geological Survey.

(d) "Indian Commissioner" is defined as the Commissioner of Indian Affairs, or his duly authorized delegate.

(e) "Secretary" is defined as the Secretary of the Interior of the United States of America, or his duly authorized delegate.

(f) "Department" is defined as the Department of the Interior of the United States of America.

(g) "Supervisor" is defined as the Oil and Gas Supervisor of the United States Geological Survey.

(h) "Area Director" is defined as the Area Director for the Bureau of Indian Affairs.

(i) "Unitized Formation" is defined as that stratigraphic interval commonly known as the Dakota "D" Zone and more specifically defined as that interval occurring between 2780 feet and 2872 feet

sub-surface in Tenneco Oil Company's Don ne pah Well No. 1 located 820 feet from the North line and 500 feet from the West line of Section 18, Township 17 North, Range 8 West, N.M.P.M., as recorded on the Gamma Ray - Formation Density Log of said well dated 6-3-70.

(j) "Unitized Substances" is defined as and shall mean all oil, gas, gaseous substances, sulphur contained in gas, condensate, and all, associated and constituent liquid or liquefiable hydrocarbons produced from the Unitized Formation of the Unitized Land.

(k) "Tract" is defined as each parcel of land described as such and given a Tract number in Exhibit "B".

(l) "Tract Participation" is defined as that percentage of Unitized Substances allocated to a Tract under this Agreement.

(m) "Unit Participation" of each Working Interest Owner, is defined as the sum of the percentages obtained by multiplying such Working Interest Owner's fractional Working Interest in each tract by the Tract Participation of such Tract.

(n) "Working Interest" is defined as the right to search for and produce Unitized Substances whether held as an incident of ownership of mineral fee simple title, under an oil and gas lease, operating agreement or otherwise held.

(o) "Working Interest Owner" is defined as and shall mean any party hereto owning a Working Interest, including a carried working interest owner, whether by virtue of a lease, operating agreement, fee title or otherwise, whose interest is chargeable with and obligated to pay or bear, either in cash or out of production, or otherwise, all or a portion of the cost of drilling, developing, producing and operating the Unitized Formation. Any interest in Unitized Substances which is a Working Interest as of the date the owner thereof executes or ratifies this Agreement shall thereafter be treated as a Working Interest for all purposes

of this Agreement. The owner of oil and gas rights that are free of lease, or other instrument conveying the Working Interest to another, shall be regarded as a Working Interest Owner to the extent of seven-eighths (7/8) of his interest in Unitized Substances, and as a Royalty Owner with respect to his remaining one-eighth (1/8) interest therein.

(p) "Royalty Interest" or "Royalty" is defined as any interest other than a Working Interest in or right to receive a portion of the Unitized Substances or the proceeds thereof and includes the royalty interest reserved by the lessor by an oil and gas lease and any overriding royalty interest, oil payment interest, or any other payment or burden which does not carry with it the right to search for and produce Unitized Substances. "Basic Royalty Interest" is defined as the royalty interest reserved by the lessor by an oil and gas lease.

(q) "Lessee of Record" is defined as the holder of record title under a United States Oil and Gas Lease.

(r) "Royalty Owner" is defined as and shall mean the owner of a Royalty Interest.

(s) "Unit Operating Agreement" is defined as and shall mean any agreement or agreements (whether one or more) entered into (separately or collectively) by and between the Unit Operator and the Working Interest Owners as provided in Section 9, infra, and shall be styled "Unit Operating Agreement, Lone Pine Dakota 'D' Unit, McKinley County, New Mexico."

(t) "Tract Current Oil Production" is defined as the oil allowable, expressed in barrels of 42 U. S. gallons, assigned to the Unitized Formation in each Tract during the month of May, 1971, as determined and tabulated in the Table of Participating Parameters of the Engineering and Geologic Report for the Lone Pine Dakota "D" Field dated September 1, 1971.

(u) "Unit Area Current Oil Production" is defined as the sum of "Tract Current Oil Production" for all Tracts within the Unit Area.

(v) "Tract Oil Plus Equivalent Gas Acre-Feet" is defined as the net oil acre-feet plus the net gas acre-feet, converted to an oil equivalent

acre-feet, in each Tract as determined and tabulated in the Table of Participation Parameters of the Engineering and Geologic Report for the Lone Pine Dakota "D" Field dated September 1, 1971.

(w) "Unit Area Oil Plus Equivalent Gas Acre-Feet" is defined as the sum of "Tract Oil Plus Equivalent Gas Acre-Feet" for all Tracts within the Unit Area.

(x) "Phase I" means the period of time beginning as of 7:00 A.M. on the effective date hereof and continuing until the first day of the calendar month following the date on which the total cumulative number of barrels of oil produced from the Unitized Formation underlying all Tracts described in the original Exhibit "B" equals 3,180,000 barrels, as determined from the official production reports filed with the Commission. The total volume of oil to be produced during Phase I will be the difference between 3,180,000 barrels and the cumulative volume of oil production from the Unitized Formation underlying all Tracts described in the original Exhibit "B" on the effective date hereof plus the volume of oil produced during the remainder of the calendar month in which the total cumulative production reaches 3,180,000 barrels. The cumulative oil production on the effective date hereof will be determined from the official production reports filed with the Commission.

(y) "Phase II" means the remainder of the term of this agreement after the end of Phase I, and will begin at 7:00 A.M. on the first day of the month, following the date on which the cumulative number of barrels of oil produced from the Unitized Formation underlying all Tracts in the Unit Area totals 3,180,000 barrels.

SECTION 3. EXHIBITS. Exhibit "A" attached hereto is a map showing the Unit Area and, to the extent known to the Unit Operator, the boundaries and identity of Tracts and leases in said Unit Area. Exhibit "B" attached hereto is a schedule showing, to the extent known to the Unit Operator, the acreage comprising each Tract, percentage ownership of each Working Interest Owner in each Tract, and the percentage and ownership of the Record Title in each Tract in the Unit Area, together with the

Royalty Interests in each Tract and the ownership thereof. Exhibit "C" attached hereto is a schedule showing the tract number and the Tract Participation of each Tract in the Unit Area, assuming that all Tracts are committed to this Agreement. Nothing herein or in said schedules or map shall be construed as a representation by any party hereto as to the ownership of any interest other than such interest or interests as are shown in said map or schedule as owned by such party.

Exhibits "A", "B" and "C" shall be revised by the Unit Operator whenever changes render such revisions necessary or when requested by the Supervisor, and not less than six copies thereof shall be filed with the Supervisor.

SECTION 4. EXPANSION. The above-described Unit Area may when practicable be expanded to include therein any additional Tract or Tracts regarded as reasonably necessary or advisable for the purposes of this Agreement. Such expansion shall be effected in the following manner:

Unit Operator shall circulate a notice to each Working Interest Owner of the proposed expansion, setting out the basis for admission, the proposed Tract Participation to be assigned to each such Tract, and other pertinent data. After negotiation (at Working Interest Owners' meeting or otherwise), if 80 percent of the Working Interest Owners (on the basis of Unit Participation at that time) have agreed to such addition of such Tract or Tracts, then Unit Operator shall, after preliminary concurrence by the Director and the Area Director:

- (a) Prepare a notice or proposed expansion describing the contemplated changes in the boundaries of the Unit Area, the reason therefor, the basis for admission of the additional Tract or Tracts, the Tract Participation to be assigned each such additional Tract, the revised Tract Participation for all other Tracts and the effective date thereof; and
- (b) Furnish copies of said notice to the Supervisor, each Working Interest Owner, lessee, and lessor whose interests are affected (mailing a copy of such notice to the last known address of each such Working Interest Owner, lessee and lessor), advising such parties that thirty (30) days will be allowed for submission to the Unit Operator of any objection to such proposed expansion; and

- (c) File, upon the expiration of said thirty (30) days period, as set out in (b) immediately above, the following: (1) Evidence as to mailing said notice of expansion; (2) An application for such expansion in sufficient numbers for appropriate approval and distribution; and (3) An instrument containing the appropriate joinders in compliance with the participation requirements of Section 14 (Tracts Qualified for Participation) and Section 33 (Non-Joinder and Subsequent Joinder), infra; and (4) A copy of all objections received, along with Unit Operator's response to such objections.

The proposed expansion shall, after due consideration of all pertinent information and upon approval by the Supervisor, the Area Director and, if appropriate, the Commission, become effective as of the date prescribed in the notice thereof. The revised Tract Participation of the respective Tracts committed to this Agreement prior to such enlargement shall remain the same ratio one to another.

SECTION 5. UNITIZED LAND AND UNITIZED SUBSTANCES. All land committed to this Agreement as to the Unitized Formation shall constitute land referred to herein as "Unitized Land" or "land subject to this Agreement." Unitized Substances are defined in Section 2 (j) of this Agreement.

SECTION 6. UNIT OPERATOR. Tenneco Oil Company, a Delaware corporation, is hereby designated as Unit Operator, and by signing this instrument as Unit Operator it agrees and consents to accept the duties and obligations of Unit Operator for the operation, development and production of Unitized Substances as herein provided. Whenever reference is made herein to Unit Operator, such reference means the Unit Operator acting in that capacity and not as an owner of interests in Unitized Substances; and the term "Working Interest Owner" when used herein shall include or refer to Unit Operator as the owner of a Working Interest when such an interest is owned by it.

SECTION 7. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of six (6) months after written notice of intention to

resign has been given by Unit Operator to all Working Interest Owners, and the Supervisor and until all unit wells are placed in a satisfactory condition for suspension, or abandonment, whichever is required by the Supervisor and the Commission, unless a new Unit Operator shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by 75 per cent of the committed Working Interest Owners (on the basis of then current Unit Participation) exclusive of the Working Interest Owner who is the Unit Operator. Such removal shall be effective upon notice thereof to the Supervisor.

In all such instances of effective resignation or removal, until a successor to Unit Operator is selected and approved as hereinafter provided, the Working Interest Owners shall be jointly responsible for the performance of the duties of the Unit Operator and shall, not later than thirty (30) days before such resignation or removal becomes effective, appoint a common agent to represent them in any action to be taken hereunder.

The resignation or removal of Unit Operator under this Agreement shall not terminate its right, title or interest as the owner of a Working Interest or other interest in Unitized Substances, but, upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all wells, equipment, books, and records, materials, appurtenances and any other assets, used in conducting the Unit operations and owned by the Working Interest Owners (including any and all data and information which it might have gained or assembled by reason of its operation of the Unitized Land) to the new duly qualified successor Unit Operator or to the Unit Manager if no such new Unit Operator has been elected, to be used for the purpose of conducting Unit Operations hereunder. Nothing herein contained shall be construed to relieve or discharge any Unit Operator who resigns or is removed hereunder for any liability or duties accruing or performable by it prior to the effective date of such resignation or removal.

SECTION 8. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender its resignation as Unit Operator or shall be removed as hereinabove provided, the Working Interest Owners shall select a successor Unit Operator by a majority vote of the Working Interest Owners (on the basis of then current Unit Participation), provided no Working Interest Owner who has been removed as Unit Operator may vote for self-succession. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator; and (b) the selection shall have been approved by the Supervisor and, if appropriate, the Commission. If no Successor Unit Operator is selected and qualified as herein provided, the Director at his election, may declare this Agreement terminated.

SECTION 9. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. Costs and expenses incurred by Unit Operator in conducting Unit operations hereunder shall be paid, apportioned among, and borne by the Working Interest Owners in accordance with the Unit Operating Agreement; however, no such Unit Operating Agreement shall be deemed either to modify any of the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Agreement, and in case of any inconsistency or conflict between this Agreement and the Unit Operating Agreement, this Agreement shall prevail. Three true copies of any Unit Operating Agreement executed pursuant to this section shall be filed with the Supervisor prior to approval of this Agreement.

SECTION 10. RIGHTS AND OBLIGATIONS OF UNIT OPERATOR. Except as otherwise specifically provided herein, the exclusive right, privilege and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing, storing, allocating and distributing the Unitized Substances are hereby delegated to and shall be exercised by the Unit Operator as herein provided. Upon request, acceptable evidence of title to said rights shall be deposited with said Unit Operator and, together with this Agreement, shall constitute and define the rights, privileges, and obligations of Unit Operator. Nothing

herein, however, shall be construed to transfer title to any land or to any lease or operating agreement, it being understood that under this Agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

SECTION 11. USE OF SURFACE.

(a) The parties hereto, to the extent of their rights and interests, hereby grant to Working Interest Owners the right to use as much of the surface of the land within the Unit Area as may reasonably be necessary for Unit operations.

(b) Working Interest Owners shall have free use of brine or water or both from the Unit Area for Unit operations, except water from any well, lake, pond, or irrigation ditch of a Surface Owner; provided, however, no allotted Indian water rights are granted hereby other than those granted in leases or agreements heretofore executed, but said rights may be combined and utilized for Unit operations hereunder.

(c) Working Interest Owners shall pay the owner for damages to and/or loss of livestock, growing crops, timber, fences, improvements, and structures on the Unit Area that result from Unit operations.

SECTION 12. PLAN OF OPERATIONS. It is recognized and agreed by the parties hereto that all of the land subject to this Agreement is reasonably proved to be productive of Unitized Substances and that the object and purpose of this Agreement is to formulate and to put into effect a secondary recovery project in order to effect the greatest economic recovery of Unitized Substances, prevent waste and conserve natural resources, consistent with good engineering practices expected of a prudent operator. The parties hereto agree that the Unit Operator may, subject to the consent to a plan of operation by the Working Interest Owners and approval by the Supervisor, inject into the Unitized Formation,

through any well or wells completed therein, brine, water, air, gas, oil and any one or more other substances whether produced from the Unitized Land or not, and that the location of input wells and the rates of injection therein shall be governed by standards of good engineering practices and conservation methods. After commencement of secondary operations, Unit Operator shall furnish the Supervisor monthly injection and production reports for each well in the Unit. The Working Interest Owners and the Supervisor shall be furnished periodic reports on the progress of the approved plan of operation and any approved revisions or changes thereto.

An acceptable plan of operation shall be filed with the Supervisor concurrently with the filing of this Unit Agreement for final approval. Said plan of operation and all revisions thereof shall be as complete and adequate as the Supervisor may determine to be necessary for timely operation consistent herewith. Upon approval of this Agreement and the aforementioned plan of operation by the Supervisor, said plan, and all subsequently approved plans shall constitute the operating obligations of the Unit Operator under this Agreement for the period specified therein. Thereafter, from time to time before the expiration of any existing plan, the Unit Operator shall submit for like approval a plan for an additional specified period of operation. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation.

SECTION 13. TRACT PARTICIPATION. In Exhibit "C" attached hereto there are listed and numbered the various Tracts within the Unit Area, and set forth opposite each Tract is the Tract Participation of each Tract in the Unit Area during Phase I and Phase II, as hereinabove

defined which have been calculated in accordance with the following formulas:

Phase I
Tract Participation
Percentage = (Equals):

Tract Current Oil Production

100 x (Times) _____
Unit Area Current Oil Production

Phase II
Tract Participation
Percentages = (Equals):

Tract Oil Plus Equivalent Gas Acre-Feet

100 x (Times) _____
Unit Area Oil Plus Equivalent Gas Acre-Feet

In the event less than all of the Tracts within the Unit Area are qualified for unit participation as of the effective date hereof, Unit Operator shall, as soon as practicable after said effective date, prepare a revised Exhibit "C" setting forth the qualified Tracts and showing the revised Tract Participation of each qualified Tract, which Tract Participation shall be calculated and determined by using the factors and formulas set forth above, but applying the same only to the qualified Tracts. Unit Operator shall promptly file copies of such revised Exhibit "C" with the Supervisor and, upon approval of the Supervisor the revised Exhibit "C" shall be effective as of the effective date of this Agreement, and shall thereafter govern the allocation of all Unitized Substances, subject, however, to any further revision or revisions of Exhibit "C" in accordance with the provisions hereof.

SECTION 14. TRACTS QUALIFIED FOR PARTICIPATION. As the objective of this Unit Agreement is to have the lands in the Unit Area operated and entitled to participation under the terms hereof, it is agreed that, notwithstanding anything herein to the contrary, no joinder shall be considered a commitment to this Unit Agreement unless the Tract involved is qualified for participation under this Section 14.

(1) On and after the effective date hereof the Tracts qualified to participate hereunder shall be the Tracts that qualify as follows:

(a) Each tract as to which Working Interest Owners owning 100% of the Working Interest have become parties to this Agreement and as to which (i) Royalty Owners under oil and gas leases on non-Federal land owning seventy-five Percent (75%) or more of the Basic Royalty Interest; or (ii) Lessees of Record owning seventy-five per cent (75%) or more of the record title interest, whichever is applicable, have become parties to this Agreement.

(b) Each Tract as to which Working Interest Owners owning one hundred per cent (100%) of the Working Interest have become parties to this Agreement and as to which Royalty Owners under oil and gas leases on non-Federal land owning less than seventy-five per cent (75%) of the Basic Royalty Interest or Lessees of Record owning less than seventy-five per cent (75%) of the record title interest have become parties to this Agreement and as to which (i) all Working Interest Owners in such Tract have joined in a request for the inclusion of such Tract in Unit participation on the basis of such commitment, and as to which (ii) seventy-five per cent (75%) of the combined voting interests of Working Interest Owners in all Tracts that meet the requirements of Section 14(1) (a) have voted in favor of the acceptance of such Tract as qualified for participation.

For the purpose of this Section 14(1) (b), the voting interest of a Working Interest Owner shall be equal to the ratio that its then current Unit Participation attributable to Tracts that qualify under Section 14(1) (a) bears to the total then current Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Section 14(1) (a).

(c) Each Tract as to which Working Interest Owners owning less than one hundred per cent (100%) of the Working Interest have become parties to this Agreement regardless of the percentage

of Royalty or Record interests commitment hereto, and as to which (i) the Working Interest Owner who operates the Tract and all of the other Working Interest Owners in such Tract who have become parties to this Agreement have joined in a request for inclusion of such Tract in Unit Participation and have executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Working Interest Owners in the Unit Area, their successors and assigns, against all claims and demands that may be made by the owners of Working Interests in such Tract who are not parties to this Agreement, and which arise out of the acceptance of the Tract as qualified for Unit Participation; and as to which (ii) seventy-five per cent (75%) of the combined voting interest of Working Interest Owners in all Tracts that meet the requirements of Section 14(1) (a) and 14(1) (b) have voted in favor of the qualification of such Tract and acceptance of the indemnity agreement.

For the purpose of this Section 14(1) (c), the voting interest of each Working Interest Owner shall be equal to the ratio that its then current Unit Participation attributable to Tracts that qualify under Section 14(1) (a) and 14(1) (b) bears to the total then current Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Section 14(1) (a) and 14(1) (b). Upon the qualification of such a Tract under this Unit Agreement, the Unit Participation that would have been attributed to the non-subscribing owners of the Working Interest in such Tract, had they become parties to this Agreement and the Unit Operating Agreement, shall be attributed to the Working Interest Owners in such Tract who have become parties to such agreements, in proportion to their respective Working Interest in the Tract, and said recipients shall be responsible for payment of valid claims and demands made by the non-subscribing owners.

SECTION 15. ALLOCATION OF UNITIZED SUBSTANCES. All Unitized Substances produced and saved (less any part of such Unitized Substances

used in conformity with good operating practices on Unitized Land for drilling, operating, camp, and other production or development purposes and for pressure maintenance or which is unavoidably lost) shall be apportioned among and allocated to each of the qualified Tracts in accordance with the then effective Schedule of Participation in Exhibit "C". The amount of Unitized Substances allocated to each Tract (regardless of whether it be more or less than the amount of the actual production of Unitized Substances from the well or wells, if any, on such Tract) shall be deemed for all intents, uses and purposes, to have been produced from such Tract.

The Unitized Substances allocated to each Tract shall be distributed among, or accounted for to, the parties executing, consenting to or ratifying this Agreement entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions, as they would have participated and shared in the production from such Tracts, or in the proceeds thereof, had this Agreement not been entered into, and with the same legal force and effect.

No Tract committed to this Agreement and qualified for participation as above provided shall be subsequently excluded from participation hereunder on account of depletion of Unitized Substances; and nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the qualification of any Tract.

If the Working Interest or the Royalty Interest in any Tract are or become divided with respect to separate parcels or portions of such Tract and owned severally by different persons, the Unitized Substances allocated to such Tract shall, in the absence of a recordable instrument executed by all owners and furnished to Unit Operator fixing the divisions of ownership, be divided among the owners of interest in such parcels or portions in proportion to the number of surface acres in each.

The Unitized Substances allocated to each Tract shall be delivered in kind to the respective Working Interest Owners and parties entitled

thereto by virtue of the ownership of oil and gas rights therein. Each Working Interest Owner and the parties entitled thereto shall have the continuing right to receive such production in kind at a common point within the Unit Area and to sell or dispose of the same as it sees fit. Each such party shall have the right to construct, maintain and operate all necessary facilities for that purpose on Unitized Land, provided the same are so constructed, maintained and operated as not to interfere with operations carried on pursuant hereto. Subject to Section 16 (Royalty Settlement) hereof, any extra expenditure incurred by the Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the owner of the Working Interest in the lease receiving the same in kind.

In the event any party hereto shall fail to take or otherwise adequately dispose of its proportionate share of the Unitized Substances, Unit Operator, in order to avoid curtailing Unit operations, may sell or otherwise dispose of such production to itself or others on a day-to-day basis at not less than the prevailing market price in the area for like production; and the account of such party shall be charged therewith as having received such production. Subject to Section 16 (Royalty Settlement) hereof, the net proceeds, if any, of the Unitized Substances so disposed of by Unit Operator shall be paid to the party entitled thereto; provided, however, Unit Operator shall not make a sale into interstate commerce of any Working Interest Owner's share of gas production without first giving such Working Interest Owner sixty (60) days' notice of such intended sale.

If, after the effective date of this Agreement, there is any Tract or Tracts that are subsequently committed hereto, as provided in Section 4 (Expansion), Section 14 (Tracts Qualified for Participation), and Section 33 (Non-Joinder and Subsequent Joinder) hereof, or if any Tract is excluded from the Unit Agreement as provided for in Section 32 (Loss of Title), the schedule of participation as shown in the current Exhibit "C" shall be revised by the Unit Operator and the revised schedule, upon approval by the Supervisor shall govern the allocation of Unitized Substances on and after the effective date thereof until the effective date of a new schedule so approved. The Tract Participations of all Tracts

participating prior to any such revision shall remain in the same ratio one to the other.

SECTION 16. ROYALTY SETTLEMENT. The United States of America and all Basic Royalty Owners who, under an existing lease or contract, are entitled to take in kind a share of the Unitized Substances produced from any Tract unitized hereunder, shall continue to be entitled to such right to take in kind their share of the Unitized Substances allocated to such Tract, and Unit Operator shall make deliveries of such Royalty share taken in conformity with the applicable contracts, laws and regulations. Settlement for Royalty Interest not taken in kind shall be made by Working Interest Owners responsible therefor under existing contracts, laws and regulations, on or before the last day of each month for Unitized Substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any Royalty due under their leases, except that such Royalty shall be computed in accordance with the terms of this Unit Agreement.

If gas obtained from lands not subject to this Agreement is introduced into the Unitized Formation for use in repressuring, stimulation or production or increasing ultimate recovery in conformity with a plan approved by the Supervisor, a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the Unitized Formation, royalty-free insofar as unit operations are concerned as to dry gas but not as to the products extracted therefrom; provided such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor, and provided further that such right of withdrawal shall terminate as of the effective date of termination of the Unit Agreement.

Royalty due the United States and Basic Royalty Owners under Allotted Indian Leases shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all Unitized Substances on the basis of the amount thereof allocated to unitized

Federal and Indian land as provided herein at the rates specified in the respective leases, or at such lower rate or rates as may be authorized by law or regulation; provided that, for leases on which royalty rate depends on the daily average production per well, said average production shall be determined in accordance with the operating regulations as though the Unitized Land were a single consolidated lease.

Each Royalty Owner (other than the United States of America or Basic Royalty Owners under Allotted Indian Leases) that executes this Agreement represents that it is the owner of a Royalty Interest in Tract or Tracts within the Unit Area as its interest appears in Exhibit "B" attached hereto. Subject to Section 32 hereof, if any Royalty Interest in a Tract or Tracts should be lost by title failure or otherwise, in whole or in part, during the term of this Agreement, then the Royalty Interest of the party representing himself to be the owner thereof shall be reduced proportionately and the interest of all parties in the affected Tract or Tracts shall be adjusted accordingly.

SECTION 17. RENTAL SETTLEMENT. Rentals or minimum royalties due on leases committed hereto shall be paid by Working Interest Owners responsible therefor under existing contracts, laws and regulations, provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental or minimum royalty in lieu thereof due under their leases. Rental or minimum royalty for lands of the United States of America and Allotted Indian Lands subject to this Agreement shall be paid at the rate specified in the respective leases from the United States of America and the Indian Lessors unless rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary or his duly authorized representative.

SECTION 18. CONSERVATION. Operations hereunder and production of Unitized Substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by or pursuant to Federal and State laws and regulations.

SECTION 19. DRAINAGE. The Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from Unitized Land by wells on land not subject to this Agreement.

SECTION 20. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions and provisions of all leases, subleases and other contracts relating to exploration, drilling, development or operation for oil or gas on lands committed to this Agreement are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect; and the parties hereto hereby consent that the Secretary shall, and by his approval hereof, or by the approval hereof by his duly authorized representatives, hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of Federal and Indian leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this Agreement.

Without limiting the generality of the foregoing, all leases, subleases and contracts are particularly modified in accordance with the following:

- (1) The development and operation of lands subject to this Agreement under the terms hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part or separately owned tract subject to this Agreement, regardless of whether there is any development of any particular part or Tract of the Unit Area, notwithstanding anything to the contrary in any lease, operating agreement or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.
- (2) Drilling, producing or secondary recovery operations performed hereunder upon any Tract of Unitized Land shall be accepted and deemed to be performed upon and for the benefit of each and every Tract of Unitized Land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on land therein embraced.
- (3) Suspension of drilling or producing operations on all Unitized Land pursuant to direction or consent of the Supervisor or his duly authorized representatives shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every Tract of Unitized Land. A suspension of drilling or producing operations limited to specified lands shall be applicable only to such lands.
- (4) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil and gas which by its terms might expire prior to the termination of this Agreement

is hereby extended beyond any such term so provided therein, so that it shall be continued in full force and effect for and during the term of this Agreement.

- (5) The segregation of any Federal lease committed to this Agreement is governed by the following provision in the fourth paragraph of Section 17(j) of the Mineral Leasing Act, as amended by the Act of September 2, 1960 (74 Stat. 781-784);

"Any (federal) lease heretofore or hereafter committed to any such (unit) plan embracing lands that are in part within and in part outside of the area covered by any such plan shall be segregated into separate leases as to the lands committed and the lands not committed as of the effective date of unitization: Provided, however, that any such lease as to the non-unitized portion shall continue in force and effect for the term thereof but for not less than two years from the date of such segregation and so long thereafter as oil or gas is produced in paying quantities."

- (6) Any Indian lease committed hereto having only a part of its land within the Unit Area shall be segregated as to (a) the lands lying inside the Unit Area, as to all formations thereunder, and (b) the lands lying outside the Unit Area, as to all formations thereunder; and the provisions of such lease shall apply separately as to such segregated parts commencing as of the effective date of unitization.

SECTION 21. CORRECTION OF ERRORS. It is hereby agreed by all parties to this Agreement that Unit Operator is empowered to correct any mathematical or clerical errors which may exist in the pertinent exhibits to this Agreement; provided, however, that correction of any error other than mathematical or clerical shall be made by Unit Operator only after first having obtained approval of Working Interest Owners and the Supervisor.

SECTION 22. COVENANTS RUN WITH LAND. The covenants herein shall be construed to be covenants running with the land with respect to the interest of the parties hereto and their successors in interest until this Agreement terminates; and any grant, transfer or conveyance of interest in land or leases subject hereto shall be, and hereby is, conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee or other successor in interest. No assignment or transfer of any Working Interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, or acceptable photostatic or

certified copy, of the recorded instrument of transfer; and no assignment or transfer of any Royalty Interest subject hereto shall be binding upon the Working Interest Owner responsible therefor until the first day of the calendar month after said Working Interest Owner is furnished with the original, or acceptable photostatic or certified copy, of the recorded instrument of transfer.

SECTION 23. WAIVER OF RIGHT TO PARTITION. Each party hereto covenants that, during the existence of this Agreement, it will not resort to any action to partition the Unitized Land as to the Unitized Formation or the Unit Equipment, and to that extent waives the benefits of all laws authorizing such partition.

SECTION 24. EFFECTIVE DATE AND TERM. This Agreement shall become binding upon each party who executes or ratifies it as of the date of execution or ratification by such party and shall become effective as of 7:00 A.M. on the first day of the month next following the approval of this Agreement by the Secretary, or his duly authorized representative.

Within thirty (30) days after the effective date of this Agreement Unit Operator shall file for record in the office of the County Clerk of McKinley County, New Mexico, a certificate to the effect that this Agreement has become effective according to its terms and stating further the effective date. Unit Operator shall also file for record in the same county records at least one counterpart of this Agreement.

The term of this Agreement shall be for and during the time that Unitized Substances are or can be produced in quantities sufficient to repay the cost of producing same from the Unitized Land and as long thereafter as drilling, reworking or other operations (including secondary recovery operations) are prosecuted thereon without cessation of more than ninety (90) consecutive days, and so long thereafter as Unitized Substances can be produced as aforesaid.

This Agreement may be terminated by Working Interest Owners owning 90% Unit Participation then current at any time for any other reason, with the approval of the Supervisor. Notice of any such termination shall be given by Unit Operator to all parties hereto.

Upon termination of this Agreement, the parties hereto shall be governed by the terms and provisions of the leases and contracts affecting the separate tracts.

If not otherwise covered by the leases unitized under this Agreement, Royalty Owners hereby grant Working Interest Owners a period of six (6) months after termination of this Agreement in which to salvage, sell, distribute or otherwise dispose of the personal property and facilities used in connection with Unit operations.

SECTION 25. RATE OF PROSPECTING, DEVELOPMENT AND PRODUCTION.

All production and the disposal thereof shall be in conformity with allocations and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State Statute. The Director is hereby vested with authority to alter or modify from time to time, in his discretion, the rate of prospecting and development and, within applicable limits made or fixed by the Commission with respect to lands under its jurisdiction, to alter or modify the quantity and rate of production under this Agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification; provided further that no such alteration or modification shall be effective as to any privately owned lands subject to this Agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

Powers in this Section vested in the Director shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than fifteen (15) days from notice.

SECTION 26. NON-DISCRIMINATION. In connection with the performance of work under this Agreement, the Operator agrees to comply with all of the provisions of Section 202, (1) to (7) inclusive, of Executive Order 11246 (30 F.R. 12319), which are hereby incorporated by reference in this Agreement.

The Unit Operator shall also comply with the terms and conditions of the Indian leases while engaged in operations thereon with respect to the employment of available Indian labor.

SECTION 27. APPEARANCES. Unit Operator shall, after notice to other parties affected, have the right to appear for or on behalf of any and all interests affected hereby before the Department, and the Commission, and to appeal from any order issued under the rules and regulations of the Department or the Commission, or to apply for relief from any of said rules and regulations or in any proceedings relative to operations before the Department or the Commission, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his or its own expense to be heard in any such proceeding.

SECTION 28. NOTICES. All demands, notices, objections or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if made in writing and personally delivered to the party or parties or sent by post-paid registered or certified mail addressed to such party or parties at their respective addresses set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such party or parties may have furnished in writing to the party sending the notice, demand or statement.

SECTION 29. NO WAIVER OF CERTAIN RIGHTS. Nothing contained in this Agreement shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the State wherein said Unitized Land is located, or rules or regulations issued thereunder in any way affecting

such party, or as a waiver by any such party of any right beyond his or its authority to waive.

SECTION 30. EQUIPMENT AND FACILITIES - FIXTURES ATTACHED TO REALTY. Each Working Interest Owner has heretofore placed and used on its Tract or Tracts committed to this Agreement various well and lease equipment and other property, equipment and facilities. It is also recognized that additional equipment and facilities may hereafter be placed and used upon the Unitized Land as now or hereafter constituted. Therefore, for all purposes of this Agreement, any and all such equipment shall be considered to be personal property and not fixtures attached to realty. Accordingly, said well and lease equipment and personal property is hereby severed from the mineral estates affected by this Agreement; and it is agreed that any and all such equipment and personal property shall be and remain personal property for all purposes.

SECTION 31. UNAVOIDABLE DELAY. All obligations under this Agreement requiring the Unit Operator to commence or continue secondary recovery operations or to operate on or produce Unitized Substances from any of the lands covered by this Agreement shall be suspended while, but only so long as, the Unit Operator, despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State or municipal law or agency, unavoidable accident, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

SECTION 32. LOSS OF TITLE. In the event title to any Tract of Unitized Land shall fail so as to render the Tract inoperable under this Agreement and the true owner cannot be induced to join this Unit Agreement, such Tract shall be automatically regarded as not committed hereto effective as of 7:00 A.M. on the first day of the calendar month in which such title failure is determined, and there shall be such re-adjustment

of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title as to any Royalty, Working Interest or other interest subject thereto, payment or delivery on account thereof may be withheld without liability or interest until the dispute is finally settled; provided that, as to Federal and Indian land or leases, no payments of funds due the United States of America or an Indian Lessor shall be withheld, but such funds shall be deposited as directed by the Supervisor, to be held as unearned money pending final settlement of the title dispute, and then applied as earned or returned in accordance with such final settlement.

Unit Operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

SECTION 33. NON-JOINDER AND SUBSEQUENT JOINDER. Joinder by any Non-Working Interest Owner, at any time, must be accompanied by appropriate joinder of the corresponding Working Interest Owner in order for the interest of such Royalty Owner to be regarded as effectively committed. Joinder to the Unit Agreement by a Working Interest Owner, at any time, must be accompanied by appropriate joinder to the Unit Operating Agreement in order for such interest to be regarded as committed to this Unit Agreement.

Any oil or gas interest in the Unitized Formation underlying the Unit Area not committed hereto prior to submission of this Agreement for final approval may thereafter be committed hereto upon compliance with the applicable provisions of this Section and of Section 14. (Tracts Qualified for Participation) hereof, at any time up to the effective date hereof on the same basis of participation as provided in said Section 14, by the owner or owners thereof subscribing, ratifying, or consenting in writing to this Agreement and, if the interest is a Working Interest, by the owner of such interest subscribing also to the Unit Operating Agreement.

It is understood and agreed, however, that on and after the effective date hereof the commitment of a Working Interest in any Tract

within the Unit Area, shall be upon such equitable terms as may be negotiated by Working Interest Owners and the Owners of such interest, subject to approval of the revised Exhibit "C" by the Director or the Supervisor pursuant to Section 15 hereof. Except as may be otherwise herein provided, subsequent joinder as to Tracts within the Unit Area shall be effective as of 7:00 A. M. of the first day of the month following the filing with the Supervisor of duly executed counterparts of any and all documents necessary to establish effective commitment of his interest to this Agreement unless objection to such joinder or basis of participation is made within sixty (60) days by the Supervisor.

SECTION 34. PRODUCTION AS OF THE EFFECTIVE DATE.

(a) Oil In Lease Tankage on Effective Date. Unit Operator shall make a proper and timely gauge of all lease and other tanks on Unitized Land in order to ascertain the amount of merchantable oil above the pipe line connection in such tanks as of 7:00 A.M. on the effective date hereof. All such oil which has then been produced legally shall be and remain the property of the parties entitled thereto the same as if the Unit had not been formed; and such parties shall promptly remove said oil from the Unitized Land. Any such oil not so removed shall be sold by Unit Operator for the account of parties entitled thereto, subject to the payment of all royalty and other payment under the terms and provisions of the Unit Agreement and any applicable lease or leases and other contracts. Any oil that is in excess of the prior allowable of the wells from which it was produced shall be regarded as Unitized Substances produced after the effective date hereof.

(b) Overproduction. If, as of the effective date hereof, any Tract of Unitized Land is overproduced with respect to the allowable of the wells on such Tract and the amount of overproduction has been sold or otherwise disposed of, such overproduction shall be regarded as a part of the Unitized Substances produced after the effective date hereof and shall be charged to such Tract as having been delivered to the parties entitled to Unitized Substances allocated to such Tract.

SECTION 35. COUNTERPARTS. This Agreement may be executed in any number of counterparts, no one of which needs to be executed by all parties, and may be ratified or consented to by separate instrument in writing specifically referring hereto, and shall be binding upon all those parties who have executed such a counterpart, ratification or consent hereto with the same force and effect as if all parties had signed the same document, and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above-described Unit Area.

SECTION 36. TAXES. Each party hereto shall, for its own account, render and pay its share of any taxes levied against or measured by the amount or value of the Unitized Substances produced from the Unitized Land; provided, however, that, if it is required or if it be determined that the Unit Operator or the several Working Interest Owners must pay or advance said taxes for the account of the parties hereto, it is hereby expressly agreed that the parties so paying or advancing said taxes shall be reimbursed therefor by the parties hereto, including Royalty Owners, who may be responsible for the taxes on their respective allocated share of said Unitized Substances. No taxes shall be charged to the United States or to any lessor who has a contract with a lessee which requires his lessee to pay such taxes.

SECTION 37. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the Working Interest Owners, nor any of them, shall be subject to any forfeiture, termination or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provisions thereof to the extent that the said Unit Operator or the Working Interest Owners, or any of them, are hindered, delayed or prevented from complying therewith by reason of failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained.

SECTION 38. NO PARTNERSHIP. It is expressly agreed that the relation of the parties hereto is that of independent contractors, and nothing contained in this Agreement, express or implied, or any operations conducted hereunder, shall create or be deemed to have created a partnership or association between the parties hereto or any of them.

SECTION 39. BORDER AGREEMENTS. Subject to the approval of the Supervisor, the Unit Operator, with concurrence of Working Interest Owners having a combined Unit Participation of 80%, may enter into a border-protection agreement or agreements with the Working Interest Owners of adjacent lands with respect to operations designed to increase ultimate recovery, conserve natural resources and protect the parties and their interests.

SECTION 40. LIMITATION OF APPROVALS. Notwithstanding anything herein contained to the contrary, if no State lands are committed to this Agreement, then no consents or approvals provided herein shall be required of the Commissioner, and it shall not be necessary to file any instrument hereunder with said officer unless and until State Lands are so committed to this Agreement; likewise, if no fee lands are committed to this Agreement, then no consents or approvals provided herein shall be required of the Commission; and it shall not be necessary to file any instrument hereunder with said office unless and until fee lands are so committed to this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and have set opposite their respective names the date of execution.

DATE: February 15, 1972

ADDRESS:
Suite 1200
Lincoln Tower Building
Denver, Colorado 80203
Attention: District Production
Manager

TENNECO OIL COMPANY

By: L. L. Parish
L. L. Parish
Attorney-In-Fact

UNIT OPERATOR AND WORKING INTEREST OWNER

STATE OF COLORADO X
 X ss.
CITY & COUNTY OF DENVER X

The foregoing instrument was acknowledged before me this 15th
day of February, 1972, by L. L. PARISH, Attorney-In-Fact of
TENNECO OIL COMPANY, a Delaware Corporation, on behalf of said corporation.

Witness my hand and official seal.

Elane C. Middaugh
Notary Public

Elane C. Middaugh

My Commission Expires:

My Commission expires July 10, 1974

EXHIBIT "g"
TO UNIT AGREEMENT FOR THE DEVELOPMENT AND
OPERATION OF THE LONG PINE DAKOTA "D" UNIT
MCKINLEY COUNTY, NEW MEXICO

Tract No.	Description of Land	Number of Acres	Serial No. and Expiration Date of Lease	Basic Royalty & Ownership Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
FEDERAL LAND							
1	T17N-R9W Sec. 12: Lots 7&8 SW/4SE/4	91.66	NM-8270 3-31-74	U.S.A.: All	Tenneco Oil Co. Alpha L. Hotchkiss Dave M. Thomas, Jr. Claude M. Kennedy F. D. McCallon Carl C. Whigham, Sr. Thomas G. Whigham Jas. C. Vandiver Joe W. Cherry	2.0000 3.1250* 1.5625* 1.5625* 8.7500* 3.7500* 3.1250* 3.1250*	Tenneco Oil Co.: All
* Production payment							
2	T17N-R8W Sec. 17: NW/4SW/4	40.00	NM-0555807 1-31-75	U.S.A.: All	Gulf Oil Corp. Gulf Oil Corp.	12.5000	Tenneco Oil Co.: All
3	T17N-R8W Sec. 19: Lot 1, NE/4NW/4	79.44	NM-0556382 3-31-75	U.S.A.: All	Tenneco Oil Co. Ruth Ross Thomas H. Connelly	2.5000 2.5000	Tenneco Oil Co.: All
3 Federal Tracts		211.10 Acres					
INDIAN LAND							
4	T17N-R8W Sec. 8: SW/4	160.00	14-20-0603-9534 12-13-75	Heirs of Allottee Joe Toledo: All	Beard Oil Co. & J. M. Beard	Amoco Production Co. 6.2500 F. H. Hartman .6745	Beard Oil Co.: 75.00 J. M. Beard: 25.00
5	T17N-R8W Sec. 17: NW/4	160.00	14-20-0603-9535 12-13-75	Heirs of Allottee Dosh e pi Henio: All	Beard Oil Co. & J. M. Beard	Amoco Production Co. 6.2500 F. H. Hartman .6745	Beard Oil Co.: 75.00 J. M. Beard: 25.00

6	<u>T17N-R8W</u> Sec. 18:	Lots 1&2 E/2NW/4	159.52	14-20-0603-9871 8-21-76	Heirs of Allottee Don ne pah: All	Tenneco Oil Co.: All	Claude C. Kennedy & 3.00000 Edna L. Kennedy Dr. Raymond E. Sitta & Geraldine Sitta J. D. Wilson & Dorothy Wilson	5.16600 5.16700	Tenneco Oil Co.: All
7	<u>T17N-R8W</u> Sec. 18:	NE/4	160.00	14-20-0603-9895 7-12-76	Heirs of Allottee Nah di yaz zie: All	Tenneco Oil Co.: All	J. C. Templeton	2.50000	Tenneco Oil Co.: All
8	<u>T17N-R8W</u> Sec. 18:	SE/4	160.00	NCO-C-14-20-2666 1-8-80	Heirs of Allottee Kagoso: All	Tenneco Oil Co.: All	None		Tenneco Oil Co.: All
9	<u>T17N-R8W</u> Sec. 18:	Lots 3&4 E/2SW/4	159.20	NCO-C-14-20-3007 12-1-80	Heirs of Allottee Bah e: All	Gilbert S. Maxwell, d/b/a Gil Oil & Gas Company	Alan J. Antweil H. W. Smith Donald G. Stevens Stanley B. Saiken Robert M. Williams Jim L. Sharp J. Burton Veteto Harold Schneider	40.67000 1.00000 3.33000 1.00000 1.00000 1.00000 1.00000 1.00000	Gilbert S. Maxwell, d/b/a Gil Oil & Gas Company: All

6 Indian Tracts 958.72 Acres

<u>PATENTED LAND</u>									
10	<u>T17N-R8W</u> Sec. 7:	S/2NE/4	80.00	HBP	Santa Fe Pacific Railroad Co.: All	Tesoro Pet- roleum Corp.	None		Tesoro Petroleum Corp.: Corp.: All
11A	<u>T17N-R8W</u> Sec. 7:	SE/4	160.00	HBP	Santa Fe Pacific Railroad Co.: All	Tenneco Oil Co.	None		Tenneco Oil Co.: All
11B	<u>T17N-R9W</u> Sec. 13:	Lots 1,2, 3,4,5,6,7, 88, W/2E/2, W/2 (All)	1,029.25	HBP	Santa Fe Pacific Railroad Co.: All	Tenneco Oil Co.	None		Tenneco Oil Co.: All
	Sec. 14:	NE/4NE/4							
	Sec. 24:	Lots 1,2, 3&4, W/2 NE/4 E/2NW/4, NW/4 NW/4							

12 T17N-R8W
Sec. 7: Lots 384
E/2SW/4

159.23

HBP

Santa Fe Pacific
Railroad Co.: All

Tenneco Oil Co. None
Tesoro Oil Corp.

Tenneco Oil Co.: 50.00
Tesoro Oil Corp.: 50.00

4 Patented Tracts 1,428.48 Acres

Total: 12 Tracts, 2,598.30 Acres in Entire Unit Area

EXHIBIT "C"

TO UNIT AGREEMENT FOR THE
DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
MCKINLEY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Tract Participation</u>	
	<u>Phase I (%)</u>	<u>Phase II (%)</u>
1	.000000	.209102
2	.000000	.060485
3	.000000	.182875
4	8.972634	7.049505
5	4.486317	1.610288
6	8.389411	16.086763
7	8.972634	15.827072
8	8.972634	2.330013
9	8.972634	11.767162
10	.000000	.163216
11A	8.972633	10.866361
11B	33.288469	28.668528
12	8.972634	4.778630
	100.000000	100.000000

4664
Drawer 1857
Roswell, New Mexico 88201

June 13, 1972

Tenneco Oil Company
P. O. Box 2410
Denver, Colorado 80201

Attention: Mr. M. K. Mendenhall

Gentlemen:

Your letter of May 31 transmits one xerox copy of a recorded "Certificate of Effectiveness" for the Lone Pine Dakota "D" unit agreement, No. 14-08-0001-11596. Such instrument is filed to substantiate the effective date of the agreement as April 1, 1972. The "Certificate of Effectiveness" is hereby accepted for record purposes and copies thereof are being furnished to appropriate Federal and Indian offices.

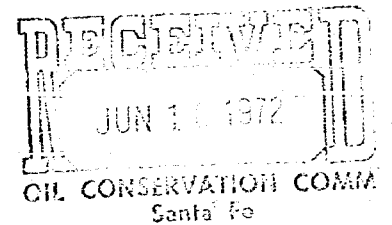
Sincerely yours,

(ORIG. SGN'D BY N. O. FREDERICK)

N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/attach.)
BIA, Window Rock (w/attach.)
BIM, Santa Fe (w/attach.)
Farmington (w/attach.)
~~WACG~~, Santa Fe (ltr. only) ✓
Accounts (ltr. only)

GDaniel:ih





UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

March 30, 1972

Tenneco Oil Company
P. O. Box 2410
Denver, Colorado 80201

4664

Attention: Mr. Millard F. Carr

Gentlemen:

The Lone Pine Dakota "D" unit agreement, McKinley County, New Mexico, was approved on March 30, 1972. This agreement has been designated No. 14-08-0001-11596. Please furnish this office with the Certificate of Effectiveness required by Section 24 of the unit agreement.

Enclosed are two copies of the approved unit agreement for your records. Please furnish the New Mexico Oil Conservation Commission and other interested principals with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) N. O. FREDRICK

N. O. FREDRICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy approved agr.)
BIA, Window Rock (w/cy approved agr.)
BLM, Santa Fe (w/cy approved agr.)
BMC, Roswell (ltr. only)
MEOCC, Santa Fe (ltr. only) ✓

RECEIVED
APR 3 1972



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Drawer 1857
Roswell, New Mexico 88201

March 31, 1972

4604

Tenneco Oil Company
Suite 1200, Lincoln Tower Building
Denver, Colorado 80203

Attention: Mr. R. A. Williford

Gentlemen:

Your initial plan covering secondary recovery operations for the Lone Pine Dakota "D" unit area, McKinley County, New Mexico, for the period from April 1, 1972, through December 31, 1972, was approved on this date.

Two approved copies of the plan are attached.

Sincerely yours,

(ORIG. FILED IN 100-1-100000)

N. O. FREDERICK
Regional Oil & Gas Supervisor

cc:

Washington
Farmington
✓ NMOC, Santa Fe

JWillock:ds

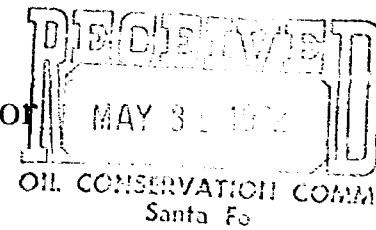
RECEIVED
APR 3 1972



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201



May 26, 1972

4664

Tenneco Oil Company
P. O. Box 2410
Denver, Colorado 80201

Attention: Mr. Darrell L. Metcalf

Gentlemen:

We acknowledge receipt on May 15 of ratifications and joinders to the Lone Pine Dakota "D" unit agreement No. 14-08-0001-11596, McKinley County, New Mexico, by Rose Cayadito Simms, a basic royalty owner under Navajo Allotted tract No. 4, and Thomas H. Connolly, an overriding royalty interest owner under Federal tract No. 3. Such commitments are considered to be effective as of June 1, 1972, and are being distributed to the appropriate Federal and Indian offices. All copies surplus to our needs are returned herewith. It is requested that you furnish appropriate notice of these actions to all interested principals.

Sincerely yours,

(ORIG. SGD.) N. O. FREDERICK

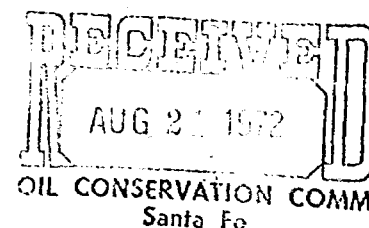
N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy joinders)
BIA, Window Rock (w/cy joinders)
BLM, Santa Fe (w/cy joinders)
Farmington (w/cy joinders)
NMOCC, Santa Fe (ltr. only)
Accounts (ltr. only)

JWillock:lh



August 11, 1972



Mesoro Petroleum
8520 Crownhill Blvd
San Antonio, Texas

Re: Inclusion of the Hanson #22
into the Lone Pine Dakota
"D" Unit, McKinley County,
New Mexico

Gentlemen:

Tenneco Oil Company, as operator of the Lone Pine Dakota "D" Unit, has evaluated the feasibility of bringing the Hanson #22 into the Lone Pine Dakota "D" Unit. We are proposing to include the captioned well into the unit on the same basis that other tracts were included when the Unit was originally formed. Your Phase I participation factor (see attached Table 1) would be 4.116921%. This is based on May, 1971 production of 2429 BOPD and assumes the Hanson #22 would have been producing its allowable 100 BOPD at that time. This Phase I factor would be in effect until a total of 3,232,000 barrels of oil has been produced from the reservoir.

Attached also is Figure 1, which is a revised net pay isopach of the Dakota "D" Zone. Based on this map, there are 93.60 oil plus equivalent gas acre-feet underlying your tract. Based on this volume, your Phase II participation would be .403989%.

Tenneco asks that you give consideration to our proposal and notify us of your decision by September 15, 1972. Your final inclusion into the Unit is contingent upon an 80% compliance of the current working interest owners and the approval of the United States Geological Survey, and the New Mexico Oil Conservation Commission.

If you have any questions, please contact me.

Yours very truly,

TENNECO OIL COMPANY

Original Signed
R. A. WILLIFORD

R. A. Williford
District Production Manager

WEB/dw

cc: USGS - Roswell
NMOCC - Aztec and Santa Fe
All Working Interest Owners

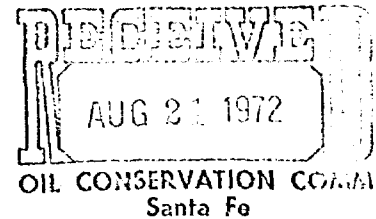
TENNECO OIL COMPANY

A Major Component of Tenneco Inc.

SUITE 1200 • LINCOLN TOWER BUILDING • DENVER, COLORADO 80203



August 11, 1982



Mr. C. C. Kennedy
1249 Chaco Ave.
Farmington, New Mexico 87401

RE: Inclusion of the BEK Edna #1
into the Lone Pine Dakota
"D" Unit, McKinley County,
New Mexico

C
O
P
Y

Dear Mr. Kennedy:

Tenneco Oil Company, as operator of the Lone Pine Dakota "D" Unit, has evaluated the feasibility of bringing the BEK Edna #1 into the Lone Pine Dakota "D" Unit. We are proposing to include the captioned well into the unit on the same basis that other tracts were included when the Unit was originally formed. Your Phase I participation factor (see attached Table 1) would be 4.116921%. This is based on May, 1971 production of 2429 BOPD and assumes the Edna #1 would have been producing its allowable 100 BOPD at that time. This Phase I factor would be in effect until a total of 3,232,000 barrels of oil has been produced from the reservoir.

P

Attached also is Figure 1, which is a revised net pay isopach of the Dakota "D" Zone. Based on this map, there are 168.52 oil plus equivalent gas acre-feet underlying your tract. Based on this volume, your Phase II Participation would be .727353%. Table 2 is a tabulation of revised tract participations.

Y

Tenneco asks that you give consideration to our proposal and notify us of your decision by September 15, 1972. Your final inclusion into the Unit is contingent upon an 80% compliance of the current working interest owners and the approval of the United States Geological Survey, and the New Mexico Oil Conservation Commission.

If you have any questions, please contact me.

Yours very truly,

TENNECO OIL COMPANY

Original Signed
R. A. WILLIFORD

R. A. Williford
District Production Manager

WEB/lj

cc: USGS - Roswell
NMOCC - Aztec and Santa Fe
All Working Interest Owners

PHASE I

PARTICIPATION FACTORS

Tract	Expanded Case (New)		Existing Case		
	Prod	Frac	Prod	Frac	Fractional Change
1	0	---	---	---	---
2	0	---	---	---	---
3	0	---	---	---	---
4	200	.08233841	200	.08972634	-.00738793
5	100	.04116921	100	.04486317	-.00369396
6	187	.07698641	187	.08389411	-.00690770
7	200	.08233841	200	.08972634	-.00738793
8	200	.08233841	200	.08972634	-.00738793
9	200	.08233841	200	.08972634	-.00738793
10	0	---	---	---	---
11A	200	.08233841	200	.08972633	-.00738792
11B	742	.30547550	742	.33288469	-.02740919
12	200	.08233841	200	.08972634	-.00738793
13	100	.04116921	---	---	+.04116921
14	100	.04116921	---	---	+.04116921
15	0	---	---	---	---
Total	2429	1.00000000	2229	1.00000000	0

TABLE I (CON'T)
OPERATOR SUMMARY
PHASE I

	<u>Revised</u>	<u>Existing</u>	<u>Difference</u>
Gil Oil	.08233841	.08972634	-.00738793
Beard Oil	.09263071	.10094213	-.00831142
John Beard	.03087690	.03364738	-.00277048
Tesoro	.08233841	.04486317	+.03747524
Tenneco	.67064636	.73082098	-.06017462
Kennedy	.04116921	0	+.04115921
Total	<u>1.00000000</u>	<u>1.00000000</u>	<u>0</u>

TABLE II
Comparison of Tract Participation, New and Existing
Lone Pine Dakota "D" Unit
7/20/72

Tract Number	New Oil & Eg Gas Ac-ft	New Fraction	Existing Oil & Eg Gas AF	Existing Fraction	2 - 4 Ac-ft Change	3 - 5 Fraction Change
1	47.12	.00203376	47.12	.00209102	0	-.00005726
2	13.63	.00058829	13.63	.0060485	0	-.00001656
3	41.21	.00177867	41.21	.00182875	0	-.00005008
4	1950.39	.08418120	1588.57	.07049505	361.82	.01368615
5	279.43	.01206054	362.87	.01610288	-83.44	.00404234
6	3629.07	.15646242	3625.07	.16086753	0	-.00440521
7	3566.55	.15393663	3566.55	.15827072	0	-.00433409
8	592.66	.02557992	592.66	.02630013	0	-.00072021
9	2651.67	.11444930	2651.67	.11767162	0	-.00322232
10	47.27	.00204023	36.78	.00163216	10.49	.00040807
11A	2473.97	.10677955	2403.61	.10666361	70.36	.00011594
11B	6527.91	.28175251	6527.91	.28968528	0	-.00793277
12	1076.84	.04647772	1076.84	.04778630	0	-.00130858
13	168.52	.00727353	0	0	168.52	.00727353
14	93.60	.00403989	0	0	93.60	.00403989
15	13.11	.0056584	0	0	13.11	.0056584
Total	23168.95	1.00000000	22534.49	1.00000000	634.46	

TABLE II (CON't)
OPERATOR SUMMARY
PHASE II

	<u>New</u>	<u>Existing</u>	<u>Difference</u>
Gil Oil	.11450965	.11767162	-.00316197
Beard Oil	.07222962	.06494845	+.00728117
John Beard	.02406044	.02164948	+.00241096
Tesoro	.02931898	.02552531	+.00379367
Tenneco	.75260778	.77020514	-.01759736
Kennedy	.00727353	---	+.00727353
 Total	 1.0000000	 1.00000000	 0

June 2, 1972

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

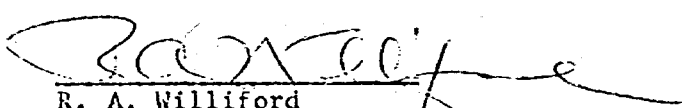
RE: Base Map Showing Unit Well Numbers
Lone Pine Dakota "D" Unit
McKinley County, New Mexico

Gentlemen:

Attached for your information is a copy of the captioned base map.

Yours very truly,

TENNECO OIL COMPANY


R. A. Williford
District Production Manager

WEB/lj

Attachment

cc: Gil Oil
Tesoro
Beard Oil
John Beard
Emery Arnold, NMOCC, Aztec
A. L. Porter, NMOCC, Santa Fe
U. S. G. S., Roswell

TENNECO OIL COMPANY A Tenneco Company

SUITE 1200 • LINCOLN TOWER BUILDING • DENVER, COLORADO 80203



RECEIVED
JUN 5 1972
OIL CONSERVATION COMM.
Santa Fe

June 2, 1972

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

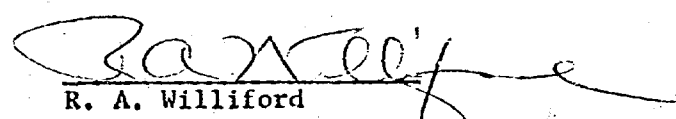
RE: Base Map Showing Unit Well Numbers
Lone Pine Dakota "D" Unit
McKinley County, New Mexico

Gentlemen:

Attached for your information is a copy of the captioned base map.

Yours very truly,

TENNECO OIL COMPANY


R. A. Williford
District Production Manager

WEB/lj

Attachment

cc: Gil Oil
Tesoro
Beard Oil
John Beard
Emery Arnold, NMOCC, Aztec
A. L. Porter, NMOCC, Santa Fe
U. S. G. S., Roswell



United States Department of the Interior

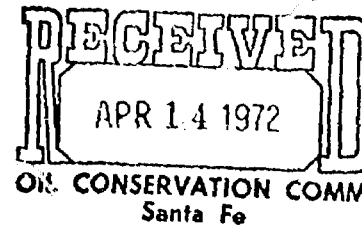
Drawer 1857
Roswell, New Mexico 88201

April 13, 1972

Tenneco Oil Company
P.O. Box 2410
Denver, Colorado 80201

Attention: Mr. M. K. Mendenhall

Gentlemen:



We acknowledge receipt on April 10 of the following described ratifications and joinders to the Lone Pine Dakota "D" unit agreement No. 14-08-0001-11596, McKinley County, New Mexico:

<u>Basic Royalty Owner</u>	<u>Overriding Royalty Owner</u>	<u>Tract No.</u>	<u>Execution Date</u>
	Joe W. Cherry	1	March 20, 1972
	F. D. McCallon	1	March 3, 1972
	James C. Vandiver	1	March 14, 1972
	T. G. Whigham	1	March 13, 1972
	Amoco Production Company	4, 5	March 17, 1972
Bessie R. Etsitty		6	March 11, 1972
	J. C. Templeton	7	March 14, 1972
Robert Jones		8	March 27, 1972

The joinders listed above are considered as original joinders to the unit agreement which was effective April 1, 1972. All tracts were originally qualified for participation as of the effective date of the unit agreement. Copies of the joinders are being distributed to the appropriate Federal and Indian offices and all copies surplus to our needs are returned herewith. We are returning joinders by E. E. Wilson, C. L. Whigham and Joe B. Burr, Jr., which we are unable to identify from Exhibit B as owning interests in the unit. We have previously accepted a joinder by Santa Fe Pacific Railroad Company. It is requested that you furnish appropriate notice of these actions to all other interested principals.

Sincerely yours,

(ORIG. SENT BY AIR)

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (w/cy joinders)
BIA, Window Rock (w/cy joinders)
BLM, Santa Fe (w/cy joinders)
Farmington (w/cy joinders)
✓ NMOCC, Santa Fe (ltr. only)
Accounts (ltr. only)

JWillock:ds



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

February 28, 1972

Mr. Booker Kelly
White, Koch, Kelly & McCarthy
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 4664
Order No. R-4262
Applicant:
Tenneco Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC x

Other Unit Division - State Land Office

Case 4665

Leud 2-16-72

Rec. 2-16-72

Grant Dennis ^{approval} that Lone Pine
unit agreement as requested.

Thur. O. H. E.



United States Department of the Interior

GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

FEB 11 1972

Tenneco Oil Company
Suite 1200
Lincoln Tower Building
Denver, Colorado 80203

Attention: Mr. R. A. Williford

Gentlemen:

Your application of September 20, 1971, filed with the Regional Oil and Gas Supervisor, Roswell, New Mexico, requests the designation of the Lone Pine Dakota "D" unit area embracing 2,598.30 acres in McKinley County, New Mexico, as logically subject to unitized operations.

You estimate that pressure maintenance operations will result in the recovery of 2,650,000 barrels of additional oil. The land outlined on your plat marked "Exhibit A, Lone Pine Dakota 'D' unit, McKinley County, New Mexico," is hereby designated as a logical area for pressure maintenance operations. The area proposed for unitization, embraces 211.10 acres of Federal land (8.12 percent), 958.72 acres of Navajo allotted land (36.90 percent), and 1,428.48 acres of privately owned land (54.98 percent).

The form of unit agreement you proposed will be acceptable if modified as indicated in accordance with the marked copy of said agreement returned herewith. Marked copies of the proposed unit agreement are being distributed to the appropriate offices of the Bureau of Indian Affairs and the Geological Survey.

In the absence of any other type of land requiring special provisions or any objections not now apparent, a duly executed agreement conformed to the agreement enclosed herewith and approved by the Area Director, Bureau of Indian Affairs, Navajo Area Office, and the appropriate State officials will be approved if submitted in acceptable status within a reasonable period of time. However, the right is reserved to deny approval of any executed agreement which, in our opinion, does not have the full commitment of sufficient lands to afford effective control of operations within the unit area.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION

EXHIBIT NO. 3

FILE NO. 4664265

Tenneco

" Please include the latest status of all acreage when the executed agreement is submitted for final approval by the Bureau of Indian Affairs and the Geological Survey. The format of the sample exhibits attached to the 1968 reprint of the standard form should be followed closely in the preparation of Exhibits A and B. Since Navajo Indian lands are included in the proposed unit area, a minimum of eight copies of the executed agreement should be submitted with your request for final approval.

Sincerely yours,

W. A. Riddington

Acting Director

Enclosure

(Case 4661 continued)

levelled in accordance with Commission Rules and Regulations.

CASE 4662: Application of Amoco Production Company for an exception to Order No. R-111-A, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules set forth in Order No. R-111-A to permit its Bate Federal Well No. 2 located in Unit L of Section 26, Township 19 South, Range 33 East, Lea County, New Mexico, to be drilled in such a manner as to eliminate running a salt protection string provided the production string is cemented to the surface.

CASE 4663: Application of Amoco Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for its Malco "A" Federal Well No. 3 located 1650 feet from the North line and 1653 feet from the West line of Section 11, Township 18 South, Range 27 East, undesignated Pennsylvanian-Morrow Pool, Eddy County, New Mexico, with the W/2 of said Section 11 to be dedicated to the well.

CASE 4664: Application of Tenneco Oil Company for a unit agreement, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Lone Pine Dakota "D" Unit Area comprising 2598 acres, more or less, of federal, fee and Indian lands in Township 17 North, Ranges 8 and 9 West, Lone Pine Dakota "D" Pool, McKinley County, New Mexico.

CASE 4665: Application of Tenneco Oil Company for a pressure maintenance project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot pressure maintenance project in the Lone Pine Dakota "D" Pool by the injection of gas and water into the Dakota "D" zone through five wells located in Sections 12 and 13 of Township 17 North, Range 9 West and Sections 7 and 19 of Township 17 North, Range 8 West, McKinley County, New Mexico. Applicant further seeks the designation of a project area and promulgation of rules for the project including a procedure whereby additional injection wells may be approved administratively.

WHITE,
KOCH, KELLY
&
McCARTHY

RECEIVED

JAN 27 1972

OIL CONSERVATION COMM.

January 25, 1972

46694 4665

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Tenneco Oil Company's Application for Unit Agree-
ment and Pressure Maintenance Project Lone Pine
Dakota "D" Unit, McKinley County, New Mexico

Dear Mr. Porter:

Enclosed find original and two copies of Tenneco's Appli-
cation for the Unit Agreement and Pressure Maintenance Project
covering the Lone Pine Dakota "D" Unit, McKinley County, New
Mexico. I have previously orally requested that this matter
be set for hearing February 16, 1972.

I also enclose for your review a plat showing the pro-
posed Unit and Pressure Maintenance Project. Attached to
the Application is a copy of the Unit Agreement and copy of
the Special Rules and Regulations which Tenneco seeks.

The land involved is Federal, Indian and Fee and I have
been informed that preliminary approval has been given by the
U.S.G.S. and the Bureau of Indian Affairs. We expect to have
written approval prior to the February 16th hearing.

If you need any further information in this matter, please
advise.

Sincerely,

W. B. KELLY

WBK:cc

Enclosures

cc: Mr. Millard F. Carr
Mr. R. A. Williford

DOCKET MAILED

Date 2/3/72

L.C. White
Sumner S. Koch
William Booker Kelly
John F. McCarthy, Jr.
Kenneth Bateman
Benjamin Phillips
William W. Gilbert (Of Counsel)

Attorneys and Counselors at Law 220 Otero Street, Santa Fe, New Mexico 87501 Box 787 Telephone (505) 982-4374

RUTH ROSS
P. O. BOX 464
SANTA FE, NEW MEXICO 87501

February 16, 1972

N. M. Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

SUBJECT: IN THE CASE OF 4664 and 4665 - TENNECO OIL COMPANY'S
APPLICATION FOR UNIT AGREEMENT AND PRESSURE MAINTENANCE
PROJECT IN THE LONE PINE DAKOTA "D" UNIT, McKinley County,
New Mexico

Gentlemen:

As the original lessee and as an overriding royalty owner of Federal Oil and Gas Lease NM 0556382, designated as Tract No. 3 on Exhibit "B" to this Unit Agreement, covering 79.44 Acres in T. 17 N., R. 8 W., Sec. 19: Lot 1, NE $\frac{1}{4}$ NW $\frac{1}{4}$, I wish to present my request to the Commission and to Tenneco for favorable consideration to be included in some manner for participation or compensation in both Phase I and Phase II of the Project.

Let me point out how Tenneco will benefit from the inclusion of this acreage as brought out in the Special Rules and Regulations for the Pressure Maintenance Project should their request be approved by the Commission:

According to the information on file, Tenneco's Lone Pine No. 1 well, located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec. 19, T. 17 N., R. 8 W., is to be a water injection well. In the Special Rules for the Project, it is stated that the project area shall comprise all of the area included within the Lone Pine Dakota "D" Unit and that the allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut-in, curtailed, or USED AS INJECTION WELLS. Further it states that the allowable assigned to each INJECTION WELL IN THE PROJECT SHALL BE THE TOP UNIT ALLOWABLE FOR THE LONE PINE DAKOTA "D" POOL. Right from the beginning this acreage benefits the entire Unit from the allowable given, even though the well itself is not producing oil.

Under Section 12 of the Unit Agreement - Plan of Operations - it is stated: "It is recognized and agreed by the parties hereto that all of the land subject to this Agreement is reasonably proved to be productive of Unitized Substances...." It is also stated in the Unit Agreement that drilling, producing or secondary recovery operations performed upon any Tract of Unitized Land shall be accepted and deemed to be performed upon and for the benefit of each and every Tract of Unitized Land.

Could this Tract No. 3 be deleted from the Unit for some reason, I request that the Unit Operator take appropriate and adequate measures to prevent leakage, either of oil and gas or other hydrocarbon substances, under the lease involved in this Tract.

N. M. Oil Conservation Commission
Page 2
February 16, 1972

Therefore, in summary, I respectfully request favorable consideration by the Commission and Tenneco Oil Company of my request to receive a fair and equitable share for my overriding royalty based on the benefits Tenneco will immediately receive in the form of top allowable for the injection well, into which water under pressure is to be injected, for the benefit of all involved. This share should be paid immediately, as the others are paid their share, instead of waiting for some indefinite time in the future under Phase II, at which time my Tract No. 3 is scheduled to participate, according to verbal information supplied by Tenneco's representative.

Sincerely,

Ruth Ross

Ruth Ross

cc U. S. Geological Survey,
Roswell, New Mexico
cc Tenneco Oil Company

RUTH ROSS
P. O. BOX 464
SANTA FE, NEW MEXICO 87501

February 16, 1972

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Should this Tract No. 3 be deleted from the Unit for some reason, I request that the Unit Operator take appropriate and adequate measures to prevent drainage, either of oil and gas or other hydrocarbon substances, under the acreage involved in this Tract.

N. M. Oil Conservation Commission
Page 2
February 16, 1972

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Sincerely,

Ruth Ross

Ruth Ross

cc U. S. Geological Survey,
Roswell, New Mexico
cc Tenneco Oil Company

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

Case NO. 4664 & 65

Filed by Tenneco

Date _____

UNIT AGREEMENT



FOR THE DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
MCKINLEY COUNTY, NEW MEXICO

THIS AGREEMENT, entered into as of the _____ day of _____, 1971, by and between the parties subscribing, ratifying or consenting hereto, and herein referred to as "parties hereto".

WITNESSETH: That,

WHEREAS, the parties hereto are the owners of working, royalty, or other oil or gas interests in the Unit Area subject to this Agreement; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by law (chap. 72, Laws of 1935, as amended by Chap. 193, Laws of 1937, Chap. 166, Laws of 1941, and Chap. 168, Laws of 1949, Chap. 65, Art. 3, Sec. 14, N.M.S., 1953 anno) to approve this Agreement, and the conservation provisions hereof, and

WHEREAS, the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as amended, 30 U.S.C. Sections 181 et seq., authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with others in collectively adopting and operating a cooperative or unit plan of development or operation of any oil or gas pool, field or like area, or any part thereof for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, the rules and regulations governing the leasing of allotted Indian lands for oil and gas promulgated by the Secretary of the Interior (25 CFR Part 172) under and pursuant to the Allotted Land Leasing Act of March 3, 1909, 35 Stat. 783, 25 U.S.C. Sec. 396 and the oil and gas leases covering said allotted Indian lands provide for the commitment of such leases to a cooperative or unit plan of development or operation; and

WHEREAS, the parties hereto hold sufficient interests in the Lone Pine Dakota "D" Unit Area covering the land hereinafter described to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to enable institution and consummation of secondary recovery operations, conserve natural resources, prevent waste and secure the other benefits obtainable through development and operation of the area subject to this Agreement under the terms, conditions, and limitations herein set forth;

NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this Agreement their respective interests in the Unitized Formation of the below-defined Unit Area, and agree severally among themselves as follows:

SECTION 1. ENABLING ACT AND REGULATIONS. The Act of March 3, 1909, and the Mineral Leasing Act of February 25, 1920, as amended, *supra*, and all valid pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder and valid pertinent and reasonable regulations hereafter issued thereunder are accepted and made a part of this Agreement as to Federal and ^{Admitted} Indian lands, provided such regulations are not inconsistent with the terms of this Agreement; and, as to Non-Federal and Non-Indian lands, the oil and gas operating regulations in effect as of the effective date hereof governing drilling and producing operations, not inconsistent with the terms hereof or the laws of the State in which the Non-Federal and Non-Indian land is located, are hereby accepted and made a part of this Agreement.

SECTION 2. UNIT AREA AND DEFINITIONS. The area described in Exhibit "B" and depicted on Exhibit "A" attached hereto is hereby designated and recognized as constituting the Unit Area, containing 2, 598.30 acres, more or less, in McKinley County, New Mexico. Said land is described as follows:

Township 17 North, Range 8 West, N.M.P.M.

Section 7: Lots 3 & 4, E/2 SW/4, S/2 NE/4, SE/4
Section 8: SW/4
Section 17: NW/4, NW/4 SW/4
Section 18: Lots 1, 2, 3 & 4, E/2 W/2, E/2 (All)
Section 19: Lot 1, NE/4 NW/4

Township 17 North, Range 9 West, N.M.P.M.

Section 12: Lots 7 & 8, SW/4 SE/4
Section 13: Lots 1, 2, 3, 4, 5, 6, 7 & 8,
W/2 E/2, W/2 (All)
Section 14: NE/4 NE/4
Section 24: Lots 1, 2, 3 & 4, W/2 NE/4,
E/2 NW/4, NW/4 NW/4

For the purpose of this Agreement, the following terms and expressions as used herein shall mean:

(a) "Commission" is defined as the Oil Conservation Commission of the State of New Mexico.

(b) "Commissioner" is defined as the Commissioner of Public Lands of the State of New Mexico.

(c) "Director" is defined as the Director of the United States Geological Survey.

(d) "Indian Commissioner" is defined as the Commissioner of Indian Affairs, or his duly authorized delegate.

(e) "Secretary" is defined as the Secretary of the Interior of the United States of America, or his duly authorized delegate.

(f) "Department" is defined as the Department of the Interior of the United States of America.

(g) "Supervisor" is defined as the Oil and Gas Supervisor of the United States Geological Survey.

(h) "Area Director" is defined as the Area Director for the Bureau of Indian Affairs.

(i) "Unitized Formation" is defined as that stratigraphic interval commonly known as the Dakota "D" Zone and more specifically defined as that interval occurring between 2780 feet and 2872 feet

sub-surface in Tenneco Oil Company's Don ne pah Well No. 1 located 820 feet from the North line and 500 feet from the West line of Section 18, Township 17 North, Range 8 West, N.M.P.M., as recorded on the Gamma Ray - Formation Density Log of said well dated 6-3-70.

(j) "Unitized Substances" is defined as and shall mean all oil, gas, gaseous substances, sulphur contained in gas, condensate, and all associated and constituent liquid or liquefiable hydrocarbons produced from the Unitized Formation of the Unitized Land.

(k) "Tract" is defined as each parcel of land described as such and given a Tract number in Exhibit "B". :

(l) "Tract Participation" is defined as that percentage of Unitized Substances allocated to a Tract under this Agreement.

(m) "Unit Participation," of each Working Interest Owner, is defined as the sum of the percentages obtained by multiplying such Working Interest Owner's fractional Working Interest in each tract by the Tract Participation of such Tract.

(n) "Working Interest" is defined as the right to search for^{and} produce and acquire Unitized Substances whether held as an incident of ownership of mineral fee simple title, under an oil and gas lease, operating agreement or otherwise held.

(o) "Working Interest Owner" is defined as and shall mean any party hereto owning a Working Interest, including a carried working interest owner, whether by virtue of a lease, operating agreement, fee title or otherwise, whose interest is chargeable with and obligated to pay or bear, either in cash or out of production, or otherwise, all or a portion of the cost of drilling, developing, producing and operating the Unitized Formation. Any interest in Unitized Substances which is a Working Interest as of the date the owner thereof executes or ratifies this Agreement shall thereafter be treated as a Working Interest for all purposes

of this Agreement. The owner of oil and gas rights that are free of lease, or other instrument conveying the Working Interest to another, shall be regarded as a Working Interest Owner to the extent of seven-eighths (7/8) of his interest in Unitized Substances, and as a Royalty Owner with respect to his remaining one-eighth (1/8) interest therein.

(o) "Royalty Interest" or "Royalty" is defined as any interest other than a Working Interest in or right to receive a portion of the Unitized Substances or the proceeds thereof and includes the royalty interest reserved by the lessor by an oil and gas lease and any overriding royalty interest, oil payment interest, or any other payment or burden which does not carry with it the right to search for and produce Unitized Substances. "Basic Royalty Interest" is defined as the royalty interest reserved by the lessor by an oil and gas lease.

(p) "Lessee of Record" is defined as the holder of record title under a United States Oil and Gas Lease, ~~or an Oil and Gas Mining Lease on Allotted Indian Lands.~~

(q) "Royalty Owner" is defined as and shall mean the owner of a Royalty Interest.

(r) "Unit Operating Agreement" is defined as and shall mean any agreement or agreements (whether one or more) entered into (separately or collectively) by and between the Unit Operator and the Working Interest Owners as provided in Section 9, infra, and shall be styled "Unit Operating Agreement, Lone Pine Dakota 'D' Unit, McKinley County, New Mexico".

(s) "Tract Current Oil Production" is defined as the oil allowable, expressed in barrels of 42 U. S. gallons, assigned to the Unitized Formation in each Tract during the month of May, 1971, as determined and tabulated in the Table of Participating Parameters of the Engineering and Geologic Report for the Lone Pine Dakota "D" Field dated September 1, 1971.

(t) "Unit Area Current Oil Production" is defined as the sum of "Tract Current Oil Production" for all Tracts within the Unit Area.

(u) "Tract Oil Plus Equivalent Gas Acre-Feet" is defined as the net oil acre-feet plus the net gas acre-feet, converted to an oil equivalent, ^{acre-feet}

in each Tract as determined and tabulated in the Table of Participation Parameters of the Engineering and Geologic Report for the Lone Pine Dakota "D" Field dated September 1, 1971.

(v) "Unit Area Oil Plus Equivalent Gas Acre-Feet" is defined as the sum of "Tract Oil Plus Equivalent Gas Acre-Feet" for all Tracts within the Unit Area.

(w) "Phase I" means the period of time beginning as of 7:00 A.M. on the effective date hereof and continuing until the first day of the month following such time as the total cumulative number of barrels of oil produced, saved and removed from the Unitized Formation underlying all Tracts described in the original Exhibit "B" equals 3,180,000 barrels, as determined from the official production reports filed with the Commission. The total Phase I barrels to be produced will be the difference between 3,180,000 barrels and the cumulative oil production from the Unitized Formation underlying all Tracts described in the original Exhibit "B" on the effective date hereof. The cumulative oil production on the effective date hereof will be determined from the official production reports filed with the Commission.

(*) "Phase II" means the remainder of the term of this agreement after the end of Phase I, and will begin at 7:00 A.M. on the first day of the month, following the date on which the cumulative number of barrels of oil produced from the Unitized Formation underlying all Tracts in the Unit Area totals 3,180,000 barrels.

SECTION 3. EXHIBITS. Exhibit "A" attached hereto is a map showing the Unit Area and, to the extent known to the Unit Operator, the boundaries and identity of Tracts and leases in said Unit Area. Exhibit "B" attached hereto is a schedule showing, to the extent known to the Unit Operator, the acreage comprising each Tract, percentage ownership of each Working Interest Owner in each Tract, and the percentage and ownership of the Record Title in each Tract in the Unit Area, together with the Royalty Interests in each Tract and the ownership thereof. Exhibit "C" attached hereto is a schedule showing the tract number and the Tract

assuming that all Tracts are committed to this Agreement.
Participation of each Tract in the Unit Area. Nothing herein or in said schedules or map shall be construed as a representation by any party hereto as to the ownership of any interest other than such interest or interests as are shown in said map or schedule as owned by such party.

Exhibits "A", "B" and "C" shall be revised by the Unit Operator whenever changes render such revisions necessary or when requested by the Supervisor, and not less than six copies thereof shall be filed with the Supervisor.

SECTION 4. EXPANSION. The above-described Unit Area may when practicable be expanded to include therein any additional Tract or Tracts regarded as reasonably necessary or advisable for the purposes of this Agreement. Such expansion shall be effected in the following manner:

(a) ~~The Working Interest Owner or Owners of a Tract or Tracts desiring to commit such Tract or Tracts hereto shall file an application therefor with Unit Operator requesting such admission.~~

(b) Unit Operator shall circulate a notice to each Working Interest Owner of the proposed expansion, setting out the basis for admission, the proposed Tract Participation to be assigned to each such Tract, and other pertinent data. After negotiation (at Working Interest Owners' meeting or otherwise), if 80 per cent of the Working Interest Owners (on the basis of Unit Participation at that time) have agreed to such ^{additional} commitment of such Tract or Tracts, then Unit Operator shall, after preliminary concurrence by the Director ^{and the Area Director}:

(2) (1) Prepare a notice or proposed expansion describing the contemplated changes in the boundaries of the Unit Area, the reason therefor, the basis for admission of the additional Tract or Tracts, the Tract Participation to be assigned each such additional Tract, the revised Tract Participation for all other Tracts and the effective date thereof; and

^b
(2) Furnish copies of said notice to the Supervisor, each Working Interest Owner, lessee, and lessor whose interests are affected (mailing copy of such notice to the last known address of each such Working Interest Owner), advising such parties that thirty (30) days will be allowed for submission to the Unit Operator of any objection to such proposed expansion; and

- 2
(b) File, upon the expiration of said thirty (30) days period, as set out in (a) immediately above, the following:
- (i) Evidence as to mailing said notice of expansion;
 - (ii) An application for such expansion in sufficient numbers for appropriate approval and distribution; and (iii) An instrument containing the appropriate joinders in compliance with the participation requirements of Section 14 (Tracts Qualified for Participation) and Section 33 (Non-Joinder and Subsequent Joinder), infra; and (iv) A copy of all objections received.
- Such objections shall be filed with the Unit Operator's response to*

The expansion shall, after due consideration of all pertinent information and upon approval by the Supervisor and, if appropriate, the Commission, become effective as of the date prescribed in the notice thereof. The revised Tract Participation of the respective Tracts included within the Unit Area prior to such enlargement shall remain the same ratio one to another.

SECTION 5. UNITIZED LAND AND UNITIZED SUBSTANCES. All land committed to this Agreement as to the Unitized Formation shall constitute land referred to herein as "Unitized Land" or "land subject to this Agreement." Unitized Substances are defined in Section 2 (b) of this Agreement.

SECTION 6. UNIT OPERATOR. Tenneco Oil Company, a Delaware corporation, is hereby designated as Unit Operator, and by signing this instrument as Unit Operator it agrees and consents to accept the duties and obligations of Unit Operator for the operation, development and production of Unitized Substances as herein provided. Whenever reference is made herein to Unit Operator, such reference means the Unit Operator acting in that capacity and not as an owner of interests in Unitized Substances; and the term "Working Interest Owner" when used herein shall include or refer to Unit Operator as the owner of a Working Interest when such an interest is owned by it.

SECTION 7. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of six (6) months after written notice of intention to

resign has been given by Unit Operator to all Working Interest Owners, and the Supervisor and until all unit wells are placed in a satisfactory condition for suspension, abandonment, ~~or operations~~, whichever is required by the Supervisor and the Commission, unless a new Unit Operator shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by 75 per cent of the committed Working Interest Owners (on the basis of then current Unit Participation) exclusive of the Working Interest Owner who is the Unit Operator. Such removal shall be effective upon notice thereof to the Supervisor.

In all such instances of effective resignation or removal, until a successor to Unit Operator is selected and approved as hereinafter provided, the Working Interest Owners shall be jointly responsible for the performance of the duties of the Unit Operator and shall, not later than thirty (30) days before such resignation or removal becomes effective, appoint a ^{Common Unit} ~~Unit Manager~~ to represent them in any action to be taken hereunder.

The resignation or removal of Unit Operator under this Agreement shall not terminate its right, title or interest as the owner of a Working Interest or other interest in Unitized Substances, but, upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all wells, equipment, books, and records, materials, appurtenances and any other assets, used in conducting the Unit operations and owned by the Working Interest Owners (including any and all data and information which it might have gained or assembled by reason of its operation of the Unitized Land) to the new duly qualified successor Unit Operator or to the Unit Manager if no such new Unit Operator has been elected, to be used for the purpose of conducting Unit Operations hereunder. Nothing herein contained shall be construed to relieve or discharge any Unit Operator who resigns or is removed hereunder for any liability or duties accruing or performable by it prior to the effective date of such resignation or removal.

SECTION 8. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender its resignation as Unit Operator or shall be removed as hereinabove provided, the Working Interest Owners shall select a successor Unit Operator by a majority vote of the Working Interest Owners (on the basis of then current Unit Participation), provided no Working Interest Owner who has been removed as Unit Operator may vote for self-succession. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator; and (b) the selection shall have been approved by the Supervisor and, if appropriate, the Commission. If no Successor Unit Operator is selected and qualified as herein provided, the Supervisor at his election, may declare this Agreement terminated.

SECTION 9. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. Costs and expenses incurred by Unit Operator in conducting Unit operations hereunder shall be paid, apportioned among, and borne by the Working Interest Owners in accordance with the Unit Operating Agreement; however, no such Unit Operating Agreement shall be deemed either to modify any of the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Agreement, and in case of any inconsistency or conflict between this Agreement and the Unit Operating Agreement, this Agreement shall prevail. Three true copies of any Unit Operating Agreement executed pursuant to this section shall be filed with the Supervisor prior to approval of this Agreement.

SECTION 10. RIGHTS AND OBLIGATIONS OF UNIT OPERATOR. Except as otherwise specifically provided herein, the exclusive right, privilege and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing, storing, allocating and distributing the Unitized Substances are hereby delegated to and shall be exercised by the Unit Operator as herein provided. Upon request, acceptable evidence of title to said rights shall be deposited with said Unit Operator and, together with this Agreement, shall constitute and define the rights, privileges, and obligations of Unit Operator. Nothing

herein, however, shall be construed to transfer title to any land or to any lease or operating agreement, it being understood that under this Agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

SECTION 11. USE OF SURFACE.

(a) The parties hereto, to the extent of their rights and interests, hereby grant to Working Interest Owners the right to use as much of the surface of the land within the Unit Area as may reasonably be necessary for Unit operations.

(b) Working Interest Owners shall have free use of brine or water or both from the Unit Area for Unit operations, except water from any well, lake, pond, or irrigation ditch of a Surface Owner; provided, however, no allotted Indian water rights are granted hereby other than those granted in leases or agreements heretofore executed, but said rights may be combined and utilized for Unit operations hereunder.

(c) Working Interest Owners shall pay the owner for damages to ^{and/or loss of livestock,} growing crops, timber, fences, improvements, and structures on the Unit Area that result from Unit operations.

SECTION 12. PLAN OF OPERATIONS. It is recognized and agreed by the parties hereto that all of the land subject to this Agreement is reasonably proved to be productive of Unitized Substances and that the object and purpose of this Agreement is to formulate and to put into effect a secondary recovery project in order to effect the greatest economic recovery of Unitized Substances, prevent waste and conserve natural resources, consistent with good engineering practices expected of a prudent operator. The parties hereto agree that the Unit Operator may, subject to the consent to a plan of operation by the Working Interest Owners and approval by the Supervisor, inject into the Unitized Formation, through any well or wells completed therein, brine, water, air, gas, oil and any one or more other substances whether produced from the Unitized Land or not, and that the location of input wells and the rates of injection

therein shall be governed by standards of good engineering practices and conservation methods. After commencement of secondary operations, Unit Operator shall furnish the Supervisor monthly injection and production reports for each well in the Unit. The Working Interest Owners and the Supervisor shall be furnished periodic reports on the progress of the plan of operation and any revisions or changes thereto, provided, however, that any major revisions of the plan of operation involving a basic deviation from the initial plan of operation shall be subject to the approval of the Working Interest Owners and the Supervisor.

An acceptable
A plan of operation shall be filed with the Supervisor concurrently with the filing of this Unit Agreement for final approval. Said plan of operation and all revisions thereof shall be as complete and adequate as the Supervisor may determine to be necessary for timely operation consistent herewith. Upon approval of this Agreement and the aforementioned plan ^{id operation} by the Supervisor, said plan, and all subsequently approved plans shall constitute the operating obligations of the Unit Operator under this Agreement for the period specified therein. Thereafter, from time to time before the expiration of any existing plan, the Unit Operator shall submit for like approval a plan for an additional specified period of operation. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation.

Notwithstanding anything to the contrary herein contained, should the Unit Operator fail to commence operations for the secondary recovery of Unitized Substances from the Unit Area within one (1) year after the effective date of this Agreement, or any extension thereof approved by the Supervisor, this Agreement shall terminate automatically as of the date of default. After such operations are commenced, Unit Operator shall carry on such operations as would a reasonably prudent operator under the same or similar circumstances.

SECTION 13. TRACT PARTICIPATION. In Exhibit "C" attached hereto there are listed and numbered the various Tracts within the Unit Area, and

set forth opposite each Tract is the Tract Participation of each Tract in the Unit Area during Phase I and Phase II, as hereinabove defined which have been calculated in accordance with the following formulas:

Phase I
Tract Participation
Percentage = (Equals):

Tract Current Oil Production
100 x (Times) _____
Unit Area Current Oil Production

Phase II
Tract Participation
Percentage = (Equals):

Tract Oil Plus Equivalent Gas Acre-Feet
100 x (Times) _____
Unit Area Oil Plus Equivalent Gas Acre-Feet

In the event less than all of the Tracts within the Unit Area are qualified for unit participation as of the effective date hereof, Unit Operator shall, as soon as practicable after said effective date, prepare a revised Exhibit "C" setting forth the qualified Tracts and showing the revised Tract Participation of each qualified Tract, which Tract Participation shall be calculated and determined by using the factors and formulas set forth above, but applying the same only to the qualified Tracts. Unit Operator shall promptly file copies of such revised Exhibit "C" with the Supervisor and, upon approval of the Supervisor the revised Exhibit "C" shall be effective as of the effective date of this Agreement, and shall thereafter govern the allocation of all Unitized Substances, subject, however, to any further revision or revisions of Exhibit "C" in accordance with the provisions hereof.

SECTION 14. TRACTS QUALIFIED FOR PARTICIPATION. As the objective of this Unit Agreement is to have the lands in the Unit Area operated and entitled to participation under the terms hereof, it is agreed that, notwithstanding anything herein to the contrary, no joinder shall be considered a commitment to this Unit Agreement unless the Tract involved is qualified for participation under this Section 14.

(1) On and after the effective date hereof the Tracts qualified to participate hereunder shall be the Tracts that qualify as follows:

(a) Each tract as to which Working Interest Owners owning 100% of the Working Interest have become parties to this Agreement and as to which (i) Royalty Owners under oil and gas leases on fee land owning seventy-five per cent (75%) or more of the Basic Royalty Interest; or (ii) Lessees of Record owning seventy-five per cent (75%) or more of the record title interest, whichever is applicable, have become parties to this Agreement.

(b) Each Tract as to which Working Interest Owners owning one hundred per cent (100%) of the Working Interest have become parties to this Agreement and as to which Royalty Owners under oil and gas leases on fee land owning less than seventy-five per cent (75%) of the Basic Royalty Interest or Lessees of Record owning less than seventy-five per cent (75%) of the record title interest have become parties to this Agreement and as to which (i) all Working Interest Owners in such Tract have joined in a request for the inclusion of such Tract in Unit participation on the basis of such commitment, and as to which (ii) seventy-five per cent (75%) of the combined voting interests of Working Interest Owners in all Tracts that meet the requirements of Section 14(1) (a) have voted in favor of the acceptance of such Tract as qualified for participation.

For the purpose of this Section 14(1) (b), the voting interest of a Working Interest Owner shall be equal to the ratio that its then current Unit Participation attributable to Tracts that qualify under Section 14(1) (a) bears to the total then current Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Section 14(1) (a).

(c) Each Tract as to which Working Interest Owners owning less than one hundred per cent (100%) of the Working Interest have become parties to this Agreement regardless of the percentage

of Royalty or Record interests commitment hereto, and as to which (i) the Working Interest Owner who operates the Tract and all of the other Working Interest Owners in such Tract who have become parties to this Agreement have joined in a request for inclusion of such Tract in Unit Participation and have executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Working Interest Owners in the Unit Area, their successors and assigns, against all claims and demands that may be made by the owners of Working Interests in such Tract who are not parties to this Agreement, and which arise out of the acceptance of the Tract as qualified for Unit Participation; and as to which (ii) seventy-five per cent (75%) of the combined voting interest of Working Interest Owners in all Tracts that meet the requirements of Section 14(1) (a) and 14(1) (b) have voted in favor of the qualification of such Tract and acceptance of the indemnity agreement.

For the purpose of this Section 14(1) (c), the voting interest of each Working Interest Owner shall be equal to the ratio that its then current Unit Participation attributable to Tracts that qualify under Section 14(1) (a) and 14(1) (b) bears to the total then current Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Section 14(1) (a) and 14(1) (b). Upon the qualification of such a Tract under this Unit Agreement, the Unit Participation that would have been attributed to the non-subscribing owners of the Working Interest in such Tract, had they become parties to this Agreement and the Unit Operating Agreement, shall be attributed to the Working Interest Owners in such Tract who have become parties to such agreements, in proportion to their respective Working Interest in the Tract, and said recipients shall be responsible for payment of all claims and demands made by the non-subscribing interest owners.

SECTION 15. ALLOCATION OF UNITIZED SUBSTANCES. All Unitized Substances produced and saved (less any part of such Unitized Substances

used in conformity with good operating practices on Unitized Land for drilling, operating, camp, and other production or development purposes and for pressure maintenance or which is unavoidably lost) shall be apportioned among and allocated to each of the qualified Tracts in accordance with the then effective Schedule of Participation in Exhibit "C". The amount of Unitized Substances allocated to each Tract (regardless of whether it be more or less than the amount of the actual production of Unitized Substances from the well or wells, if any, on such Tract) shall be deemed for all intents, uses and purposes, to have been produced from such Tract.

The Unitized Substances allocated to each Tract shall be distributed among, or accounted for to, the parties executing, consenting to or ratifying this Agreement entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions, as they would have participated and shared in the production from such Tracts, or in the proceeds thereof, had this Agreement not been entered into, and with the same legal force and effect.

No Tract committed to this Agreement and qualified for participation as above provided shall be subsequently excluded from participation hereunder on account of depletion of Unitized Substances; and nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the qualification of any Tract.

If the Working Interest or the Royalty Interest in any Tract are or become divided with respect to separate parcels or portions of such Tract and owned severally by different persons, the Unitized Substances allocated to such Tract shall, in the absence of a recordable instrument executed by all owners and furnished to Unit Operator fixing the divisions of ownership, be divided among the owners of interest in such parcels or portions in proportion to the number of surface acres in each.

The Unitized Substances allocated to each Tract shall be delivered in kind to the respective Working Interest Owners and parties entitled

thereto by virtue of the ownership of oil and gas rights therein. Each Working Interest Owner and the parties entitled thereto shall have the continuing right to receive such production in kind at a common point within the Unit Area and to sell or dispose of the same as it sees fit. Each such party shall have the right to construct, maintain and operate all necessary facilities for that purpose on Unitized Land, provided the same are so constructed, maintained and operated as not to interfere with operations carried on pursuant hereto. Subject to Section 16 (Royalty Settlement) hereof, any extra expenditure incurred by the Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the party receiving the same in kind.

In the event any party hereto shall fail to take or otherwise adequately dispose of its proportionate share of the Unitized Substances, Unit Operator, in order to avoid curtailing Unit operations, may sell or otherwise dispose of such production to itself or others on a day-to-day basis at not less than the prevailing market price in the area for like production; and the account of such party shall be charged therewith as having received such production. ^{Subject to Section 16 (Royalty Settlement) hereof,} the net proceeds, if any, of the Unitized Substances so disposed of by Unit Operator shall be paid to the party entitled thereto; provided, however, Unit Operator shall not make a sale into interstate commerce of any Working Interest Owner's share of gas production without first giving such Working Interest Owner sixty (60) days' notice of such intended sale.

If, after the effective date of this Agreement, there is any Tract or Tracts that are subsequently committed hereto, as provided in Section 4 (Expansion), Section 14 (Tracts Qualified for Participation), and Section 33 (Non-Joinder and Subsequent Joinder) hereof, or if any Tract is excluded from the Unit Agreement as provided for in Section 32 (Loss of Title), the schedule of participation as shown in the current Exhibit "C" shall be revised by the Unit Operator and the revised schedule, upon approval by the Supervisor shall govern the allocation of Unitized Substances on and after the effective date thereof until the effective date of a new schedule so approved. The Tract Participations of all Tracts

participating prior to any such revision shall remain in the same ratio one to the other.

SECTION 16. ROYALTY SETTLEMENT. The United States of America and all Basic Royalty Owners who, under an existing lease or contract, are entitled to take in kind a share of the Unitized Substances produced from any Tract unitized hereunder, shall continue to be entitled to such right to take in kind their share of the Unitized Substances allocated to such Tract, and Unit Operator shall make deliveries of such Royalty share taken in conformity with the applicable contracts, laws and regulations. Settlement for Royalty Interest not taken in kind shall be made by Working Interest Owners responsible therefor under existing contracts, laws and regulations, on or before the last day of each month for Unitized Substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any Royalty due under their leases, except that such Royalty shall be computed in accordance with the terms of this Unit Agreement.

If gas obtained from lands not subject to this Agreement is introduced into the Unitized Formation for use in repressuring, stimulation or production or increasing ultimate recovery in conformity with a plan approved by the Supervisor, a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the Unitized Formation, royalty-free, ^{insofar as unit operations are concerned} as to dry gas but not as to the products extracted therefrom; provided such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor, and provided further that such right of withdrawal shall terminate as of the effective date of termination of the Unit Agreement.

Royalty due the United States and Basic Royalty Owners under Allotted Indian Leases shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all Unitized Substances on the basis of the amount thereof allocated to unitized

specified in the respective leases, or as may be authorized
Federal and Indian land as provided herein at the rates as may be authorized
by law or regulation; provided that, for leases on which royalty rate
depends on the daily average production per well, said average production
shall be determined in accordance with the operating regulations as though
the Unitized Land were a single consolidated lease.

Each Royalty Owner (other than the United States of America or
Basic Royalty Owners under Allotted Indian Leases) that executes this
Agreement represents that it is the owner of a Royalty Interest in Tract
or Tracts within the Unit Area as its interest appears in Exhibit "B" attached
hereto. Subject to Section 32 hereof, if any Royalty Interest in a
Tract or Tracts should be lost by title failure or otherwise, in whole or
in part, during the term of this Agreement, then the Royalty Interest of
the party representing himself to be the owner thereof shall be reduced pro-
portionately and the interest of all parties in the affected Tract or
Tracts shall be adjusted accordingly.

SECTION 17. RENTAL SETTLEMENT. Rentals or minimum royalties
due on leases committed hereto shall be paid by Working Interest Owners
responsible therefor under existing contracts, laws and regulations,
provided that nothing herein contained shall operate to relieve the lessees
of any land from their respective lease obligations for the payment of
any rental or minimum royalty in lieu thereof due under their leases.
Rental or minimum royalty for lands of the United States of America and
Allotted Indian Lands subject to this Agreement shall be paid at the rate
specified in the respective leases from the United States of America and the
Indians, unless rental or minimum royalty is waived, suspended, or reduced
by law or by approval of the Secretary or his duly authorized representative.

SECTION 18. CONSERVATION. Operations hereunder and production
of Unitized Substances shall be conducted to provide for the most
economical and efficient recovery of said substances without waste, as
defined by or pursuant to Federal and State laws and regulations.

SECTION 19. DRAINAGE. The Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from Unitized Land by wells on land not subject to this Agreement.

SECTION 20. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions and provisions of all leases, subleases and other contracts relating to exploration, drilling, development or operation for oil or gas on lands committed to this Agreement are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect; and the parties hereto hereby consent that the Secretary shall, and by his approval hereof, or by the approval hereof by his duly authorized representatives, hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of Federal and Indian leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this Agreement.

Without limiting the generality of the foregoing, all leases, subleases and contracts are particularly modified in accordance with the following:

- (1) The development and operation of lands subject to this Agreement under the terms hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part or separately owned tract subject to this Agreement, regardless of whether there is any development of any particular part or Tract of the Unit Area, notwithstanding anything to the contrary in any lease, operating agreement or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.
- (2) Drilling, producing or secondary recovery operations performed hereunder upon any Tract of Unitized Land shall be accepted and deemed to be performed upon and for the benefit of each and every Tract of Unitized Land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on land therein embraced.
- (3) Suspension of drilling or producing operations on all Unitized Land pursuant to direction or consent of the Supervisor or his duly authorized representatives shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every Tract of Unitized Land. A suspension of drilling or producing operations limited to specified lands shall be applicable only to such lands.
- (4) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil and gas which by its terms might expire prior to the termination of this Agreement

is hereby extended beyond any such term so provided therein, so that it shall be continued in full force and effect for and during the term of this Agreement.

- (5) The segregation of any Federal lease committed to this Agreement is governed by the following provision in the fourth paragraph of Section 17(j) of the Mineral Leasing Act, as amended by the Act of September 2, 1960 (74 Stat. 781-784);

"Any (federal) lease heretofore or hereafter committed to any such (unit) plan embracing lands that are in part within and in part outside of the area covered by any such plan shall be segregated into separate leases as to the lands committed and the lands not committed as of the effective date of unitization: Provided, however, that any such lease as to the non-unitized portion shall continue in force and effect for the term thereof but for not less than two years from the date of such segregation and so long thereafter as oil or gas is produced in paying quantities."

- (6) Any Indian lease committed hereto having only a part of its land within the Unit Area shall be segregated as to (a) the lands lying inside the Unit Area, as to all formations thereunder, and (b) the lands lying outside the Unit Area, as to all formations thereunder; and the provisions of such lease shall apply separately as to such segregated parts commencing as of the effective date of unitization.

SECTION 21. CORRECTION OF ERRORS. It is hereby agreed by all parties to this Agreement that Unit Operator is empowered to correct any mathematical or clerical errors which may exist in the pertinent exhibits to this Agreement; provided, however, that correction of any error other than mathematical or clerical shall be made by Unit Operator only after first having obtained approval of Working Interest Owners and the Supervisor.

SECTION 22. COVENANTS RUN WITH LAND. The covenants herein shall be construed to be covenants running with the land with respect to the interest of the parties hereto and their successors in interest until this Agreement terminates; and any grant, transfer or conveyance of interest in land or leases subject hereto shall be, and hereby is, conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee or other successor in interest. No assignment or transfer of any Working Interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, or acceptable photostatic or

certified copy, of the recorded instrument of transfer; and no assignment or transfer of any Royalty Interest subject hereto shall be binding upon the Working Interest Owner responsible therefor until the first day of the calendar month after said Working Interest Owner is furnished with the original, or acceptable photostatic or certified copy, of the recorded instrument of transfer.

SECTION 23. WAIVER OF RIGHT TO PARTITION. Each party hereto covenants that, during the existence of this Agreement, it will not resort to any action to partition the Unitized Land as to the Unitized Formation or the Unit Equipment, and to that extent waives the benefits of all laws authorizing such partition.

SECTION 24. EFFECTIVE DATE AND TERM. This Agreement shall become binding upon each party who executes or ratifies it as of the date of execution or ratification by such party and shall become effective as of 7:00 A.M. on the first day of the month next following the approval of this Agreement by the Director and the Indian Commissioner, or their duly authorized representatives.

Within thirty (30) days after the effective date of this Agreement Unit Operator shall file for record in the office of the County Clerk of McKinley County, New Mexico, a certificate to the effect that this Agreement has become effective according to its terms and stating further the effective date. Unit Operator shall also file for record in the same county records at least one counterpart of this Agreement.

The term of this Agreement shall be for and during the time that Unitized Substances are or can be produced in quantities sufficient to repay the cost of producing same from the Unitized Land and as long thereafter as drilling, reworking or other operations (including secondary recovery operations) are prosecuted thereon without cessation of more than ninety (90) consecutive days, and so long thereafter as Unitized Substances can be produced as aforesaid.

This Agreement may be terminated by Working Interest Owners owning 90% Unit Participation then current at any time for any other reason, with the approval of the Supervisor. Notice of any such termination shall be given by Unit Operator to all parties hereto.

Upon termination of this Agreement, the parties hereto shall be governed by the terms and provisions of the leases and contracts affecting the separate tracts.

If not otherwise covered by the leases unitized under this Agreement, Royalty Owners hereby grant Working Interest Owners a period of six (6) months after termination of this Agreement in which to salvage, sell, distribute or otherwise dispose of the personal property and facilities used in connection with Unit operations.

SECTION 25. RATE OF PROSPECTING, DEVELOPMENT AND PRODUCTION.

All production and the disposal thereof shall be in conformity with allocations and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State Statute. The Director is hereby vested with authority to alter or modify from time to time, in his discretion, the rate of prospecting and development and, within applicable limits made or fixed by the Commission with respect to lands under its jurisdiction, to alter or modify the quantity and rate of production under this Agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification; provided further that no such alteration or modification shall be effective as to any privately owned lands subject to this Agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

Powers in this Section vested in the Director shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than fifteen (15) days from notice.

SECTION 26. NON-DISCRIMINATION. In connection with the performance of work under this Agreement, the Operator agrees to comply with all of the provisions of Section 202, (1) to (7) inclusive, of Executive Order 11246 (30 F.R. 12319), which are hereby incorporated by reference in this Agreement.

The Unit Operator shall also comply with the terms and conditions of the Indian leases while engaged in operations thereon with respect to the employment of available Indian labor.

SECTION 27. APPEARANCES. Unit Operator shall, after notice to other parties affected, have the right to appear for or on behalf of any and all interests affected hereby before the Department, and the Commission, and to appeal from any order issued under the rules and regulations of the Department or the Commission, or to apply for relief from any of said rules and regulations or in any proceedings relative to operations before the Department or the Commission, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his or its own expense to be heard in any such proceeding.

SECTION 28. NOTICES. All demands, notices, objections or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if made in writing and personally delivered to the party or parties or sent by post-paid registered or certified mail addressed to such party or parties at their respective addresses set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such party or parties may have furnished in writing to the party sending the notice, demand or statement.

SECTION 29. NO WAIVER OF CERTAIN RIGHTS. Nothing contained in this Agreement shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the State wherein said Unitized Land is located, or rules or regulations issued thereunder in any way affecting

such party, or as a waiver by any such party of any right beyond his or its authority to waive.

SECTION 30. EQUIPMENT AND FACILITIES - FIXTURES ATTACHED TO REALTY. Each Working Interest Owner has heretofore placed and used on its Tract or Tracts committed to this Agreement various well and lease equipment and other property, equipment and facilities. It is also recognized that additional equipment and facilities may hereafter be placed and used upon the Unitized Land as now or hereafter constituted. Therefore, for all purposes of this Agreement, any and all such equipment shall be considered to be personal property and not fixtures attached to realty. Accordingly, said well and lease equipment and personal property is hereby severed from the mineral estates affected by this Agreement; and it is agreed that any and all such equipment and personal property shall be and remain personal property for all purposes.

SECTION 31. UNAVOIDABLE DELAY. All obligations under this Agreement requiring the Unit Operator to commence or continue secondary recovery operations or to operate on or produce Unitized Substances from any of the lands covered by this Agreement shall be suspended while, but only so long as, the Unit Operator, despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State or municipal law or agency, unavoidable accident, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

SECTION 32. LOSS OF TITLE. In the event title to any Tract of Unitized Land shall fail so as to render the Tract inoperable under this Agreement and the true owner cannot be induced to join this Unit Agreement, such Tract shall be automatically regarded as not committed hereto effective as of 7:00 A.M. on the first day of the calendar month in which such title failure is determined, and there shall be such re-adjustment

of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title as to any Royalty, Working Interest or other interest subject thereto, payment or delivery on account thereof may be withheld without liability or interest until the dispute is finally settled; provided that, as to Federal and Indian land or leases, no payments of funds due the United States of America and the Indians shall be withheld, but such funds shall be deposited as directed by the Supervisor, to be held as unearned money pending final settlement of the title dispute, and then applied as earned or returned in accordance with such final settlement.

Unit Operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

SECTION 33. NON-JOINDER AND SUBSEQUENT JOINDER. Joinder by any Non-Working Interest Owner, at any time, must be accompanied by appropriate joinder of the corresponding Working Interest Owner in order for the interest of such Royalty Owner to be regarded as effectively committed. Joinder to the Unit Agreement by a Working Interest Owner, at any time, must be accompanied by appropriate joinder to the Unit Operating Agreement in order for such interest to be regarded as committed to this Unit Agreement.

Any oil or gas interest in the Unitized Formation underlying the Unit Area not committed hereto prior to submission of this Agreement for final approval may thereafter be committed hereto upon compliance with the applicable provisions of this Section and of Section 14. (Tracts Qualified for Participation) hereof, at any time up to the effective date hereof on the same basis of participation as provided in said Section 14, by the owner or owners thereof subscribing, ratifying, or consenting in writing to this Agreement and, if the interest is a Working Interest, by the owner of such interest subscribing also to the Unit Operating Agreement.

It is understood and agreed, however, that on and after the effective date hereof the commitment of a Working Interest in any Tract

within the Unit Area, shall be upon such equitable terms as may be negotiated by Working Interest Owners and the Owners of such interest. Except as may be otherwise herein provided, subsequent joinder as to Tracts within the Unit Area shall be effective as of 7:00 A.M. of the first day of the month following the filing with the Supervisor of duly executed counterparts of any and all documents necessary to establish effective commitment of his interest to this Agreement unless objection to such joinder or basis of participation is made within sixty (60) days by the Supervisor.

SECTION 34. PRODUCTION AS OF THE EFFECTIVE DATE.

(a) Oil In Lease Tankage on Effective Date. Unit Operator shall make a proper and timely gauge of all lease and other tanks on Unitized Land in order to ascertain the amount of merchantable oil above the pipe line connection in such tanks as of 7:00 A.M. on the effective date hereof. All such oil which has then been produced legally shall be and remain the property of the parties entitled thereto the same as if the Unit had not been formed; and such parties shall promptly remove said oil from the Unitized Land. Any such oil not so removed shall be sold by Unit Operator for the account of parties entitled thereto, subject to the payment of all royalty and other payment under the terms and provisions of the Unit Agreement and any applicable lease or leases and other contracts. Any oil that is in excess of the prior allowable of the wells from which it was produced shall be regarded as Unitized Substances produced after the effective date hereof.

(b) Overproduction. If, as of the effective date hereof, any Tract of Unitized Land is overproduced with respect to the allowable of the wells on such Tract and the amount of overproduction has been sold or otherwise disposed of, such overproduction shall be regarded as a part of the Unitized Substances produced after the effective date hereof and shall be charged to such Tract as having been delivered to the parties entitled to Unitized Substances allocated to such Tract.

SECTION 35. COUNTERPARTS. This Agreement may be executed in any number of counterparts, no one of which needs to be executed by all parties, and may be ratified or consented to by separate instrument in writing specifically referring hereto, and shall be binding upon all those parties who have executed such a counterpart, ratification or consent hereto with the same force and effect as if all parties had signed the same document, and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above-described Unit Area.

SECTION 36. TAXES. Each party hereto shall, for its own account, render and pay its share of any taxes levied against or measured by the amount or value of the Unitized Substances produced from the Unitized Land; provided, however, that, if it is required or if it be determined that the Unit Operator or the several Working Interest Owners must pay or advance said taxes for the account of the parties hereto, it is hereby expressly agreed that the parties so paying or advancing said taxes shall be reimbursed therefor by the parties hereto, including Royalty Owners, who may be responsible for the taxes on their respective allocated share of said Unitized Substances. No taxes shall be charged to the United States or to any lessor who has a contract with a lessee which requires his lessee to pay such taxes.

SECTION 37. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the Working Interest Owners, nor any of them, shall be subject to any forfeiture, termination or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provisions thereof to the extent that the said Unit Operator or the Working Interest Owners, or any of them, are hindered, delayed or prevented from complying therewith by reason of failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained.

SECTION 38. NO PARTNERSHIP. It is expressly agreed that the relation of the parties hereto is that of independent contractors, and nothing contained in this Agreement, express or implied, or any operations conducted hereunder, shall create or be deemed to have created a partnership or association between the parties hereto or any of them.

SECTION 39. BORDER AGREEMENTS. Subject to the approval of the Supervisor, the Unit Operator, with concurrence of Working Interest Owners having a combined Unit Participation of 80%, may enter into a border-protection agreement or agreements with the Working Interest Owners of adjacent lands with respect to operations designed to increase ultimate recovery, conserve natural resources and protect the parties and their interests.

SECTION 40. LIMITATION OF APPROVALS. Notwithstanding anything herein contained to the contrary, if no State lands are committed to this Agreement, then no consents or approvals provided herein shall be required of the Commissioner, and it shall not be necessary to file any instrument hereunder with said officer unless and until State Lands are so committed to this Agreement; likewise, if no fee lands are committed to this Agreement, then no consents or approvals provided herein shall be required of the Commission; and it shall not be necessary to file any instrument hereunder with said office unless and until fee lands are so committed to this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and have set opposite their respective names the date of execution.

DATE: _____

TENNECO OIL COMPANY

ADDRESS:
Suite 1200
Lincoln Tower Building
Denver, Colorado 80203
Attention: District Production
Manager

By: _____
L. L. Parish
Attorney-In-Fact
UNIT OPERATOR AND WORKING INTEREST OWNER

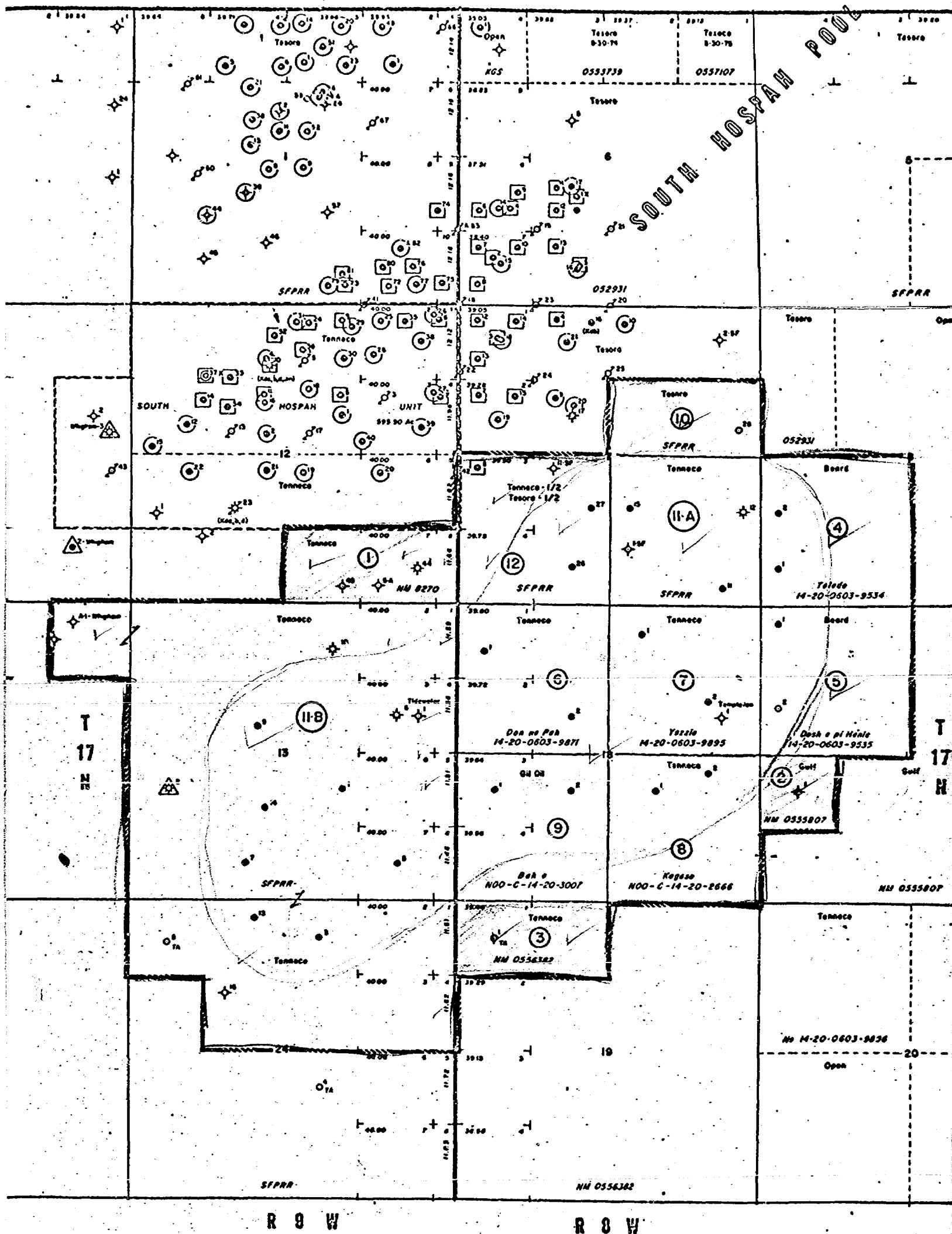
STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this _____
day of _____, 1971, by L. L. PARISH, Attorney-In-Fact of
TENNECO OIL COMPANY, a Delaware Corporation, on behalf of said corporation.

Witness my hand and official seal.

Notary Public

My Commission Expires:



R 9 W

R 10 W

LEGEND

- | | |
|--|---|
| ○ Location - Drig, Testing, or TA | □ Dual Well - Lower Hospah Oil & Dakota Gas |
| ● Oil Well - Dakota "D" Zone | △ Oil Well - Dakota "A" Zone |
| ✱ Gas Well - Dakota "D" Zone | △ Gas Well - Dakota "A" Zone |
| ⊙ Oil Well - Upper Hospah Zone | ● Oil Well - Dakota "B" Zone |
| ⊕ Water Injection Well - Upper Hospah Zone | ✱ Dry Hole |
| ⊖ Oil Well - Lower Hospah Zone | □ Unit Outline |
| ⊗ Dual Oil Well - Upper & Lower Hospah Zones | |

EXHIBIT A

TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO INC.

SOUTH HOSPAN AREA
McKINLEY COUNTY, NEW MEXICO

LONE PINE DAKOTA "D" UNIT

OUTLINE AND TRACT DESIGNATION

SCALE IN FEET
1000 500 0 500 1000
DENVER, COLORADO

EXHIBIT "B"
TO UNIT AGREEMENT FOR THE DEVELOPMENT AND
OPERATION OF THE LONG PINE DAKOTA "D" UNIT
MCKINNEY COUNTY, NEW MEXICO

Tract No.	Description of Land	Number of Acres	Serial No. and Expiration Date of Lease	Basic Royalty & Ownership Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
FEDERAL LAND							
1	T17N-R9W Sec. 12: Lots 7&8 SW/4SE/4	91.66	NM-8270 -HBP 3-31-75	U.S.A.: All	Tenneco Oil Co. Alpha L. Hotchkiss Dave M. Thomas, Jr. Claude C. Kennedy F. D. McCallion Carl C. Whigham, Sr. Thomas G. Whigham Jas. C. Vandiver Joe W. Cherry	2.0000 3.1250* 1.5625* 1.5625* 8.7500* 3.7500* 3.1250* 3.1250*	Tenneco Oil Co.: All
*production payment							
2	T17N-R9W Sec. 17: NW/4SW/4	40.00	NM-0555807 1-30-75 3/	U.S.A.: All	Gulf Oil Corp. (To be later determined)		Gulf Oil Corp.: All
3	T17N-R-8W Sec. 19: Lot 1, NE/4NW/4	79.44	NM-0556382 3-31-75	U.S.A.: All	Tenneco Oil Co. Ruth Ross Thomas H. Cunnelly	2.5000 2.5000	Tenneco Oil Co.: All
INDIAN LAND							
3 Federal Tracts 211.10 Acres							
4	T17N-R9W Sec. 8: SW/4	160.00	14-20-0603-9534 HBP- 12-12-75	Heirs of Allottee Joe Toledo: All	Beard Oil Co. Amoco Production Co. & J. M. Beard F. H. Haftman	.06250 .67450	Beard Oil Co.: 75.00 & J. M. Beard: 25.00
5	T17N-R9W Sec. 17: NW/4	160.00	14-20-0603-9535 HBP	Heirs of Allottee Dosh e pl Henio: All	Beard Oil Co. Amoco Production Co. & J. M. Beard F. H. Holtman	.06250 .67450	Beard Oil Co.: 75.00 & J. M. Beard: 25.00

12 10 75

6	T17N-R3W Sec. 18: Lots 1&2 E/2NW/4	159.52	14-20-063-9871 HBP	Heirs of Allottee Don ne pah: All	Tenneco Oil Co.: All	Claude C. Kennedy & Edna L. Kennedy Dr. Raymond E. Sitta & Geraldine Sitta J. D. Wilson & Dorothy Wilson	3.00000	Tenneco Oil Co.: All
7	T17N-R3W Sec. 18: NE/4	160.00	14-20-0603-9895	Heirs of Allottee Nah di yaz zie: All	Tenneco Oil Co.: All	J. C. Templeton	2.50000	Tenneco Oil Co.: All
8	T17N-R3W Sec. 18: SE/4	160.00	NOO-C-14-20-2666	Heirs of Allottee Kagoso: All	Tenneco Oil Co.: All	None		Tenneco Oil Co.: All
9	T17N-R3W Sec. 18: Lots 3&4 E/2SW/4	159.20	NOO-C-14-20-3007 HBP	Heirs of Allottee Bah e: All	Gilbert S. Maxwell, d/b/a Gil Oil & Gas Company	Alan J. Antwell H. W. Smith Donald G. Stevens Stanley B. Saiken Robert M. Williams Jim L. Sharp J. Burton Veteto Harold Schneider	40.67000 1.00000 3.33000 1.00000 1.00000 1.00000 1.00000 1.00000	Gilbert S. Maxwell, d/b/a Gil Oil & Gas Company: All

6 Indian Tracts 958.72 Acres

PATENTED LAND

10	T17N-R3W Sec. 7: S/2NE/4	80.00	HBP	Santa Fe Pacific Railroad Co.: All	Tesoro Pet- roleum Corp.	None		Tesoro Petroleum Corp.: All
11A	T17N-R3W Sec. 7: SE/4	160.00	HBP	Santa Fe Pacific Railroad Co.: All	Tenneco Oil Co. None			Tenneco Oil Co.: All
11B	T17N-R3W Sec. 13: Lots 1,2, 3,4,5,6,7 8, W/2E/2, W/2 (All) Sec. 14: NE/4NE/4 Sec. 24: Lots 1,2, 3&4, W/2NE/4 E/2NW/4, NW/4NW/4	1,029.25	HBP	Santa Fe Pacific Railroad Co.: All	Tenneco Oil Co. None			Tenneco Oil Co.: All

12 T17N-R8W
Sec. 7: Lots 3&4,
E/2SW/4

159.23

HBP

Santa Fe Pacific
Railroad Co.: All

Tenneco Oil Co. None
Tesoro Oil Corp.

Tenneco Oil Co.: 50.00
Tesoro Oil Corp.: 50.00

4 Patented Tracts 1,428.48 Acres

Total: 12 Tracts, 2,598.30 Acres in Entire Unit Area

EXHIBIT "C"

TO UNIT AGREEMENT FOR THE
DEVELOPMENT AND OPERATION
OF THE LONE PINE DAKOTA "D" UNIT
MCKINLEY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Tract Participation</u>	
	<u>Phase I (%)</u>	<u>Phase II (%)</u>
1	.000000	.209102
2	.000000	.060485
3	.000000	.182875
4	8.972634	7.049505
5	4.486317	1.610288
6	8.389411	16.086763
7	8.972634	15.827072
8	8.972634	2.630013
9	8.972634	11.767162
10	.000000	.163216
11A	8.972633	10.666361
11B	33.288469	28.968528
12	8.972634	4.778630
	100.000000	100.000000

RECEIVED
JAN 27 1972
OIL CONSERVATION COMM.

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF TENNECO OIL COMPANY
FOR THE APPROVAL OF THE LONE PINE
DAKOTA "D" UNIT AGREEMENT, MCKINLEY
COUNTY, NEW MEXICO, AND FOR A PRESSURE
MAINTENANCE PROJECT COVERING SAID UNIT
WITH SPECIAL UNIT RULES.

No. 4664

APPLICATION

Comes now Tenneco Oil Company by its Attorneys White, Koch,
Kelly & McCarthy, and in support of its Application states:

Application for Unit Agreement

1. That Tenneco Oil Company will be the operator of the proposed unit designated the Lone Pine Dakota "D" Unit comprising 2,598.30 Acres, more or less, of Federal, Indian and Fee land, located in Township 17 North, Range 8 West and Township 17 North, Range 9 West, N.M.P.M., McKinley County, New Mexico. The specific description of the unit is found in Section 2 on pages 2 and 3 of the proposed Unit Agreement, a copy of which is attached to this Application.

2. The unitized formation is defined as that stratigraphic interval commonly known as the Dakota "D" zone and more specifically defined as that interval occurring between 2780 feet and 2872 feet subsurface in Tenneco Oil Company's Don ne pah Well No. 1 located 820 feet from the North line and 500 feet from the West line of Section 18, Township 17 North, Range 8 West, N.M.P.M.

Application for Pressure Maintenance Project

3. Tenneco further seeks approval of a gas pressure maintenance project comprising all the area included within the Lone Pine Dakota "D" Unit.

4. The initial injection wells will be four gas injection wells and one water injection well located as follows:

Gas Injection Wells

Teneco Oil Company Hospah No. 44 located in the SE 1/4 of the SE 1/4 of Section 12, Township 17 North, Range 9 West, McKinley County.

Tenneco Oil Company Santa Fe and Pacific Railroad No. 6, located in the SE 1/4 of the NE 1/4 of Section 13, Township 17 North, Range 9 West, McKinley County.

Tenneco Oil Company Santa Fe Pacific Railroad No. 10 located in the NW 1/4 of the NE 1/4 of Section 13 Township 17 North, Range 9 West, McKinley County.

Tenneco Oil Company Santa Fe Pacific Railroad No. 12 located in the NE 1/4 of the SE 1/4 of Section 7, Township 17 North, Range 8 West, McKinley County.

Water Injection Well

Tenneco Oil Company Lone Pine No. 1 located in the NW 1/4 of the NW 1/4 of Section 19, Township 17 North, Range 8 West, McKinley County.

5. Applicant further seeks special rules governing the pressure maintenance project and attaches to this Application a copy of the proposed rules governing said unit and project.

WHEREFORE Tenneco Oil Company requests that after public hearing the Commission enter its Order granting said application.

WHITE, KOCH, KELLY & MCCARTHY

By JUB Kelly

DRAFT

GMH/dr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4664

Order No. R-4262

APPLICATION OF TENNECO OIL COMPANY
FOR APPROVAL OF THE LONE PINE DAKOTA "D"
UNIT AGREEMENT, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
February 16, 1962, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this _____ day of February, 1962, the Commission,
a quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Tenneco Oil Company,
seeks approval of the Lone Pine Dakota "D" Unit Agreement
covering 2598.30 acres, more or less, of ~~State~~ Federal, lands
and Fee and Indian
described as follows:

MCKINLEY COUNTY, NEW MEXICO

Township 17 North, Range 8 West, NM PM

Section 7: Lots 3 and 4, E 1/2 SW 1/4, S 1/2 NE 1/4, and SE 1/4

Section 8: SW 1/4

Section 17: NW 1/4 and NW 1/4 SW 1/4

Section 18: Lots 1, 2, 3 and 4, and E 1/2 W 1/2, and E 1/2 (all)

Section 19: Lot 1 and NE 1/4 NW 1/4

Township 17 North, Range 9 West, NM PM

Section 12: Lots 7 and 8 and SW 1/4 SE 1/4

Section 13: Lots 1, 2, 3, 4, 5, 6, 7, and 8, and W 1/2 E 1/2, and W 1/2 (all)

Section 14: NE 1/4 NE 1/4

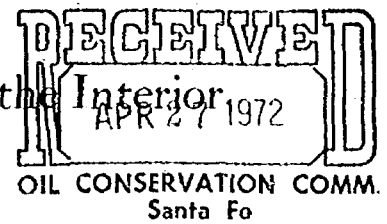
Section 24: Lots 1, 2, 3, and 4, and W 1/2 NE 1/4, E 1/2 NW 1/4, and
NW 1/4 NW 1/4



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201



April 25, 1972

Tenneco Oil Company
P.O. Box 2410
Denver, Colorado 80201

Attention: Mr. H. K. Mendenhall

Gentlemen:

We acknowledge receipt on April 20 of a ratification and joinder to the Lone Pine Dakota "B" unit agreement No. 14-08-0001-11596, McKinley County, New Mexico, by Tony Yazzie, a basic royalty owner under Navajo Allotted tract No. 7. Such commitment, which is considered to be an original joinder to the unit agreement, is being distributed to the appropriate Federal and Indian offices and all copies surplus to our needs are returned herewith. It is requested that you furnish appropriate notice of these actions to all interested principals.

Sincerely yours,

(ORIGINAL FILED IN 100-107000-1000)

N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy joinder)
BIA, Window Rock (w/cy joinder)
BLM, Santa Fe (w/cy joinder)
Farmington (w/cy joinder)
RROC Santa Fe (ltr only)
Accounts (ltr only)

Willock:ds

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4664
Order No. R-4262

APPLICATION OF TENNECO OIL
COMPANY FOR APPROVAL OF THE
LONE PINE DAKOTA "D" UNIT
AGREEMENT, MCKINLEY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
February 16, 1972, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this 28th day of February, 1972, the Commission,
a quorum being present, having considered the testimony, the
record, and the recommendations of the Examiner, and being fully
advised in the premises,

FINDS:

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

(2) That the applicant, Tenneco Oil Company, seeks
approval of the Lone Pine Dakota "D" Unit Agreement covering
2598.30 acres, more or less, of Federal, Fee and Indian lands
described as follows:

MCKINLEY COUNTY, NEW MEXICO

TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM

Section 7: Lots 3 and 4, E/2 SW/4, S/2 NE/4
and SE/4

Section 8: SW/4

Section 17: NW/4 and NW/4 SW/4

Section 18: Lots 1, 2, 3 and 4, E/2 W/2,
and E/2 (all)

Section 19: Lot 1 and NE/4 NW/4

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CASE NO. 4664

Order No. R-4262

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM

Section 12: Lots 7 and 8 and SW/4 SE/4

Section 13: Lots 1 through 8, W/2 E/2 and W/2 (all)

Section 14: NE/4 NE/4

Section 24: Lots 1, 2, 3, and 4, W/2 NE/4,
E/2 NW/4, and NW/4 NW/4

(3) That approval of the proposed unit agreement should promote the prevention of waste and the protection of correlative rights within the unit area.

IT IS THEREFORE ORDERED:

(1) That the Lone Pine Dakota "D" Unit Agreement is hereby approved.

(2) That the plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Commission to supervise and control operations for the exploration and development of any lands committed to the unit and production of oil or gas therefrom.

(3) That the unit operator shall file with the Commission an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) That this order shall become effective upon the approval of said unit agreement by the Director of the United States Geological Survey; that this order shall terminate ipso facto upon the termination of said unit agreement; and that the last unit operator shall notify the Commission immediately in writing of such termination.

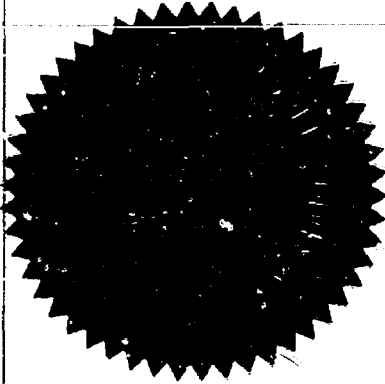
-3-

CASE NO. 4664
Order No. R-4262

(5) That 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.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



Bruce King
BRUCE KING, Chairman

Alex J. Armljo
ALEX J. ARMLJO, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

= Booker Kelly =

application of ~~Feta~~ Tenneco oil
company for a

Lone Pine Dakota "D" Unit

2598.30 Acres Fed., Indian
& Tenn

17 North 8 West

17 North 9 West

McKinley County -

Dakota "D" zone