

CASE 6113: IMPERO OIL COMPANY FOR  
APPROVAL OF ITS LONG RUN UNIT AGREEMENT, *Ray*  
EDEN COUNTY, NEW MEXICO

*1*

Case Number

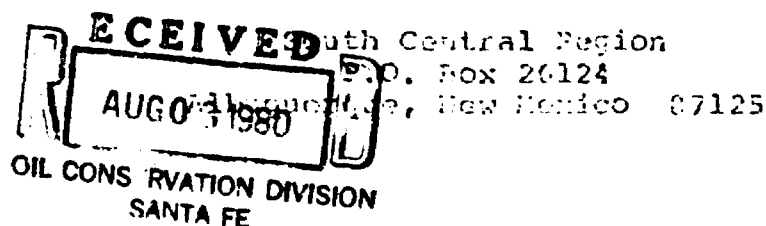
6118

Application

Transcripts.

Small Exhibits

ETC.



INEXCO Oil Company  
Attention: L. J. Tasconi  
1100 Hilam Building, Suite 1900  
Houston, Texas 77002

Gentlemen:

The Long Box unit agreement, Eddy County, New Mexico, was approved July 3, 1978 by the Acting Area Oil and Gas Supervisor, effective as of the date of approval. The term of such agreement is contingent upon the unit operator drilling one well at a time, allowing not more than six months time between the completion of one well and the beginning of the next, until a well capable of producing unitized substances in paying quantities is completed.

Our records show that the initial test well was completed on November 3, 1978 and no determination that the well was capable of producing unitized substances in paying quantities was made, thus making the second unit test well due to be commenced by May 3, 1979. Your request of April 26, 1979 for a six month extension of time in which to commence drilling the second unit test well under the terms of the agreement was approved by our letter of May 15, 1979, making the second unit test well due to be commenced before midnight on November 3, 1979.

Inasmuch as the second unit test well was not commenced, the Long Box unit agreement is considered to have terminated automatically as of November 3, 1979, pursuant to Section 9 of the unit agreement.

Sincerely yours,

Floyd L. Stelzer  
Acting Deputy Conservation Manager  
Oil and Gas

cc:  
BLM, Santa Fe  
Com. Pub. Lands, Santa Fe  
NMOCD, Santa Fe ✓  
DCM-RE  
Artesia

RECEIVED  
AUG 3 1980  
South Central Region  
OIL CONSERVATION DIVISION Box 26124  
SANTA FE, New Mexico 87125

1980

INEXCO Oil Company  
Attention: L. J. Tasconi  
1100 Hilam Building, Suite 1900  
Houston, Texas 77002

Gentlemen:

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Floyd L. Stelzer  
Acting Deputy Conservation Manager  
Oil and Gas

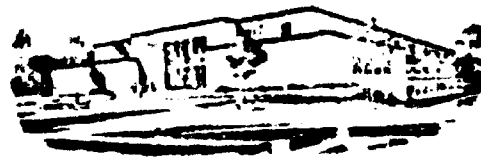
cc:  
BLM, Santa Fe  
Com. Pub. Lands, Santa Fe ✓  
NMOCD, Santa Fe  
DCM-RE  
Artesia



State of New Mexico



ALEX J. ARMIJO  
COMMISSIONER



Commissioner of Public Lands  
August 25, 1980

P. O. BOX 1148  
SANTA FE, NEW MEXICO 87501

Inexco Oil Company  
1100 Milam Building, Suite 1900  
Houston, Texas 77002

Re: Long Box Unit  
Eddy County, New Mexico  
TERMINATION

ATTENTION: Mr. L. J. Tacconi

Gentlemen:

This letter will serve to officially notify you that the Long Box Unit, Eddy County, New Mexico has this date been terminated by this office effective November 3, 1979, for failure to drill the second well which was due before midnight on November 3, 1979. The United States Geological Survey terminated the unit on August 7, 1980, effective as of November 3, 1979.

Please notify all interested parties of this action.

Very truly yours,

ALEX J. ARMIJO  
COMMISSIONER OF PUBLIC LANDS

BY:  
RAY D. GRAHAM, Director  
Oil and Gas Division  
AC 505-827-2748

AJA/RDG/s  
cc:

Read & Stevens, Inc.  
P. O. Box 1518  
Roswell, New Mexico 88201

OCD-Santa Fe, New Mexico  
USGS-Roswell, New Mexico  
USGS-Albuquerque, New Mexico

State of New Mexico



ALEX J. ARMIJO  
COMMISSIONER



Commissioner of Public Lands

January 25, 1979

P. O. Box 1148  
SANTA FE, NEW MEXICO

Inexco Oil Company  
1100 Milam Building-Suite 1900  
Houston, Texas 77002

Re: Long Box NM-139  
Long Box Unit  
Eddy County, New Mexico  
1979 PLAN OF DEVELOPMENT

ATTENTION: Mr. Tom L. Dodds

Gentlemen:

The Commissioner of Public Lands has this date approved your 1979 Plan of Development for the Long Box Unit, Eddy County, New Mexico. Such plan, proposes the drilling of wells No. 2 and 3. Our approval is subject to like approval by the New Mexico Oil Conservation Division. The USGS gave their approval January 5, 1979.

Enclosed is one approved copy for your files.

Please remit a Three (\$3.00) Dollar filing fee.

Very truly yours,

ALEX J. ARMIJO  
COMMISSIONER OF PUBLIC LANDS

BY:  
RAY D. GRAHAM, Director  
Oil and Gas Division

AJA/RDG/s  
encls.  
cc:

OCD-Santa Fe, New Mexico  
USGS-Roswell, New Mexico  
USGS-Albuquerque, New Mexico

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

February 5, 1979

Inexco Oil Company  
1100 Milan Building  
Suite 1900  
Houston, Texas 77002

Attention: Tom L. Dodds

Re: Case No. 6118  
Long Box Unit  
1979 Plan of Development

Gentlemen:

We hereby approve the 1979 Plan of Development for the Long Box Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

Two approved copies of the Plan of Development are returned herewith.

Yours very truly,

JOE D. RAMEY  
Director

JDR/LT/fd  
enc.

cc: U.S.G.S. - Roswell  
Commissioner of Public Lands

C  
O  
P  
Y



INEXCO OIL COMPANY

January 29, 1979

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

*No. 6118  
Approve*

Re: Long Box NM-139  
Long Box Federal Unit  
Order No. #R-5620  
Case No. #6118  
Eddy County, New Mexico

Gentlemen:

Attached please find three (3) copies of Inexco Oil Company's Plan of Development for 1979 for the above referenced federal unit. This Plan of Development was approved by the U.S.G.S. January 5, 1979 and was approved by the Commissioner of Public Lands January 25, 1979. Inexco Oil Company respectfully requests your approval of this Plan of Development.

If anything further is needed, please so advise.

Very truly yours,

INEXCO OIL COMPANY

*Tom L. Dodds*

Tom L. Dodds  
Area Landman

FEB 2 1979

TLD/vdu

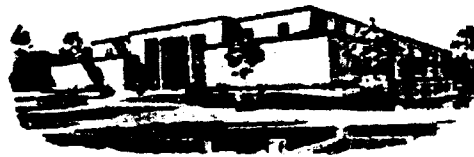
Enclosures

cc: Scotty Greenwald  
Inexco Oil Company

State of New Mexico



ALEX J. ARMIJO  
COMMISSIONER



Commissioner of Public Lands

January 25, 1979

P. O. Box 1148  
SANTA FE, NEW MEXICO

Inexco Oil Company  
1100 Milam Building-Suite 1900  
Houston, Texas 77002

Re: Long Box NM-139  
Long Box Unit  
Eddy County, New Mexico  
1979 PLAN OF DEVELOPMENT

ATTENTION: Mr. Tom L. Dodds

Gentlemen:

The Commissioner of Public Lands has this date approved your 1979 Plan of Development for the Long Box Unit, Eddy County, New Mexico. Such plan, proposes the drilling of wells No. 2 and 3. Our approval is subject to like approval by the New Mexico Oil Conservation Division. The USGS gave their approval January 5, 1979.

Enclosed is one approved copy for your files.

Please remit a Three (\$3.00) Dollar filing fee.

Very truly yours,

ALEX J. ARMIJO  
COMMISSIONER OF PUBLIC LANDS

BY: *Ray D. Graham*  
RAY D. GRAHAM, Director  
Oil and Gas Division

AJA/RDG/s  
encls.

cc: OCD-Santa Fe, New Mexico  
USGS-Roswell, New Mexico  
USGS-Albuquerque, New Mexico

RECEIVED  
JAN 29 1979  
LAND DEP'T.



United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Box 26124  
Albuquerque, New Mexico 87125

RECEIVED  
JAN 7 9 26 AM '79  
STATE LAND OFFICE  
SANTA FE, N. M.

JAN 15 1979

Inexco Oil Company  
Attention: Mr. Tom L. Dodds  
1100 Milam Building, Suite 1900  
Houston, Texas 77002

Gentlemen:

Two approved copies of your 1979 plan of development for the Long Box unit area, Eddy County, New Mexico, are enclosed. Such plan, proposing to drill wells No. 2 and 3 was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

*Jack Willock*

JACK WILLOCK  
ACTING Oil and Gas Supervisor, SRMA

Enclosures (2)

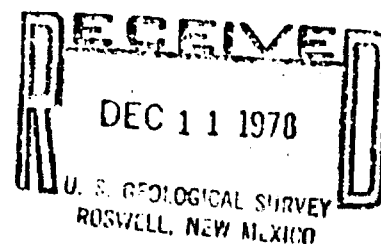
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RECEIVED

JAN 25 1979

December 8, 1978



United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Attn: Mr. J. A. Gillham

Re: Long Box NM-139  
Long Box Federal Unit  
Contract No. 14-08-0001-16906  
Plan of Development for 1979  
Eddy County, New Mexico

Gentlemen:

Inexco Oil Company, as Unit Operator for the Long Box Unit above referenced, hereby submits in quadruplicate for your approval, the Plan of Development for 1979.

SUMMARY OF OPERATIONS:

The Long Box Unit was approved July 3, 1978. The initial test well, the Long Box Unit #1, located 1980' FNL and 600' FEL (SE $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 30, T20S-R24E, was spudded July 30, 1978 and was drilled to a total depth of 9,375 feet. Four and one-half inch casing was cemented at 8,736 feet. The well was plugged back to 8,649 feet and the Atoka Formation was perforated from 8,574 to 8,587 feet and acidized with 2,500 gallons of 7 $\frac{1}{2}$ % HCl-MSR 100 acid with 1,000 scf of nitrogen per barrel. Four point production test was run as follows:

Test No.	FTP	Choke	FARO	BCPD	BWPD	Temp
1	2,390	6/64	824 mcf/d	0	0	82°
2	2,160	8/64	1054 mcf/d	0	0	86°
3	1,905	10/64	1278 mcf/d	0	0	90°
4	1,335	13/64	1527 mcf/d	0	0	92°

Absolute open flow was calculated to be 1849 mcf/d with shutin tubing pressure of 2900# psi. The Long Box Unit #1 was statistically completed as a "Shut-in Gas Well" November 10, 1978.

DEVELOPMENT PLANNED FOR 1979:

Inexco Oil Company, as Unit Operator, is currently seeking a sales market for the Long Box Unit #1 well and anticipate having a sales contract and commencement of sales early in 1979.

Planned and proposed development wells to be drilled in 1979 are the Long Box Unit #2 well to be located 1980' FWL and 660' FNL of Section 31, T20S-R24E and the Long Box Unit #3 well to be drilled 1980' FWL and 1980' FSL of Section 31, T20S-R24E.

Inexco Oil Company respectfully requests your approval of this Plan of Development for 1979.

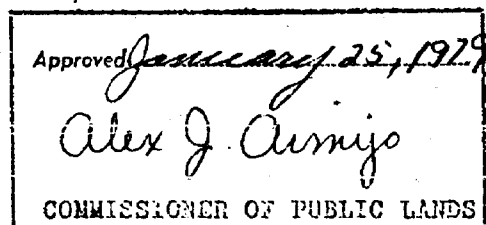
Very truly yours,

INEXCO OIL COMPANY

*Tom L. Dodds*

Tom L. Dodds  
Area Landman

TLD:jt



JAN 05 1979

APPROVED  
*Jack Wilson*  
ACTING Area Oil & Gas Supervisor  
U. S. Geological Survey

Subject to like approval by the  
appropriate state officials.

Approved *2/5* 19 *79*  
*John D. Amey*  
Director  
Oil Conservation Division  
Energy and Minerals Department

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FEB 1 1979  
U.S. GEOLOGICAL SURVEY  
WASHINGTON, D.C.





United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Box 26124  
Albuquerque, New Mexico 87125

JAN 11 1979

JAN 01 1979

Inexco Oil Company  
Attention: Mr. Tom L. Dodds  
1100 Milan Building, Suite 1900  
Houston, Texas 77002

No. 6118

Gentlemen:

Two approved copies of your 1979 plan of development for the Long Box unit area, Eddy County, New Mexico, are enclosed. Such plan, proposing to drill wells No. 2 and 3 was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

(ORIG. SGD.) JACK WILLOCK

Oil and Gas Supervisor, SRMA

Enclosures (2)

cc:  
NMOCD, Santa Fe (1tr. only)  
Com. Pub. Lands, Santa Fe (1tr. only)

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
January 4, 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Inexco Oil Company for a  
unit agreement, Eddy County, New Mexico.

CASE  
6118

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil  
Conservation Commission:

Lynn Teschendorf, Esq.  
Legal Counsel for the Commission  
State Land Office Building  
Santa Fe, New Mexico

For Inexco Oil Company:

Randolph M. Richardson, Esq.  
Attorney at Law  
J. P. White Building  
Roswell, New Mexico

sid morrish reporting service  
General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

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I N D E X

Page

M. L. FELDMAN

Direct Examination by Mr. Richardson

3

EXHIBIT INDEX

Offered    Admitted

Geological Report

5

13

Exhibit A, Regional Index Map

5

13

Exhibit B, Morrow Sandstone Isolith

5

13

Exhibit C, Structure Map

5

13

Exhibit D, Cross Section

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Exhibit E, Land Ownership Map

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Exhibit F, Well Cost Estimate

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Phone (505) 962-9212

1 MR. NUTTER: We will call Case Number 6118.

2 MS. TESCHENDORF: Case 6118, application of Inexco  
3 Oil Company for a unit agreement, Eddy County, New Mexico.

4 MR. RICHARDSON: Randolph M. Richardson, Roswell,  
5 New Mexico, appearing on behalf of the applicant, Inexco  
6 Oil Company. I have one witness to be sworn.

7 (THEREUPON, the witness was duly sworn.)

8 MR. RICHARDSON: A copy of the unit agreement has  
9 already been furnished to the Commission and I have just  
10 handed you a geological report consisting of Exhibits A  
11 through F which have been marked Exhibits A through F,  
12 together with a supplemental letter addressed to the USGS,  
13 dated December 16th, 1977.

14  
15 M. L. FELDMAN

16 called as a witness, having been first duly sworn, was  
17 examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. RICHARDSON:

20 Q Mr. Feldman, would you please state your name and  
21 present occupation?

22 A My name is M. L. Feldman, I'm a geologist for  
23 Inexco Oil Company in Houston, Texas.

24 Q Would you please give your educational and profes-  
25 sional background which would enable you to testify as an

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1 expert in this case?

2 A I'm a 1949 graduate of the University of Oklahoma  
3 with a Bachelor of Science in Geology. I have participated  
4 in numerous continuing education schools sponsored by AAPG  
5 and numerous other schools sponsored by Exxon Research in  
6 Houston, Texas. I'm a past chairman of the West Texas  
7 Geological Society Stratigraphic Committee, a member of the  
8 Houston Geological Society Stratigraphic Committee, a past  
9 member of the SEPM, a present member of the Houston Geological  
10 Society, West Texas Geological Society and the AAPG and I have  
11 had some eighteen years of experience in the Permian Basin  
12 as a subsurface exploration geologist for Exxon and Inexco.

13 Q Are you familiar with the Long Box Unit Area and  
14 the matters contained in the application for approval of  
15 the unit agreement?

16 A Yes, I am.

17 MR. RICHARDSON: Are the qualifications acceptable?

18 MR. NUTTER: Yes, they are.

19 Q (Mr. Richardson continuing.) Is the form of the  
20 unit agreement that prescribed by Federal regulations?

21 A Yes.

22 Q Has the unit area been designated by the United  
23 States Geological Survey as an area logically suitable for  
24 development under a unit plan of development?

25 A They have so preliminarily designated it, however,

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1 the final designation is under consideration in Denver at this  
2 time.

3 Q Could you please tell the Commission the total  
4 number of acres within the unit area and the number and  
5 percentage of Federal, State and patented lands?

6 A The total is thirty-eight oh eight point one four  
7 acres. There is no fee land. The Federal land consists of  
8 three thousand one hundred and sixty-eight point one four  
9 acres, which comprises eighty-three point one nine percent  
10 of the unit area. The State of New Mexico lands cover six  
11 hundred and forty acres, which equals sixteen point eight one  
12 percent of the unit area.

13 Q Could you please tell the Commission the township  
14 and range in which this unit is located and the approximate  
15 location with reference to the nearest town?

16 A The location of the proposed test is in the south-  
17 east quarter of the northeast quarter of Section 30, 20 South,  
18 24 East, Eddy County, New Mexico. It is about twenty-four  
19 miles to the northwest of Carlsbad, as I recall.

20 Q Would you please refer to the geological report  
21 which has been handed to the Examiner, marked as Exhibits A  
22 through F? Was this report prepared by you or others directly  
23 under your control and supervision?

24 A It was prepared by me.

25 Q Would you please briefly review the report, referring

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1 to the maps by name and indicating the significance of such  
2 maps and cross sections?

3 A Exhibit A is the Regional Index Map. It shows the  
4 proposed unit and proposed test and this unit and test are  
5 located along what I believe to be in alongshore bar parallel  
6 to the Pedernal land mass, a Pre-Cambrian positive or  
7 cratonic area. It is also parallel to a feature parallel to  
8 the flank of this feature, the Artesia-Vacuum Arch, a Permian  
9 arch which parallels the flank of this cratonic area.

10 I consider the Morrow to be primarily the Morrow  
11 sand zones to be primarily alongshore bar parallel to their  
12 source which I believe to have been the Pedernal land mass,  
13 a zone of siliceous igneous rocks and I believe the tectonic  
14 changes in the area since Morrow deposition have been con-  
15 trolled primarily in this area by the Huapache Monocline  
16 which is one flank of a vertical block uplift marked by a  
17 greater than three thousand foot fault which is, at least  
18 locally, an overturned normal fault.

19 Q Go ahead with the other exhibits.

20 A All right. Briefly I would like to point out a  
21 slight error on this Regional Index Map. Down in the south  
22 center part is one of our little discoveries which is in-  
23 advertently marked as Loofer Draw and it should be Loafer  
24 Draw, L-o-a instead of L-o-o.

25 There is a typographical mistake on page three that

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1 I would like to point out. In the second paragraph, first  
2 sentence, it says, Exhibit C is a Structure Map contoured on  
3 top of a persistent dense limestone bed located near the top  
4 "to" the Morrow and it should be "of" the Morrow clastic  
5 formation.

6 Exhibit B is a Morrow Sandstone Isolith map based on  
7 forty-five API gamma ray units and it shows this elongate  
8 alongshore bar with a northeast/southwest trend to it, flanked  
9 by a number of Morrow tests and indicating that we can expect  
10 over sixty feet of net Morrow sandstone at our proposed  
11 location in Section 30, 20 South, 24 East.

12 MR. NUTTER: And it would seem that the boundaries  
13 of the unit area have been selected to control this structure,  
14 is that correct?

15 A That is correct and we think that the Morrow sand-  
16 stone is entrapped by facies changes shelf-ward into dense  
17 lagoonal facies, facies changes basin-ward into silty, dense  
18 basinal facies and it is also controlled along strike by  
19 changes into surge channels, dense clastics similar to those  
20 being deposited along the Gulf Coast in surge channels today.

21 And also in this case the unit was restricted to  
22 the west of Section 21 partly on the basis of a small fault  
23 that we will look at on a later exhibit.

24 Q (Mr. Richardson continuing.) That Section 21, you  
25 mentioned that is also the purpose of the letter to the USGS,

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1 is that not correct?

2 A As a result of some questions by Ray Noble of the  
3 USGS a supplement was prepared for this report, a brief  
4 supplement, and he questioned why the west half of Section  
5 21 was not included in the unit and I said because of two  
6 factors, because of a fault which appears to be present to  
7 the south in the Indian Basin Field and which crosses a well  
8 in the west half of Section 21 which may be a straight north/  
9 south fault so that most of 21 is on the down thrown side of  
10 the fault and because most of the west half of 21 would be  
11 structurally low and the east half of 21 has a shut-in gas  
12 well which we think is on the edge of a surge channel and  
13 it will probably be marginal to sub-marginal as far as its  
14 commercial value is concerned.

15 He also asked why we had omitted the east half of  
16 Section 32, 20 South, 24 East, and this was omitted because  
17 of the low structural position of this well and because the  
18 Morrow in this well calculates from the electric and sonic  
19 logs to be water wet.

20 MR. NUTTER: Now there are two wells that have  
21 been drilled in the south half of Section 32, Mr. Feldman,  
22 and both of them are apparently dry?

23 A Yes.

24 MR. NUTTER: Did they both penetrate the Morrow  
25 formation?

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Phone (505) 982-9212

1 A They both penetrated the Morrow and the well in  
2 the west half, the Mark Production 1-C State, had gas to the  
3 surface in the Morrow but a very thin section. It also had  
4 a million four cubic feet of gas from the Cisco from fractured  
5 zones. We feel that there is a good chance that most of this  
6 half section will be productive from both the Morrow and/or  
7 the Cisco.

8 MR. NUTTER: What about the one in the east half,  
9 did it produce anything at all?

10 A The one in the east half had a gas show in the  
11 Cisco, it was drilled tight to the Morrow. I have recently  
12 found a mud log on this well that shows that they did test  
13 some free gas in the Morrow, however, it is structurally  
14 low and our log analysis indicates that testing after frac  
15 or acid in this well would yield water and it has very low  
16 resistivity in the zones that are porous.

17 Exhibit C is a structure map on top of the Morrow  
18 B limestone, a persistent marker in Eddy County, throughout  
19 Eddy County, near the top of the Morrow clastic formation  
20 and below the Morrow limestone formation. This dense  
21 limestone was used to contour a feature which is faulted.  
22 These faults are controlled partially to the north and south  
23 of this map, mostly controlled by faulting down in the  
24 Indian Basin Field which seems to separate and segregate  
25 the production into the various fault blocks. These faults,

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Phone (505) 962-9212

1 we feel, are related to the Huapache Monocline, to the  
2 Middle Wolfcamp in faulting occurring on the flank of this  
3 vertical block uplift and these are parallel to that feature.  
4 They are post the sand bar deposition that was shown on  
5 Exhibit B and tend to segment it some but basically this unit  
6 covers the entire entity of this particular sand bar as  
7 separated by a surge channel to the northeast and a surge  
8 channel to the southwest.

9 Exhibit D is a stratigraphic cross section, both  
10 structural and stratigraphic cross section and this is a  
11 northwest/southeast cross section, crossing the northeast  
12 end of this sand bar.

13 MR. NUTTER: What is the index well there on the  
14 left side of that, Mr. Feldman?

15 A This is the Carper Drilling Monsanto Federal NA  
16 No. 1.

17 MR. NUTTER: What is the location of that, please?

18 A This well is in the northwest northwest corner of  
19 Section 21, 20 South, 24 East.

20 This well crossed a small fault in the Morrow  
21 limestone section with the omission of about fifty feet of  
22 Upper Morrow limestone section.

23 MR. NUTTER: Then what is the middle well on the  
24 cross section?

25 A The middle well is the Mark Production No. 1

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Phone (505) 962-9212

1 Foster which has now been renamed the New Bourne, N-e-w  
2 B-o-u-r-n-e Oil Company Well which is a shut in Morrow gas  
3 well which has some very thin sands in it and very little  
4 porosity above seven percent.

5 MR. NUTTER: That's in the east half of Section 21?

6 A That is in the east half of Section 21.

7 MR. NUTTER: The third well then would be the --

8 A The Hilliard No. 1 Foster Ranch in Section 22,  
9 20 South, 24 East.

10 MR. NUTTER: Thank you.

11 A And we believe these wells are all three right on  
12 the northeast edge of this sand bar and where it goes into a  
13 surge channel type situation and the Morrow sands in all of  
14 these wells are silty and very dirty.

15 Q (Mr. Richardson continuing.) Exhibit E is back in  
16 the body of the written report.

17 A The cost analysis --

18 Q Exhibit E is a land ownership plat, it's in the  
19 body there somewhere.

20 A That's right, it's near the end of the report, the  
21 land ownership plat, showing that it is all Federal land  
22 except two half sections of State land.

23 Q In other words, Exhibit E is just simply a land  
24 plat of the unit area?

25 A Yes, that is correct.

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1 Q And then Exhibit F is also in the body of the  
2 written report?

3 A Yes, and this is the cost analysis, the cost esti-  
4 mate developed by Inexco engineers for this ninety-three  
5 hundred and fifty foot Morrow test which is scheduled to  
6 penetrate ninety feet of the Mississippian Chester formation,  
7 not to exceed a depth of ninety-five hundred feet.

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17 productive. The Cisco is productive in all directions from  
18 this well and should have some potential for production. The  
19 Strawn produces in nearby wells. The Atoka should have a  
20 potential and the Morrow.

21 Q Have you picked a definite location for the initial  
22 test well?

23 A Yes, and it is nineteen eighty from the north line  
24 and six sixty from the east line of Section 30, 20 South,  
25 24 East, Eddy County. I have just recently obtained a USGS

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1 topographic map and it is on a draw. This falls right beside  
2 a draw and subject to our engineers we may have to move this  
3 a hundred feet or so either to the north or to the south.

4 Q Have the other working interest owners within the  
5 unit area been contacted?

6 A Yes, they have.

7 Q In your opinion what percentage of the working  
8 interest will be committed to the unit?

9 A One hundred percent.

10 Q Do you have an idea as to the percentage of royalty  
11 that will be committed, that is overriding royalty primarily?

12 A I think all of it.

13 Q In your opinion will the operation of this area  
14 under the proposed unit plan of operation be in the interest  
15 of conservation and the prevention of waste?

16 A Yes.

17 Q In the event of production will the correlative  
18 rights of all parties to the unit agreement be protected?

19 A Yes.

20 MR. RICHARDSON: We would like to move to enter the  
21 geological report and the exhibits into evidence.

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23 contained therein will be admitted into evidence in this case.

24 (THEREUPON, the Geological Report and Exhibits

25 A through F were admitted into evidence.)

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1 MR. RICHARDSON: Does the Commission have any questions  
2 or do you need any additional information?

3 MR. NUTTER: I think I just about questioned him  
4 all the way through as they came up.

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6 Exhibit Number C that you have four parallel faults running  
7 northwest/southeast and I think they are all down thrown to  
8 the northeast with the possible exception of the one to the  
9 west, the western most, is that correct?

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14 through the Indian Basin Field, if you would like to see the  
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17 is a continuation of this fault, is it not?

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20 those formations you named, it just depends upon what's in  
21 the fault blocks?

22 A That is correct, sir.

23 MR. NUTTER: Are there any further questions of the  
24 witness? He may be excused.

25 (THEREUPON, the witness was excused.)

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1 MR. NUTTER: Did you have anything further, Mr.  
2 Richardson?

3 MR. RICHARDSON: No, I sure don't. Thank you.

4 MR. NUTTER: Does anyone have anything they wish to  
5 offer in Case Number 6118?

6 We will take the case under advisement and the  
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8 (THEREUPON, the hearing was adjourned.)  
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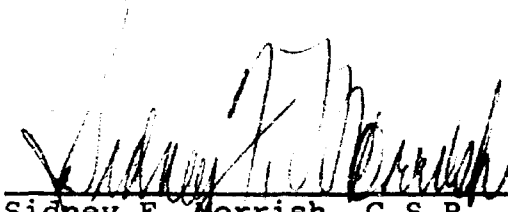
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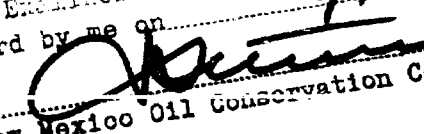
REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,  
do hereby certify that the foregoing and attached Transcript  
of Hearing before the New Mexico Oil Conservation Commission  
was reported by me, and the same is a true and correct record  
of the said proceedings to the best of my knowledge, skill and  
ability.

  
Sidney F. Morrish, C.S.R.

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Phone (505) 962-9212

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 6118  
heard by me on 1/4, 1978.  
  
New Mexico Oil Conservation Commission Examiner

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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
January 4, 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Inexco Oil Company for a ) CASE  
unit agreement, Eddy County, New Mexico. ) 6118

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission:	Lynn Teschendorf, Esq. Legal Counsel for the Commission State Land Office Building Santa Fe, New Mexico
For Inexco Oil Company:	Randolph M. Richardson, Esq. Attorney at Law J. P. White Building Roswell, New Mexico

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I N D E XPageM. L. FELDMAN

Direct Examination by Mr. Richardson

3

EXHIBIT INDEXOffered    Admitted

Geological Report

5

13

Exhibit A, Regional Index Map

5

13

Exhibit B, Morrow Sandstone Isolith

5

13

Exhibit C, Structure Map

5

13

Exhibit D, Cross Section

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Exhibit E, Land Ownership Map

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Exhibit F, Well Cost Estimate

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1 MR. NUTTER: We will call Case Number 6118.

2 MS. TESCHENDORF: Case 6118, application of Inexco  
3 Oil Company for a unit agreement, Eddy County, New Mexico.

4 MR. RICHARDSON: Randolph M. Richardson, Roswell,  
5 New Mexico, appearing on behalf of the applicant, Inexco  
6 Oil Company. I have one witness to be sworn.

7 (THEREUPON, the witness was duly sworn.)

8 MR. RICHARDSON: A copy of the unit agreement has  
9 already been furnished to the Commission and I have just  
10 handed you a geological report consisting of Exhibits A  
11 through F which have been marked Exhibits A through F,  
12 together with a supplemental letter addressed to the USGS,  
13 dated December 16th, 1977.

14  
15 M. L. FELDMAN

16 called as a witness, having been first duly sworn, was  
17 examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. RICHARDSON:

20 Q Mr. Feldman, would you please state your name and  
21 present occupation?

22 A My name is M. L. Feldman, I'm a geologist for  
23 Inexco Oil Company in Houston, Texas.

24 Q Would you please give your educational and profes-  
25 sional background which would enable you to testify as an

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1 expert in this case?

2 A I'm a 1949 graduate of the University of Oklahoma  
3 with a Bachelor of Science in Geology. I have participated  
4 in numerous continuing education schools sponsored by AAPG  
5 and numerous other schools sponsored by Exxon Research in  
6 Houston, Texas. I'm a past chairman of the West Texas  
7 Geological Society Stratigraphic Committee, a member of the  
8 Houston Geological Society Stratigraphic Committee, a past  
9 member of the SEPM, a present member of the Houston Geological  
10 Society, West Texas Geological Society and the AAPG and I have  
11 had some eighteen years of experience in the Permian Basin  
12 as a subsurface exploration geologist for Exxon and Inexco.

13 Q Are you familiar with the Long Box Unit Area and  
14 the matters contained in the application for approval of  
15 the unit agreement?

16 A Yes, I am.

17 MR. RICHARDSON: Are the qualifications acceptable?

18 MR. NUTTER: Yes, they are.

19 Q (Mr. Richardson continuing.) Is the form of the  
20 unit agreement that prescribed by Federal regulations?

21 A Yes.

22 Q Has the unit area been designated by the United  
23 States Geological Survey as an area logically suitable for  
24 development under a unit plan of development?

25 A They have so preliminarily designated it, however,

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1 the final designation is under consideration in Denver at this  
2 time.

3 Q Could you please tell the Commission the total  
4 number of acres within the unit area and the number and  
5 percentage of Federal, State and patented lands?

6 A The total is thirty-eight oh eight point one four  
7 acres. There is no fee land. The Federal land consists of  
8 three thousand one hundred and sixty-eight point one four  
9 acres, which comprises eighty-three point one nine percent  
10 of the unit area. The State of New Mexico lands cover six  
11 hundred and forty acres, which equals sixteen point eight one  
12 percent of the unit area.

13 Q Could you please tell the Commission the township  
14 and range in which this unit is located and the approximate  
15 location with reference to the nearest town?

16 A The location of the proposed test is in the south-  
17 east quarter of the northeast quarter of Section 30, 20 South,  
18 24 East, Eddy County, New Mexico. It is about twenty-four  
19 miles to the northwest of Carlsbad, as I recall.

20 Q Would you please refer to the geological report  
21 which has been handed to the Examiner, marked as Exhibits A  
22 through F? Was this report prepared by you or others directly  
23 under your control and supervision?

24 A It was prepared by me.

25 Q Would you please briefly review the report, referring

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1 to the maps by name and indicating the significance of such  
2 maps and cross sections?

3 A Exhibit A is the Regional Index Map. It shows the  
4 proposed unit and proposed test and this unit and test are  
5 located along what I believe to be in alongshore bar parallel  
6 to the Pedernal land mass, a Pre-Cambrian positive or  
7 cratonic area. It is also parallel to a feature parallel to  
8 the flank of this feature, the Artesia-Vacuum Arch, a Permian  
9 arch which parallels the flank of this cratonic area.

10 I consider the Morrow to be primarily the Morrow  
11 sand zones to be primarily alongshore bar parallel to their  
12 source which I believe to have been the Pedernal land mass,  
13 a zone of siliceous igneous rocks and I believe the tectonic  
14 changes in the area since Morrow deposition have been con-  
15 trolled primarily in this area by the Huapache Monocline  
16 which is one flank of a vertical block uplift marked by a  
17 greater than three thousand foot fault which is, at least  
18 locally, an overturned normal fault.

19 Q Go ahead with the other exhibits.

20 A All right. Briefly I would like to point out a  
21 slight error on this Regional Index Map. Down in the south  
22 center part is one of our little discoveries which is in-  
23 advertently marked as Loofer Draw and it should be Loafer  
24 Draw, L-o-a instead of L-o-o.

25 There is a typographical mistake on page three that

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1 I would like to point out. In the second paragraph, first  
2 sentence, it says, Exhibit C is a Structure Map contoured on  
3 top of a persistent dense limestone bed located near the top  
4 "to" the Morrow and it should be "of" the Morrow clastic  
5 formation.

6 Exhibit B is a Morrow Sandstone Isolith map based on  
7 forty-five API gamma ray units and it shows this elongate  
8 alongshore bar with a northeast/southwest trend to it, flanked  
9 by a number of Morrow tests and indicating that we can expect  
10 over sixty feet of net Morrow sandstone at our proposed  
11 location in Section 30, 20 South, 24 East.

12 MR. NUTTER: And it would seem that the boundaries  
13 of the unit area have been selected to control this structure,  
14 is that correct?

15 A That is correct and we think that the Morrow sand-  
16 stone is entrapped by facies changes shelf-ward into dense  
17 lagoonal facies, facies changes basin-ward into silty, dense  
18 basinal facies and it is also controlled along strike by  
19 changes into surge channels, dense clastics similar to those  
20 being deposited along the Gulf Coast in surge channels today.

21 And also in this case the unit was restricted to  
22 the west of Section 21 partly on the basis of a small fault  
23 that we will look at on a later exhibit.

24 Q (Mr. Richardson continuing.) That Section 21, you  
25 mentioned that is also the purpose of the letter to the USGS,

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1 is that not correct?

2 A As a result of some questions by Ray Noble of the  
3 USGS a supplement was prepared for this report, a brief  
4 supplement, and he questioned why the west half of Section  
5 21 was not included in the unit and I said because of two  
6 factors, because of a fault which appears to be present to  
7 the south in the Indian Basin Field and which crosses a well  
8 in the west half of Section 21 which may be a straight north/  
9 south fault so that most of 21 is on the down thrown side of  
10 the fault and because most of the west half of 21 would be  
11 structurally low and the east half of 21 has a shut-in gas  
12 well which we think is on the edge of a surge channel and  
13 it will probably be marginal to sub-marginal as far as its  
14 commercial value is concerned.

15 He also asked why we had omitted the east half of  
16 Section 32, 20 South, 24 East, and this was omitted because  
17 of the low structural position of this well and because the  
18 Morrow in this well calculates from the electric and sonic  
19 logs to be water wet.

20 MR. NUTTER: Now there are two wells that have  
21 been drilled in the south half of Section 32, Mr. Feldman,  
22 and both of them are apparently dry?

23 A Yes.

24 MR. NUTTER: Did they both penetrate the Morrow  
25 formation?

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1 A They both penetrated the Morrow and the well in  
2 the west half, the Mark Production 1-C State, had gas to the  
3 surface in the Morrow but a very thin section. It also had  
4 a million four cubic feet of gas from the Cisco from fractured  
5 zones. We feel that there is a good chance that most of this  
6 half section will be productive from both the Morrow and/or  
7 the Cisco.

8 MR. NUTTER: What about the one in the east half,  
9 did it produce anything at all?

10 A The one in the east half had a gas show in the  
11 Cisco, it was drilled tight to the Morrow. I have recently  
12 found a mud log on this well that shows that they did test  
13 some free gas in the Morrow, however, it is structurally  
14 low and our log analysis indicates that testing after frac  
15 or acid in this well would yield water and it has very low  
16 resistivity in the zones that are porous.

17 Exhibit C is a structure map on top of the Morrow  
18 B limestone, a persistent marker in Eddy County, throughout  
19 Eddy County, near the top of the Morrow clastic formation  
20 and below the Morrow limestone formation. This dense  
21 limestone was used to contour a feature which is faulted.  
22 These faults are controlled partially to the north and south  
23 of this map, mostly controlled by faulting down in the  
24 Indian Basin Field which seems to separate and segregate  
25 the production into the various fault blocks. These faults,

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1 we feel, are related to the Huapache Monocline, to the  
2 Middle Wolfcamp in faulting occurring on the flank of this  
3 vertical block uplift and these are parallel to that feature.  
4 They are post the sand bar deposition that was shown on  
5 Exhibit B and tend to segment it some but basically this unit  
6 covers the entire entity of this particular sand bar as  
7 separated by a surge channel to the northeast and a surge  
8 channel to the southwest.

9 Exhibit D is a stratigraphic cross section, both  
10 structural and stratigraphic cross section and this is a  
11 northwest/southeast cross section, crossing the northeast  
12 end of this sand bar.

13 MR. NUTTER: What is the index well there on the  
14 left side of that, Mr. Feldman?

15 A This is the Carper Drilling Monsanto Federal NA  
16 No. 1.

17 MR. NUTTER: What is the location of that, please?

18 A This well is in the northwest northwest corner of  
19 Section 21, 20 South, 24 East.

20 This well crossed a small fault in the Morrow  
21 limestone section with the omission of about fifty feet of  
22 Upper Morrow limestone section.

23 MR. NUTTER: Then what is the middle well on the  
24 cross section?

25 A The middle well is the Mark Production No. 1

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1 Foster which has now been renamed the New Bourne, N-e-w  
2 B-o-u-r-n-e Oil Company Well which is a shut in Morrow gas  
3 well which has some very thin sands in it and very little  
4 porosity above seven percent.

5 MR. NUTTER: That's in the east half of Section 21?

6 A That is in the east half of Section 21.

7 MR. NUTTER: The third well then would be the --

8 A The Hilliard No. 1 Foster Ranch in Section 22,  
9 20 South, 24 East.

10 MR. NUTTER: Thank you.

11 A And we believe these wells are all three right on  
12 the northeast edge of this sand bar and where it goes into a  
13 surge channel type situation and the Morrow sands in all of  
14 these wells are silty and very dirty.

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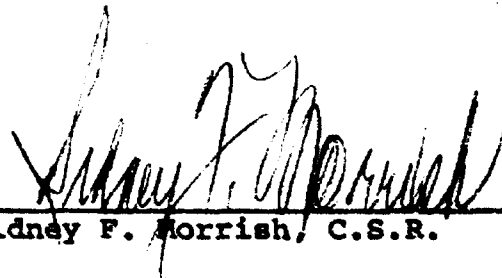
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REPORTER'S CERTIFICATE

1  
2 I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,  
3 do hereby certify that the foregoing and attached Transcript  
4 of Hearing before the New Mexico Oil Conservation Commission  
5 was reported by me, and the same is a true and correct record  
6 of the said proceedings to the best of my knowledge, skill and  
7 ability.

8  
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10   
11 Sidney F. Morrish, C.S.R.

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15 I do hereby certify that the foregoing is  
16 a complete record of the proceedings in  
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heard by me on 1/4, 1978.

17  Examiner  
18 New Mexico Oil Conservation Commission  
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ENCLOSURES AND ATTACHMENTS

EXHIBIT <u>A</u>	-----	Regional Index Map	
EXHIBIT <u>B</u>	-----	Morrow Sandstone Isolith	} in pocket
EXHIBIT <u>C</u>	-----	Morrow B Limestone Structure	
EXHIBIT <u>D</u>	-----	Cross Section A-A'	
EXHIBIT <u>E</u>	-----	Land Ownership Map of Unit Area	
EXHIBIT <u>F</u>	-----	Current Well Cost Estimate	

# REGIONAL INDEX MAP

SHOWING LOCATION OF  
PROPOSED LONG BOX UNIT  
EXHIBIT A



11-18-77

MLF  
JSK



1100 Milam Bldg. - Houston, Texas 77002  
713-651-3300

NEXCO OIL COMPANY

R-21-E

HOPE, SO  
PENN-MORROW-STRAWN

R-23-E

R-24-E

R-25-E

CISCO

RICHARD KNOB

NO ANTELOPE SINK  
MORROW-ATOKA

MORROW  
ATOKA

BOYD-MORROW

ANTELOPE SINK

ARTESIA VACUUM ARCH

CC TANK  
MORROW-ATOKA

CISCO  
OIL

N. CEMENTARY  
ATOKA

DAGGER DRAW  
MORROW

PROPOSED LONG BOX UNIT

NW INDIAN BASIN

MORROW

FOSTER RANCH

MORROW

CISCO

CEMENTARY  
MORROW

MORROW-ATOKA-CISCO

LITTLE BOX CANYON

LOOFER DRAW  
MORROW

INDIAN BASIN

PENN. CISCO

ROCKY  
ARROYO

MORROW

PWC

ATOKA & PWC

T  
19  
S

T  
20  
S

T  
21  
S

T  
22  
S

CHAVES COUNTY

EDDY COUNTY

HAPACHE

MONOCLINE

GEOLOGICAL REPORT  
PROPOSED LONG BOX UNIT  
EDDY COUNTY, NEW MEXICO

PURPOSE:

Purpose of this report is to summarize the geological reasons for formation of a 3808 acre Federal Unit to be tested by a 9350 foot Pennsylvanian Morrow wildcat in the SE/4 of the NE/4 of Section 30, T20S, R24E, Eddy County, New Mexico. Total depth will be 90' below top of Chester formation unless this exceeds a maximum depth of 9500 feet.

LOCATION:

Proposed unit is 23 miles northwest of Carlsbad, New Mexico. It is near the north edge of the semi-arid Seven Rivers Embayment, a low lying topographic plain between the Huapache Monocline to the west and the Seven Rivers Hills and Azotea Mesa to the east. Locally the unit will be situated on the drainage divide between the east trending Little Box Canyon to the south and Long Draw to the north, tributaries of South Seven Rivers, a Pecos River tributary.

## PROSPECT GEOLOGY

Proposed Long Box Unit is located on the Northwest Shelf of the Delaware Basin near the southeast flank of the Pedernal Land Mass, a Pre-Cambrian positive or cratonic element. Locally it is situated on the southeast flank of the northeast-southwest, trending Artesia-Vacuum Arch (Exhibit A), a post-Pennsylvanian feature which parallels the southeast flank of the Pedernal Land Mass. Source of clastics in the Pennsylvanian Morrow Series in northeast Eddy County is thought to have been the Pedernal Land Mass. Alongshore bars of the Lower Morrow Clastic Formation in northeast Eddy Co. should parallel its southeast flank. Pene-contemporaneous drainage channels should trend perpendicular to sub-perpendicular to its southeast flank.

Ten miles west of the proposed Long Box Unit is the Huapache Monocline (Exhibit A) a Permian drape feature on the northeast flank of an Early Permian Vertical Block Uplift with greater than 3000 feet of down to the northeast throw. Post-Pennsylvanian faulting in the Long Box area should be parallel to sub-parallel to the Huapache Monocline since it is the pre-dominant tectonic element in this vicinity of the Permian Basin.

Long Box Unit (Exhibit A) is located along a Lower Morrow clastic, northeast-southwest trending, alongshore bar complex which parallels the Artesia-Vacuum Arch. Location of this bar

complex is marked by Morrow production in the Foster Ranch Field immediately east of the Unit, the Dagger Draw Field (4 miles to the northeast) and the Little Box Canyon Field (5 miles to the southwest). Local configuration of the bar is illustrated by attached sandstone isolith map (Exhibit B). Proposed location of first test well is shown on this map near the intersection of the axis of the bar and a postulated penecontemporaneous fluvial channel. In Lower Morrow age sediments such channels are often characterized by coarse to conglomeritic siliceous clastics with optimum reservoir characteristics.

Exhibit C is a structure map contoured on the top of a persistent dense limestone bed located near the top to the Morrow Clastic Formation. It portrays draping over the alongshore clastic bar. Normal post-Pennsylvanian faulting which is sub-parallel to the Huapache Uplift to which it is related is also illustrated. This faulting is in part projected from the south where it segments the Cisco reef and Morrow sandstone reservoirs of the large Indian Basin Field.

Trapping mechanisms for Morrow reservoirs of the Long Box Prospect are perceived to be the following:

- (1) Northwest shelfward facies change from coarse bar clastics to fine dense lagoonal clastics.
- (2) Southeast basinward facies change from coarse bar clastics to fine dense basinal clastics.

(3) Southwest and northeast strike facies change from coarse clastics into fine dense surge channel clastics combined with cross fault reservoir separation. A study of Indian Basin Field indicated normal fault associated reservoir separation in both Cisco reef carbonates and Morrow clastics.

#### NEARBY PRODUCTION AND SHOWS

Long Box Unit is 1 1/4 miles northwest of Indian Basin Field. It is on the same Morrow alongshore clastic bar complex as Dagger Draw Field, 4 miles to the northeast, the shut in Foster Ranch Field, 3/4 of a mile to the east and Little Box Canyon Field, 5 miles to the southwest. Dwight's Production Histories as of 1-1-77 showed the following data for two of these fields:

Field	Reservoir	# of wells	Cumulative Production to 1-1-77 (BCF)
Indian Basin	Upr. Penn.	58	678.485
Indian Basin	Morrow	12	22.580
Dagger Draw	Wolfcamp	1	.166
Dagger Draw	Strawn	1	.122
Dagger Draw	Atoka	1	.175
Dagger Draw	Morrow	2	3.287

Since the beginning of 1977, three new Morrow gas wells have been completed in Dagger Draw Field. Foster Ranch Field is a single shut in gas well. Little Box Canyon was a single shut in Morrow gas well until this year during which 5 new gas wells have been completed in Cisco, Atoka and Morrow reservoirs.

Two dry holes are present on the southeast flank of the prospect within the unit outline. These are Tesoro #1 Huber-Federal, NWSE Sec. 29, 20S, 24E and Mark Production Co. #1 State "C", NESW Sec. 32, 20S, 24E.

The #1 Huber-Federal was plugged and abandoned 10-22-73 at a total depth of 9462 feet in Mississippian limestone. Only successful D.S.T. was of Cisco-Canyon section from 7672 to 7820 ft. Open 1 hr, G.T.S. 12 mins. at 163-115 MCF with 200 ft. SGCM recovered; 1 hr ISIP 3143# and 2 hr FSIP 3179#. Gas flow was from a 13 ft. thick coarse grained friable sandstone bed topped at 7791 ft. Density-Neutron log exhibits a prominent gas effect in this zone and 6-8 ft. of 5 to 8% porosity. The normal shut in pressures indicate the gas flow decrease was related to formation damage and that a small gas well might be completed in this zone with acid and/or fracture treatment. Morrow sandstone beds were relatively thin and dense, but the Density-Neutron log showed 8 feet with gas effect anomalies. Two attempted Morrow tests failed. Two other untested zones with good gas effect anomalies were a 9 foot thick Strawn-sandstone topped at 8303



feet and a 4 foot Cisco reef limestone zone with 5-11% porosity topped a 7432 feet. A small gas well could probably be completed in the Cisco zone.

The #1 State "C" was plugged and abandoned 3-6-75 at a total depth of 9225 in Mississippian Barnett shale. A D.S.T. of Wolfcamp limestone from 5585 to 5645 feet had G.T.S. in 22 mins and recovered G.C.M. A D.S.T. of Cisco reef limestone from 7385 to 7555 feet had GTS in 5 mins A.R.O. 1.4 MMCFGPD and recovered 10 bbls of sulfur water. Gas flow appears to have been from fractures at 7380, 7500 and 7605 feet. A west offset or a northwest diagonal offset in the same west half of Section 32 would appear to have a good chance of obtaining commercial Cisco production. Morrow sandstones penetrated by this test were thin (Exhibit B) and had low porosity, but yielded G.T.S. on a D.S.T. from 8845-8995 feet.

No successful tests were obtained in the Pan American #1 Long Draw Unit, 1964 dry and abandoned Morrow test on the northwest flank of the prospect. Shows in wells on the northeast end of the prospect are illustrated on cross section A-A' (Exhibit D).

## MARKERS, LITHOLOGY AND OBJECTIVES

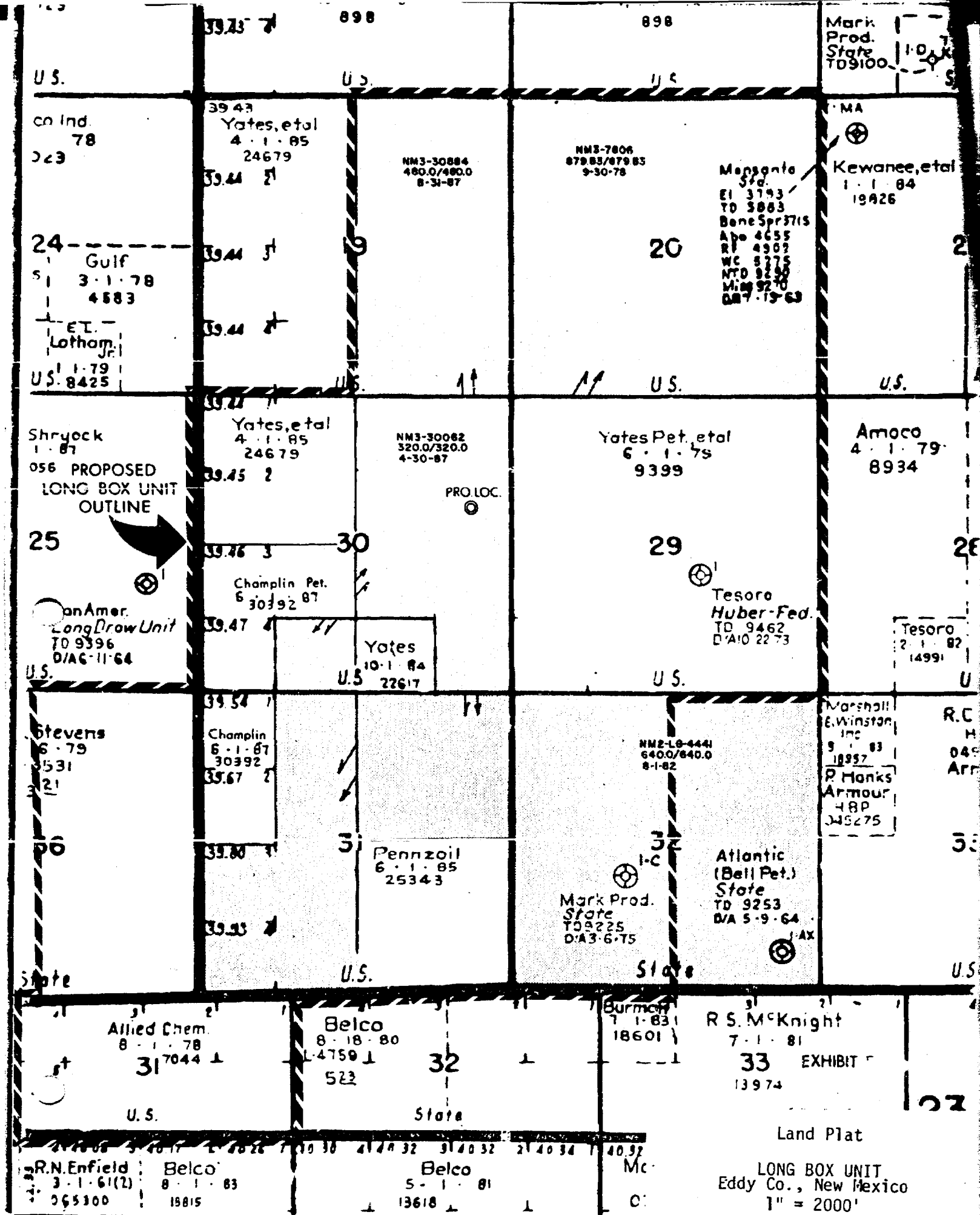
Proposed first test of the Long Box Unit will be located 1980 FNL & 660 FEL, Sec. 30, T20S, R24E, Eddy Co., New Mexico. Test will be drilled to a projected total depth of 9350 feet in Mississippian Chester limestone. Based on an estimated derrick floor elevation of 4000', the following geologic markers should be encountered:

<u>Mbr, Fmtn, Series or Zone</u>	<u>Depth (Subsea)</u>	<u>Lithology</u>
Grayburg	-0- 484'	dolomite & anhydrite
San Andres	484 (+3516)	dolomite
Glorieta	1974 (+2026)	sandstone & dolomite
Yeso	2145 (+1855)	dolomite
Tubb	2741 (+1259)	sandstone & dolomite
Drinkard - U. Bone Springs	2939 (+1061)	dolomite w/sandstone siltstone & shale
Abo	4843 (-843)	dolomite w/shale & w/chert near base
Third Bone Springs	5421 (-1421)	shale, siltstone, limestone, dolomite, & chert
Wolfcamp	5616 (-1616)	limestone, shale, sandstone w/dolomite red beds & conglomerate
Cisco	7290 (-3290)	limestone w/shale and sandstone
Cisco reef - Canyon - Strawn	7492 (-3492)	limestone w/ sand- stone & shale

<u>Mbr, Fmtn, Series or Zone</u>	<u>Depth (Subsea)</u>	<u>Lithology</u>
Atoka	8480 (-4480)	limestone & shale
Morrow ls	8700 (-4700)	limestone in part oolitic
Morrow Clastics	8825 (-4825)	sandstone, siltstone, shale, limestone
Morrow B - Barnett sh	8860 (-4860)	dense limestone over intercalated oolitic limestone, sandstone, siltstone, & shale/ w lignite over Miss. Barnett shale and siltstone w/lignite (bleeds gas)
Chester	9210 (-5210).	skeletal, algal lump, peilatal limestone

Max. TD 9500' or 90' into Chester at a lesser depth.

Primary objective is Morrow sandstone. Secondary objectives are Abo, Wolfcamp, Cisco-Canyon, Strawn and Atoka. All of these zones are productive nearby within ten miles of the proposed location. Other possible pays are San Andres and Yeso which are productive on structural and stratigraphic strike to the north-east.





# INEXCO OIL COMPANY

EXHIBIT F

## COST ESTIMATE

AFE No. (Inexco Property No.) \_\_\_\_\_

Prospect \_\_\_\_\_

Well Name and Number \_\_\_\_\_

Long Box

Long Box Unit #1

Estimated Days to Drill \_\_\_\_\_

Estimated Days to Complete \_\_\_\_\_

Location: 1980' FNL & 660'  
FEL of Section 30-T20S-R24  
Eddy County  
New Mexico

OBJECTIVES

SANDS  
Morrow Limestone

AND

DEPTH

Morrow Clastics

8,700

Morrow "B" Limestone

8,825

Miss. Chester

8,860

9,210

Est. T.D. 9,350

Est. Spud \_\_\_\_\_

A F E Prepared \_\_\_\_\_

By: 11/17/77

☒ Drill☐ Workover Same Zone☐ Recomplete in New Zone

DESCRIPTION		ESTIMATED COSTS		ACTUAL COST
		DRILLING	COMPLETION	
INTANGIBLE COSTS (343)-				
01	Access and Location Costs .....	35,000	10,000	
02	Move-in, Rig-up, Rig-down, Move-out .....	30,000		
	Contract Drilling			
03	Footage _____ ft. at \$ _____ ft. ....			
04	Daywork 43 days at \$ 4100 day .....	176,300		
05	Completion Unit 12 days at \$ 1000 day .....		12,000	
06	Fuel, Power, Water and Water Lines .....	18,000		
07	Bits, Reamers and Stabilizers .....	25,000		
08	Equipment Rental .....	6,800		
09	Cementing and Squeezing -			
	Conductor Casing .....	2,500		
	Surface Casing .....			
	Intermediate Casing .....	11,000		
	Production Casing .....		9,000	
	Liner .....			
	Other .....			
10	Drilling Mud and Chemicals .....	40,000		
10	Mud Logger .....	10,000		
11	Logging, Coring and Testing -			
	Cores .....			
	DST's .....	12,000		
	Logs..... DIL 0-1900 & 1900 - (2 runs)			
	..... DLL/RX0 1900 - TD (1 run)			
	..... BHC Density/CNL 0-1900 & 1900-TD (2 runs)	22,200		
12	Perforating .....		6,000	
12	Acidizing and Fracturing .....			
13	Labor and Supervision .....	2,000	2,000	
13	Contract Labor .....	29,700	14,000	
14	Drilling Overhead .....	2,700	800	
15	Transportation .....	2,000	6,000	
16	Sales Tax .....	1,000	7,000	
17	Other Miscellaneous Intangible Costs .....	10,000	5,000	
18	Losses, Damages and Abandonment .....	16,000	(6,000)	
19	Fishing Tool Expense and/or Directional Drilling .....			
20	Dry Hole Contributions .....			
22	Well Control Insurance .....	3,200		
TOTAL INTANGIBLE		\$ 521,200	\$ 455,400	\$ 65,800

DESCRIPTION		ESTIMATED COSTS		ACTUAL COST
		DRILLING	COMPLETION	
TANGIBLE COSTS (342):				
01	Conductor Csg. 50 ft. of 20 at 28.00 /ft	1,400		
02	Surface Csg. 200 ft. of 13-3/8 at 13.80 /ft	2,800		
03	Intermediate Csg. 2000 ft. of 8-5/8 at 6.94 /ft	13,900		
04	Production Csg. 9350 ft. of 5-1/2 at 5.50 /ft		64,900	
05	Liner 9350 ft. of 2-7/8 at 3.20 /ft		30,000	
06	Tubing	5,000		
07	Casing Head Assembly		15,000	
07	Tubing Head Assembly			
08	Pumping Unit			
09	Prime Mover		15,000	
12	Installation Costs and Non-Controllable Well Equipment		8,000	
15	Storage Tanks			
16	Separator		15,000	
17	Dehydrator			
18	Heater - Treater			
19	LACT Unit		20,000	
20	LTX or Production Unit			
21	Line Pipe			
22	Gas Recorders		18,000	
23	Installation Costs and Non-Controllable Lease Equipment			
TOTAL TANGIBLE		\$ 209,000	\$ 23,100	\$ 185,900
TOTAL WELL		\$ 730,200	\$ 478,500	\$ 251,700

It is recognized that the amounts herein are estimates only and approval of this authorization shall extend to the actual costs incurred in conducting the operation specified, whether more or less than that herein set out.

#### WELL CONTROL INSURANCE

This AFE includes in Item 22, Page 1, Well Control Insurance, during drilling and completion only, covering: 1) the cost of control of a well in the event of a blowout; 2) bodily injury or property damage liability caused by pollution, seepage or contamination; 3) pollution cleanup; 4) extinguishing of an oil or gas well fire; and 5) redrilling of the well. You MUST INDICATE your acceptance or declination of your prorata share of the subject insurance by signing below. NO INDICATION WILL BE A CONCLUSIVE PRESUMPTION OF ACCEPTANCE.

If you decline the coverage offered, you must satisfy Inexco that you already have insurance or that you can bear the out of pocket cost of well control.

#### \*INSURANCE COVERAGE ONLY

Accept \_\_\_\_\_

Decline \_\_\_\_\_

☐ Will Self Insure ☐ Have Alternate Insurance

\*PLEASE BE SURE YOU HAVE SIGNED IN BOTH REQUIRED PLACES

## INSURANCE

Operator shall at all times during the term of this Agreement carry insurance to protect the parties hereto as follows:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

(2) Comprehensive General Public Liability Insurance, including completed operations insurance, with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

The policy is extended to cover as additional insureds all co-owners, joint ventures, mining partners with the name insured in the oil and gas properties.

(3) Automobile Public Liability Insurance covering all automotive equipment used in performance of work under this agreement with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

If automotive equipment used is owned exclusively by Operator, no charge will be made to the Joint Account for premiums for this coverage except as provided in Section 111, Paragraph 5 of the Accounting Procedure.

Operator shall require all contractors performing work under this Agreement to carry the following insurance:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

(2) Comprehensive General Public Liability Insurance with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

(3) Automobile Public Liability Insurance covering all automotive equipment used in performance of work under this agreement with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

(4) Contractual Insurance covering indemnity agreement and Contractor's other obligations under this contract with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

Excess liability insurance may be carried to meet the above requirements.

INEXCO OIL COMPANY

GEOLOGY OF THE PROPOSED  
LONG BOX UNIT

EDDY COUNTY, NEW MEXICO

M. L. Feldman

November 17, 1977





December 16, 1977

Mr. Ray Noble  
Geologist  
U.S. Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Re: Proposed Long Box Unit  
Eddy Co., New Mexico  
(Expl. Memo #65-77)

Dear Ray:

As per your request by phone this date, I would like to supplement our 11-17-77 report, "Geology of the Proposed Long Box Unit", with the following data:

The west half of Section 21, T20S, R24E, was not included in the proposed Long Box Unit because of two factors. First, it is believed to be structurally low as illustrated on Exhibit "C". Secondly, the trace of the fault may be north-south locally, making most of this half section on the down-thrown side along with the economically marginal to sub-marginal Mewbourne Oil (Mark Prod.) No. 1 Foster, shut-in gas well in the east half of section 21. Sonic log of this well indicates it encountered only 11 feet of Morrow sandstone with greater than 7 percent porosity which we consider minimal for gas productivity in very coarse grained, non-shaley sandstone. Only 6 feet of Morrow sandstone calculates to have greater than 9 percent porosity which we consider minimal for gas productivity in non-shaley, medium grained sandstone. The gamma ray graph of the No. 1 Foster's sonic log indicates these porous sandstone zones to be argillaceous.

Ray Noble  
Dec. 16, 1977  
Page 2

The east half of Section 32, T20S, R24E was not included in the proposed Long Box Unit for two reasons: First, the Bell #1AX State in the SE corner is over 100 feet low structurally to the Mark Prod. No. 1-C State, dry Morrow venture in the west half of the Section as portrayed on Exhibit C. Second, although the No. 1 AX State encountered 48 feet of mostly non argillaceous Morrow sandstone with 29 feet of greater than 7 percent porosity, log analysis indicates it to be water wet. An Induction-Electric log run in the No. 1 AX State was utilized to reach this conclusion. This well was drilled "tight" below 7696 feet and to our knowledge no Lower Pennsylvanian test data has ever been released. However, due to the clean, thick, porous Morrow sandstone penetrated, it can probably be assumed that the operator would have made a Morrow gas completion if the zone had not been water wet.

Ray, it was a pleasure visiting with you on the phone today and I am looking forward to meeting you on my next trip to Roswell. If you or your associates need any additional information relative to our proposed Long Box Unit, please feel free to contact me.

Yours very truly,

INEXCO OIL COMPANY

*Newt Feldman*  
M. L. "Newt" Feldman  
Area Geologist

MLF/11r

cc: R. L. Zieve  
J. C. Carlisle  
T. L. Dodds  
✓ R. M. Richardson (P.O. Box 819-Roswell, New Mexico 88201)

RANDOLPH M. RICHARDSON

OIL AND GAS LAND AND UNIT CONSULTANT

FEDERAL - STATE - FEE

P. O. BOX 819

ROSWELL, NEW MEXICO 88201

OFFICE 505 622-8801  
HOME 505 622-7985

July 11, 1978

In Re: Long Box Unit  
Eddy County, New Mexico

Ms. Lynn Teschendorf  
N.M.O.C.C.  
P. O. Box 2088  
Santa Fe, New Mexico 87501

*Ms. 6118*

Dear Ms. Teschendorf:

Pursuant to your Order No. R-5620, Case No. 6118, I am enclosing copy of Unit Agreement showing approval by the U.S.G.S., Commissioner of Public Lands, and all of the necessary signatures for Consent and Ratification forms.

Please advise if you need anything additional at this time.

Yours truly

*R. M. Richardson*  
R. M. Richardson

RMR:dal

Enclosures

Xerox copy: Inexco Oil Company



United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Drawer 1857  
Roswell, New Mexico 88201

July 3, 1978

Randolph M. Richardson  
P. O. Box 819  
Roswell, New Mexico 88201

Dear Mr. Richardson:

One approved copy of the Long Box unit agreement, Eddy County, New Mexico, is enclosed. Such agreement, with Inexco Oil Company as unit operator, has been assigned No. 14-08-0001-16906, and is effective as of this date, the same day as approved. You are requested to furnish all principals with appropriate evidence of this approval.

You are requested to furnish the Commissioner of Public Lands, the Oil Conservation Commission, both of New Mexico, and all other interested principals with appropriate evidence of this approval.

Sincerely yours,

J. A. GILLHAM  
Acting Oil & Gas Supervisor, SRMA

Enclosure

CERTIFICATION--DETERMINATION

Pursuant to the authority vested in the Secretary of Interior, under the act approved February 25, 1920, 41 Stat. 437, as amended, 30 U. S. C. secs. 181, et seq., and delegated to the Oil and Gas Supervisors of the Geological Survey (33 F.R. 5812), I do hereby:

A. Approve the attached agreement for the development and operation of the LONG BOX Unit Area, State of New Mexico, County of Eddy.

B. Certify and determine that the unit plan of development and operation contemplated in the attached agreement is necessary and advisable in the public interest for the purpose of more properly conserving the natural resources.

C. Certify and determine that the drilling, producing, rental, minimum royalty, and royalty requirements of all Federal leases committed to said agreement are hereby established, altered, changed, or revoked to conform with the terms and conditions of this agreement.

Dated JUL 06 1978.

AGillham  
ACTING Oil and Gas Supervisor, United States Geological Survey

Contract Number 14-08-0001-16906

UNIT AGREEMENT  
FOR THE DEVELOPMENT AND OPERATION

OF THE  
LONG BOX UNIT AREA  
COUNTY OF EDDY  
STATE OF NEW MEXICO

NO. \_\_\_\_\_

THIS AGREEMENT, entered into as of the 20th day of November,  
1947, by and between the parties subscribing, ratifying, or consenting hereto,  
and herein referred to as the "parties hereto,"

W I T N E S S E T H :

WHEREAS, the parties hereto are the owners of working, royalty, or other  
oil and gas interests in the unit area subject to this agreement; and

WHEREAS, the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as  
amended, 30 U. S. C. Secs. 181 et seq., authorizes Federal lessees and their re-  
presentatives 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 Commissioner of Public Lands of the State of New Mexico is  
authorized by an Act of the Legislature (Sec. 7-11-29 N.M. Statutes 1953 Annotated)  
to consent to or approve this agreement on behalf of the State of New Mexico, insofar  
as it covers and includes lands and mineral interest of the State of New Mexico; and,

WHEREAS, the Oil Conservation Commission of the State of New Mexico is author-  
ized by an Act of the Legislature (Chapter 72, Laws of 1935, as amended by Chapter  
193, Laws of 1937; Chapter 166, Laws of 1941; and Chapter 168, Laws of 1949) to ap-  
prove this agreement and the conservation provisions hereof; and,

WHEREAS, the parties hereto hold sufficient interests in the \_\_\_\_\_  
Long Box Unit Area covering the land hereinafter des-  
cribed to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to conserve natural resources,  
prevent waste, and secure 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 below-defined unit area, and agree severally among themselves as follows:

1. ENABLING ACT AND REGULATIONS. 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 or valid, pertinent, and reasonable regulations hereafter issued thereunder are accepted and made a part of this agreement as to Federal lands, provided such regulations are not inconsistent with the terms of this agreement; and as to non-Federal 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 land is located, are hereby accepted and made a part of this agreement.

2. UNIT AREA. The following described land is hereby designated and recognized as constituting the unit area:

T-20-S, R-23-E, NMPM  
Sec. 36; E $\frac{1}{2}$

T-20 $\frac{1}{2}$ -S, R-23-E, NMPM  
Sec. 31; All

T-20-S, R-24-E, NMPM  
Sec. 19; E $\frac{1}{2}$   
Secs. 20, 29, 30, 31: All  
Sec. 32; W $\frac{1}{2}$

Containing 3,808.14 acres,  
more or less.

Exhibit "A" attached hereto is a map showing the unit area and the boundaries and identity of tracts and leases in said area to the extent known to the Unit Operator. Exhibit "B" attached hereto is a schedule showing to the extent known to the Unit Operator the acreage, percentage, and kind of ownership of oil and gas interests in all land in the unit area. However, nothing herein or in said schedule 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" and "B" shall be revised by the Unit Operator whenever changes in the unit area render such revision necessary when requested by the Oil and Gas Supervisor, hereinafter referred to as "Supervisor," or when requested by the Commissioner of Public Lands of the State of New Mexico,

hereinafter referred to as "Land Commissioner," and not less than five (5) copies of the revised Exhibits shall be filed with the Supervisor and one (1) copy thereof shall be filed with the Land Commissioner, and one (1) copy with the New Mexico Oil Conservation Commission, hereinafter referred to as "State Commission."

The above-described unit area shall, when practicable, be expanded to include therein any additional lands or shall be contracted to exclude lands whenever such expansion or contraction is deemed to be necessary or advisable to conform with the purposes of this agreement. Such expansion or contraction shall be effected in the following manner:

(a) Unit Operator, on its own motion or on demand of the Director of the Geological Survey, hereinafter referred to as "Director," or on demand of the Land Commissioner, after preliminary concurrence by the Director, shall prepare a notice of proposed expansion or contraction describing the contemplated changes in the boundaries of the unit area, the reasons therefor, and the proposed effective date thereof, preferably, the first day of a month subsequent to the date of notice.

(b) Said notice shall be delivered to the Supervisor, the Land Commissioner and the State Commission, and copies thereof mailed to the last known address of each working-interest owner, lessee, and lessor whose interests are affected, advising that thirty (30) days will be allowed for submission to the Unit Operator of any objections.

(c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Supervisor, the Land Commissioner, and the State Commission, evidence of mailing of the notice of expansion or contraction and a copy of any objections thereto which have been filed with the Unit Operator, together with an application in sufficient number, for approval of such expansion or contraction and with appropriate joinders.

(d) After due consideration of all pertinent information, the expansion or contraction shall, upon approval by the Supervisor, the Land Commissioner, and State Commission, become effective as of the date prescribed in the notice thereof.

(e) All legal subdivisions of lands (i.e., 40 acres by Government survey or its nearest lot or tract equivalent; in instances of irregular surveys unusually large lots or tracts shall be considered in multiples of 40 acres or the nearest aliquot equivalent thereof), no parts of which are entitled to be in a participating area on or before the fifth anniversary of the effective date of the first initial participating area established under this unit agreement, shall be eliminated automatically from this agreement, effective as of said fifth anniversary, and such lands



shall no longer be a part of the unit area and shall no longer be subject to this agreement, unless diligent drilling operations are in progress on unitized lands not entitled to participation on said fifth anniversary, in which event all such lands shall remain subject hereto for so long as such drilling operations are continued diligently, with not more than 90 days' time lapsing between the completion of one such well and the commencement of the next such well. All legal subdivisions of lands not entitled to be in a participating area within 10 years after the effective date of the first initial participating area approved under this agreement shall be automatically eliminated from this agreement as of said tenth anniversary. All lands proved productive by diligent drilling operations after the aforesaid five-year period shall become participating in the same manner as during said five-year period. However, when such diligent drilling operations cease, all non-participating lands shall be automatically eliminated effective as of the 91st day thereafter. The unit operator shall within 90 days after the effective date of any elimination hereunder, describe the area so eliminated to the satisfaction of the Supervisor and the Land Commissioner and promptly notify all parties in interest.

If conditions warrant extension of the ten-year period specified in this subsection 2 (e), a single extension of not to exceed two years may be accomplished by consent of the owners of 90% of the working interests in the current non-participating unitized lands and the owners of 60% of the basic royalty interests (exclusive of the basic royalty interests of the United States) in non-participating unitized lands with approval of the Director and Land Commissioner, provided such extension application is submitted to the Director and the Land Commissioner not later than 60 days prior to the expiration of said ten-year period.

Any expansion of the unit area pursuant to this section which embraces lands theretofore eliminated pursuant to this subsection 2 (e) shall not be considered automatic commitment or recommitment of such lands.

3. UNITIZED LAND AND UNITIZED SUBSTANCES. All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement." All oil and gas in any and all formations of the unitized land are unitized under the terms of this agreement and herein are called "unitized substances."

4. UNIT OPERATOR. Inexco Oil Company  
is hereby designated as Unit Operator and by signature hereto as Unit Operator

agrees and consents to accept the duties and obligations of Unit Operator for the discovery, development, and production of unitized substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in the capacity and not as an owner of interest in unitized substances, and the term "working-interest owner" when used shall include or refer to Unit Operator as the owner of a working interest when such an interest is owned by it.

5. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time prior to the establishment of a participating area or areas hereunder, 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 notice of intention to resign has been served by Unit Operator on all working-interest owners and the Supervisor and the Land Commissioner, and until all wells then drilled hereunder are placed in a satisfactory condition for suspension or abandonment whichever is required by the Supervisor as to Federal lands and the State Commission as to State lands, unless a new Unit Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

Unit Operator shall have the right to resign in like manner and subject to like limitations as above provided at any time a participating area established hereunder is in existence, but, in all instances of resignation or removal, until a successor unit operator is selected and approved as hereinafter provided, the working-interest owners shall be jointly responsible for performance of the duties of unit operator, and shall not later than 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 of Unit Operator shall not release Unit Operator from any liability for any default by it hereunder occurring prior to the effective date of its resignation.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by the same percentage vote of the owners of working interests as herein provided for the selection of a new Unit Operator. Such removal shall be effective upon notice thereof to the Supervisor and the Land Commissioner.

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, materials, and appurtenances used in conducting the unit operations to the new duly qualified successor Unit Operator or to the common agent, if no such new Unit Operator is elected, to be used for the purpose of conducting unit operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment, and appurtenances needed for the preservation of any wells.

6. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation as Unit Operator or shall be removed as hereinabove provided, or a change of Unit Operator is negotiated by working-interest owners, the owners of the working interests in the participating area or areas according to their respective acreage interests in such participating area or areas, or until a participating area shall have been established, the owners of the working interests according to their respective acreage interests in all unitized land, shall by majority vote select a successor Unit Operator: Provided, That, if a majority but less than 75 per cent of the working interests qualified to vote are owned by one party to this agreement, a concurring vote of one or more additional working interest owners shall be required to select a new operator. 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 approved by the Land Commissioner.

If no successor Unit Operator is selected and qualified as herein provided, the Director and the Land Commissioner, at their election, may declare this unit agreement terminated.

7. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. If the Unit Operator is not the sole owner of working interests, costs, and expenses incurred by Unit Operator in conducting unit operations hereunder shall be paid and apportioned among and borne by the owners of working interests, all in accordance with the agreement or agreements entered into by and between the Unit Operator and the owners of working interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working-interest owners and the

Unit Operator as provided in this section, whether one or more, are herein referred to as the "unit operating agreement." Such unit operating agreement shall also provide the manner in which the working-interest owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases, or other independent contracts, and such other rights and obligations as between Unit Operator and the working-interest owners as may be agreed upon by Unit Operator and the working-interest owners; 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 unit agreement, and in case of any inconsistency or conflict between this unit agreement and the unit operating agreement, this unit agreement shall govern. Three true copies of any unit operating agreement executed pursuant to this section should be filed with the Supervisor and one true copy with the Land Commissioner, prior to approval of this unit agreement.

8. 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. 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.

9. DRILLING TO DISCOVERY. Within six (6) months after the effective date hereof, the Unit Operator shall begin to drill an adequate test well at a location approved by the Supervisor, if on Federal land, or by the Land Commissioner, if on State land, unless on such effective date a well is being drilled conformably with the terms hereof, and thereafter continue such drilling diligently until the Mississippian Formation has been penetrated and all beds of Pennsylvanian  
age tested . or until at a lesser depth unitized substances shall be discovered which can be produced in paying

quantities (to-wit: quantities sufficient to repay the costs of drilling, completing and producing operations, with a reasonable profit) or the Unit Operator shall, at any time, establish to the satisfaction of the Supervisor if on Federal land, or the Land Commissioner if on State land, that further drilling of said well would be unwarranted or impracticable; provided, however, that Unit Operator shall not, in any event, be required to drill said well to a depth in excess of 9,500 feet. Until the discovery of a deposit of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling diligently one well at a time, allowing not more than six (6) months between the completion of one well and the beginning of the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of said Supervisor if it be on Federal land or of the Land Commissioner if on State land, or until it is reasonably proved that the unitized land is incapable of producing unitized substances in paying quantities in the formations drilled hereunder. Nothing in this section shall be deemed to limit the right of the Unit Operator to resign as provided in Section 5 hereof, or as requiring Unit Operator to commence or continue any drilling during the period pending such resignation becoming effective in order to comply with the requirements of this section. The Director and Land Commissioner may modify the drilling requirements of this section by granting reasonable extensions of time when, in their opinion, such action is warranted.

Upon failure to commence any well provided for in this section within the time allowed, including any extension of time granted by the Supervisor and the Land Commissioner, this agreement will automatically terminate; upon failure to continue drilling diligently any well commenced hereunder, the Supervisor and the Land Commissioner may, after 15-days notice to the Unit Operator, declare this unit agreement terminated.

10. PLAN OF FURTHER DEVELOPMENT AND OPERATION. Within six (6) months after completion of a well capable of producing unitized substances in paying quantities, the Unit Operator shall submit for the approval of the Supervisor and the Land Commissioner an acceptable plan of development and operation for the unitized land which, when approved by the Supervisor and the Land Commissioner, shall constitute the further drilling and 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

submit for the approval of the Supervisor, the Land Commissioner, and State Commission a plan for an additional specified period for the development and operation of the unitized land.

Any plan submitted pursuant to this section shall provide for the exploration of the unitized area and for the diligent drilling necessary for determination of the area or areas thereof capable of producing unitized substances in paying quantities in each and every productive formation and shall be as complete and adequate as the Supervisor, the Land Commissioner, and State Commission may determine to be necessary for timely development and proper conservation of the oil and gas resources of the unitized area and shall:

(a) specify the number and locations of any wells to be drilled and the proposed order and time for such drilling; and

(b) to the extent practicable specify the operating practices regarded as necessary and advisable for proper conservation of natural resources. Separate plans may be submitted for separate productive zones, subject to the approval of the Supervisor, the Land Commissioner, and State Commission.

Plans shall be modified or supplemented when necessary to meet changed conditions or to protect the interests of all parties to this agreement. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of development. The Supervisor and the Land Commissioner are authorized to grant a reasonable extension of the six-month period herein prescribed for submission of an initial plan of development where such action is justified because of unusual conditions or circumstances. After completion hereunder of a well capable of producing any unitized substance in paying quantities, no further wells, except such as may be necessary to afford protection against operations not under this agreement and such as may be specifically approved by the Supervisor, the Land Commissioner, and State Commission, shall be drilled except in accordance with a plan of development approved as herein provided.

11. PARTICIPATION AFTER DISCOVERY. Upon completion of a well capable of producing unitized substances in paying quantities or as soon thereafter as required by the Supervisor, the Land Commissioner, or the State Commission, the Unit Operator shall submit for approval by the Supervisor, the Land Commissioner, and State Commission a schedule, based on subdivisions of the public-land survey or aliquot parts thereof, of all land then regarded as reasonably proved to be productive in paying quantities; all lands in said schedule on approval of the Supervisor, the Land Commissioner, and State Commission to constitute a participating area, effective

as of the date of completion of such well or the effective date of this unit agreement, whichever is later. The acreages of both Federal and non-Federal lands shall be based upon appropriate computations from the courses and distances shown on the last approved public-land survey as of the effective date of each initial participating area. Said schedule shall also set forth the percentage of unitized substances to be allocated as herein provided to each tract in the participating area so established, and shall govern the allocation of production commencing with the effective date of the participating area. A separate participating area shall be established for each separate pool or deposit of unitized substances or for any group thereof which is produced as a single pool or zone, and any two or more participating areas so established may be combined into one, on approval of the Supervisor, the Land Commissioner, and the State Commission. When production from two or more participating areas, so established, is subsequently found to be from a common pool or deposit said participating areas shall be combined into one, effective as of such appropriate date as may be approved or prescribed by the Supervisor, the Land Commissioner, and State Commission. The participating area or areas so established shall be revised from time to time, subject to like approval, to include additional land then regarded as reasonably proved to be productive in paying quantities or necessary for unit operations, or to exclude land then regarded as reasonably proved not to be productive in paying quantities and the schedule of allocation percentages shall be revised accordingly. The effective date of any revision shall be the first of the month in which is obtained the knowledge or information on which such revision is predicated, provided, however, that a more appropriate effective date may be used if justified by the Unit Operator and approved by the Supervisor, the Land Commissioner, and State Commission. No land shall be excluded from a participating area on account of depletion of the unitized substances, except that any participating area established under the provisions of this unit agreement shall terminate automatically whenever all completions in the formation on which the participating area is based are abandoned.

It is the intent of this section that a participating area shall represent the area known or reasonably estimated to be productive in paying quantities; but regardless of any revision of the participating area, nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the revision of the participating area.

In the absence of agreement at any time between the Unit Operator and the Supervisor, the Land Commissioner, and State Commission, as to the proper definition or redefinition of a participating area, or until a participating area has, or areas

have, been established as provided herein, the portion of all payments affected thereby shall be impounded in a manner mutually acceptable to the owners of working interests and the Supervisor and the Land Commissioner. Royalties due the United States shall be determined by the Supervisor for Federal lands and the Land Commissioner for the State lands and the amount thereof shall be deposited, as directed by the Supervisor and the Land Commissioner, to be held as unearned money until a participating area is finally approved and then applied as earned or returned in accordance with a determination of the sum due as Federal and State royalty on the basis of such approved participating area.

Whenever it is determined, subject to the approval of the Supervisor, the Land Commissioner, and State Commission that a well drilled under this agreement is not capable of production in paying quantities and inclusion of the land on which it is situated in a participating area is unwarranted, production from such well shall, for the purposes of settlement among all parties other than working-interest owners, be allocated to the land on which the well is located unless such land is already within the participating area established for the pool or deposit from which such production is obtained. Settlement for working interest benefits from such a well shall be made as provided in the unit operating agreement.

Determination as to whether a well completed within the Unit Area prior to the effective date of this agreement is capable of producing unitized substances in paying quantities shall be deferred until an initial participating area is established as a result of the completion of a well for production in paying quantities in accordance with Section 9 hereof.

12. ALLOCATION OF PRODUCTION. All unitized substances produced from each participating area established under this agreement, except any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp, and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor, Land Commissioner, and State Commission, or unavoidable lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits accruing under this agreement, each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to the total acres of unitized land in said participating area, except that allocation of production hereunder for purposes other than for settlement of the royalty, overriding royalty, or payment out of production obligations of the respective working-interest owners, shall be on the basis prescribed in the unit operating agreement whether in conformity with the basis of allocation herein set forth or otherwise. It is hereby



agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last-mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as such area was last defined at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS. Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor and the Land Commissioner, at such party's sole risk, costs, and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such a well in like manner as other wells are drilled by the Unit Operator under this agreement.

If any well drilled as aforesaid by a working-interest owner results in production such that the land upon which it is situated may properly be included in a participating area, such participating area shall be established or enlarged as provided in this agreement and the well shall thereafter be operated by the Unit Operator in accordance with the terms of this agreement and the unit operating agreement.

If any well drilled as aforesaid by a working-interest owner obtains production in quantities insufficient to justify the inclusion of the land upon which such well is situated in a participating area, such well may be operated and produced by the party drilling the same subject to the conservation requirements of this agreement. The royalties in amount or value of production from any such well shall be paid as specified in the underlying lease and agreements affected.

14. ROYALTY SETTLEMENT. The United States and any State and any royalty owner who is entitled to take in kind a share of the substances now unitized hereunder shall hereafter be entitled to the right to take in kind its share of the unitized substances, and the Unit Operator, or the working-interest owner in case

of the operation of a well by a working-interest owner as herein provided for in special cases, shall make deliveries of such royalty share taken in kind 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, or by the Unit Operator, 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 royalties due under their leases.

If gas obtained from lands not subject to this agreement is introduced into any participating area hereunder, for use in repressuring, stimulation of production, or increasing ultimate recovery, in conformity with a plan of operations approved by the Supervisor and the Land Commissioner, a like amount of gas, after settlement as herein provided for any gas transferred from any other participating area and with appropriate deduction for loss from any cause, may be withdrawn from the formation into which the gas is introduced, royalty free as to dry gas, but not as to any products which may be extracted therefrom; provided that such withdrawal shall be at such time as may be provided in the approved plan of operations or as may otherwise be consented to by the Supervisor and the Land Commissioner as conforming to good petroleum engineering practice; and provided further, that such right of withdrawal shall terminate on the termination of this unit agreement.

Royalty due the United States 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 amounts thereof allocated to unitized Federal land as provided herein at the rates specified in the respective Federal leases, or at such lower rate or rates as may be authorized by law or regulation; provided, that for leases on which the royalty rate depends on the daily average production per well, said average production shall be determined in accordance with the operating regulations as though each participating area were a single consolidated lease.

Royalty due on account of State lands shall be computed and paid on the basis of all unitized substances allocated to such lands.

15. RENTAL SETTLEMENT. Rental 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 due under their leases. Rental or minimum royalty for lands of the United States subject to this agreement shall be paid at the rate specified in the respective leases from the United States unless such rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary or his duly authorized representative.

Rentals on State of New Mexico lands subject to this agreement shall be paid at the rates specified in the respective leases.

With respect to any lease on non-Federal land containing provisions which would terminate such lease unless drilling operations are commenced upon the land covered thereby within the time therein specified or rentals are paid for the privilege of deferring such drilling operations, the rentals required thereby shall, notwithstanding any other provision of this agreement, be deemed to accrue and become payable during the term thereof as extended by this agreement and until the required drilling operations are commenced upon the land covered thereby or until some portion of such land is included within a participating area.

16. 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 State or Federal law or regulation.

17. DRAINAGE. The Unit Operator shall take such measures as the Supervisor and Land Commissioner deem appropriate and adequate to prevent drainage of unitized substances from unitized land by wells on land not subject to this agreement.

18. 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, as to Federal leases and the Land Commissioner, as to State leases, shall and each by his approval hereof, or by the approval hereof by his duly authorized representative, does hereby establish, alter, change, or revoke the drilling, producing, rental, minimum royalty, and royalty requirements of Federal and State leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this agreement, and without limiting the generality of the foregoing,

all leases, subleases, and contracts are particularly modified in accordance with the following:

(a) The development and operation of lands subject to this agreement under the terms thereof shall be deemed full performance of all obligations for development and operation with respect to each and every separately owned tract subject to this agreement, regardless of whether there is any development of any particular tract of the unit area.

(b) Drilling and producing operations performed hereunder upon any tract of unitized lands will 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 the land therein embraced.

(c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Secretary and the Land Commissioner, or his duly authorized representative, 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.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil or gas of lands other than those of the United States and State of New Mexico committed to this agreement, which, by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such terms so provided therein so that it shall be continued in full force and effect for and during the term of this agreement.

(e) Any Federal lease for a fixed term of twenty (20) years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force beyond the term provided therein until the termination hereof. Any other Federal lease committed hereto shall continue in force beyond the term so provided therein or by law as to the land committed so long as such lease remains subject hereto, provided that production is had in paying quantities under this unit agreement prior to the expiration date of the term of such lease, or in the event actual drilling operations are commenced on unitized land, in accordance with the provisions of this agreement, prior to the end of the primary term of such lease and are being diligently prosecuted at that time, such lease shall be extended for two years and so long thereafter as oil or gas is produced in paying quantities in

accordance with the provisions of the Mineral Leasing Act Revision of 1960.

(f) Each sublease or contract relating to the operation and development of unitized substances from lands of the United States committed to this agreement, which by its terms would expire prior to the time at which the underlying lease, as extended by the immediately preceding paragraph, will expire, 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 the underlying lease as such term is herein extended.

(g) The segregation of any Federal Lease committed to this agreement is governed by the following provision in the fourth paragraph of Sec. 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 nonunitized 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."

(h) In the event the Initial Test Well is commenced prior to the expiration date of the shortest term State Lease within the Unit Area, any lease embracing lands of the State of New Mexico which is made subject to this agreement, shall continue in force beyond the term provided therein as to the lands committed hereto until the termination hereof.

(i) Any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto, shall be segregated as to the portion committed and the portion not committed, and the terms of such lease shall apply separately to such segregated portions commencing as of the effective date hereof; provided, however, notwithstanding any of the provisions of this agreement to the contrary any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced in such lease, if oil or gas is discovered and is capable of being produced in paying quantities from some part of the lands embraced in such lease at the expiration of the secondary term of such lease; or if, at the expiration of the secondary term, the leasee or the Unit Operator is then engaged in bona fide drilling or reworking operations on some part of the lands embraced in such lease, the same as to all lands embraced therein, shall

remain in full force and effect so long as such operations are being diligently prosecuted, and if they result in the production of oil or gas; said lease shall continue in full force and effect as to all of the lands embraced therein, so long thereafter as oil or gas in paying quantities is being produced from any portion of said lands.

19. 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, or 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, royalty, or other 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, photostatic, or certified copy of the instrument of transfer.

20. EFFECTIVE DATE AND TERM. This agreement shall become effective upon approval by the Secretary and the Land Commissioner or his duly authorized representative, and shall terminate five (5) years from said effective date unless

(a) such date of expiration is extended by the Director and the Land Commissioner, or

(b) it is reasonably determined prior to the expiration of the fixed term or any extension thereof that the unitized land is incapable of production of unitized substances in paying quantities in the formations tested hereunder and after notice of intention to terminate the agreement on such ground is given by the Unit Operator to all parties in interest at their last known addresses, the agreement is terminated with the approval of the Supervisor and the Land Commissioner, or

(c) a valuable discovery of unitized substances has been made or accepted on unitized land during said initial term or any extension thereof, in which event the agreement shall remain in effect for such term and so long as unitized substances are produced in quantities sufficient to pay for the cost of producing same from wells on unitized land within any participating area established hereunder and, should production cease, so long thereafter as diligent operations are in progress for the restoration of production or discovery of new production and so long thereafter as unitized substances so discovered are produced as aforesaid, or

(d) it is terminated as heretofore provided in this agreement. This agreement may be terminated at any time by not less than 75 per centum, on an acreage basis, of the working-interest owners signatory hereto, with the approval of the Supervisor and the Land Commissioner; notice of any such approval to be given by the Unit Operator to all parties hereto.

21. RATE OF PROSPECTING, DEVELOPMENT, AND PRODUCTION. The Director is hereby vested with authority to alter or modify from time to time in his discretion the quantity and rate of production under this agreement when such quantity and rate is not fixed pursuant to Federal or State law or does not conform to any state-wide voluntary conservation or allocation program, which is established, recognized, and generally adhered to by the majority of operators in such State, 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. Without regard to the foregoing, the Director is also hereby vested with authority to alter or modify from time to time in his discretion the rate of prospecting and development and the quantity and rate of production under this agreement when such alteration or modification is in the interest of attaining the conservation objectives stated in this agreement and is not in violation of any applicable Federal or State law.

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 15 days from notice.

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

23. NOTICES. All notices, demands, or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if given in writing and personally delivered to the party or sent by postpaid 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 may have furnished in writing to party sending the notice, demand or statement.

24. NO WAIVER OF CERTAIN RIGHTS. Nothing in this agreement contained 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 lands are located, or of the United States, 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.

25. UNAVOIDABLE DELAY. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while 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 agencies, unavoidable accidents, 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. No unit obligation which is suspended under this section shall become due less than thirty (30) days after it has been determined that the suspension is no longer applicable. Determination of creditable "Unavoidable Delay" time shall be made by the unit operator subject to approval of the Supervisor and the Land Commissioner.

26. NONDISCRIMINATION. In connection with the performance of work under this agreement, the operator agrees to comply with all the provisions of section 202 (1) to (7) inclusive of Executive Order 11246 (30 F.R. 12319), as amended, which are hereby incorporated by reference in this agreement.

27. LOSS OF TITLE. In the event title to any tract of unitized land shall fail and the true owner cannot be induced to join in this unit agreement, such tract shall be automatically regarded as not committed hereto and there shall be such readjustment 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 interests subject thereto, payment or delivery on account thereof may be withheld without liability for interest until the dispute is finally settled; provided, that, as to Federal and State land or leases, no payments of



funds due the United States or the State of New Mexico should be withheld, but such funds shall be deposited as directed by the Supervisor and such funds of the State of New Mexico shall be deposited as directed by the Land Commissioner, 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.

28. NON-JOINDER AND SUBSEQUENT JOINDER. If the owner of any substantial interest in a tract within the unit area fails or refuses to subscribe or consent to this agreement, the owner of the working interest in that tract may withdraw said tract from this agreement by written notice delivered to the Supervisor, the Land Commissioner, the State Commission, and the Unit Operator prior to the approval of this agreement by the Supervisor. Any oil or gas interests in lands within the unit area not committed hereto prior to submission of this agreement for final approval may thereafter be committed hereto by the owner or owners thereof subscribing or consenting to this agreement, and, if the interest is a working interest, by the owner of such interest also subscribing to the unit operating agreement. After operations are commenced hereunder, the right of subsequent joinder, as provided in this section, by a working-interest owner is subject to such requirements or approvals, if any, pertaining to such joinder, as may be provided for in the unit operating agreement. After final approval hereof, joinder by a non-working interest owner must be consented to in writing by the working-interest owner committed hereto and responsible for the payment of any benefits that may accrue hereunder in behalf of such non-working interest. A non-working interest may not be committed to this unit unless the corresponding working interest is committed hereto. Joinder to the unit agreement by a working-interest owner, at any time, must be accompanied by appropriate joinder to the unit operating agreement, if more than one committed working-interest owner is involved, in order for the interest to be regarded as committed to this unit agreement. Except as may otherwise herein be provided, subsequent joinders to this agreement shall be effective as of the first day of the month following the filing with the Supervisor, the Land Commissioner, and the State Commission of duly executed counterparts of all or any papers necessary to establish effective commitment of any tract to this agreement unless objection to such joinder is duly made within sixty (60) days by the Supervisor, the Land Commissioner, or State Commission.

29. COUNTERPARTS. This agreement may be executed in any number of counterparts no one of which needs to be executed by all parties or 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 such 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.

30. SURRENDER. Nothing in this agreement shall prohibit the exercise by any working-interest owner of the right to surrender vested in such party by any lease, sublease, or operating agreement as to all or any part of the lands covered thereby, provided that each party who will or might acquire such working interest by such surrender or by forfeiture as hereafter set forth, is bound by the terms of this agreement.

If, as a result of any such surrender, the working interest rights as to such lands become vested in any party other than the fee owner of the unitized substances, said party may forfeit such rights and further benefits from operation hereunder as to said land to the party next in the chain of title who shall be and become the owner of such working interest.

If, as the result of any such surrender or forfeiture, working interest rights become vested in the fee owner of the unitized substances, such owner may:

(1) Accept those working-interests rights subject to this agreement and the unit operating agreement; or

(2) Lease the portion of such land as is included in a participating area established hereunder subject to this agreement and the unit operating agreement.

(3) Provide for the independent operation of any part of such land that are not then included within a participating area established hereunder.

If the fee owner of the unitized substances does not accept the working-interest rights subject to this agreement and the unit operating agreement or lease, such lands as above-provided within six (6) months after the surrendered or forfeited working-interest rights become vested in the fee owner, the benefits and obligations of operations accruing to such lands under this agreement and the unit operating agreement shall be shared by the remaining owners of unitized working interests in accordance with their respective working interest ownerships, and such owners or working interests shall compensate the fee owner of unitized sub-

stances in such lands by paying sums equal to the rentals, minimum royalties, and royalties applicable to such lands under the lease in effect when the lands were unitized.

An appropriate accounting and settlement shall be made, for all benefits accruing to or payments and expenditures made or incurred on behalf of such surrendered or forfeited working interest subsequent to the date of surrender or forfeiture, and payment of any moneys found to be owing by such an accounting shall be made as between the parties within thirty (30) days. In the event no unit operating agreement is in existence and a mutually acceptable agreement between the proper parties thereto cannot be consummated, the Supervisor may prescribe such reasonable and equitable agreement as he deems warranted under the circumstances.

The exercise of any right vested in a working-interest owner to reassign such working interest to the party from whom obtained shall be subject to the same conditions as set forth in this section in regard to the exercise of a right to surrender.

31. TAXES. The working-interest owners shall render and pay for their account and the account of the royalty owners all valid taxes on or measured by the unitized substances in and under or that may be produced, gathered, and sold from the land subject to this contract after the effective date of this agreement, or upon the proceeds derived therefrom. The working-interest owners on each tract shall and may charge the proper proportion of said taxes to the royalty owners having interests in said tract, and may currently retain and deduct sufficient of the unitized substances or derivative products, or net proceeds thereof from the allocated share of each royalty owner to secure reimbursement for the taxes so paid. No such taxes shall be charged to the United States or the State of New Mexico or to any lessor who has a contract with his lessor who has a contract with his lessee which requires the lessee to pay such taxes.

32. NO PARTNERSHIP. It is expressly agreed that the relation of the parties hereto is that of independent contractors and nothing in this agreement contained, expressed, or implied, nor any operations conducted hereunder, shall create or be deemed to have created a partnership or association between the parties hereto or any of them.

33. 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 right 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. The parties hereto, including the State Commission, agree that all powers and authority vested in the State Commission in and by any provisions of this agreement are vested in the State Commission and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject in any case to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

34. SURFACE AND ENVIRONMENTAL PROTECTION STIPULATIONS. Nothing in this agreement shall modify or change either the special Federal Lease stipulations relating to surface management or such special Federal Lease stipulations relating to surface and environmental protection, attached to and made a part of, Oil and Gas Leases covering lands within the Unit Area.

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

ATTEST:

INEXCO OIL COMPANY

BY: Wallace G. Malone  
Assistant Secretary

BY: William G. Goodwin Vice President  
Address: WILLIAM G. GOODWIN  
VICE PRESIDENT Inexco Oil Company  
1100 Milam Building-Suite 1900  
Houston, Texas 77002  
UNIT OPERATOR

STATE OF Texas )  
COUNTY OF Harris ) ss

The foregoing instrument was acknowledged before me this 5<sup>th</sup> day of

May, 1978, by William G. Goodwin who is

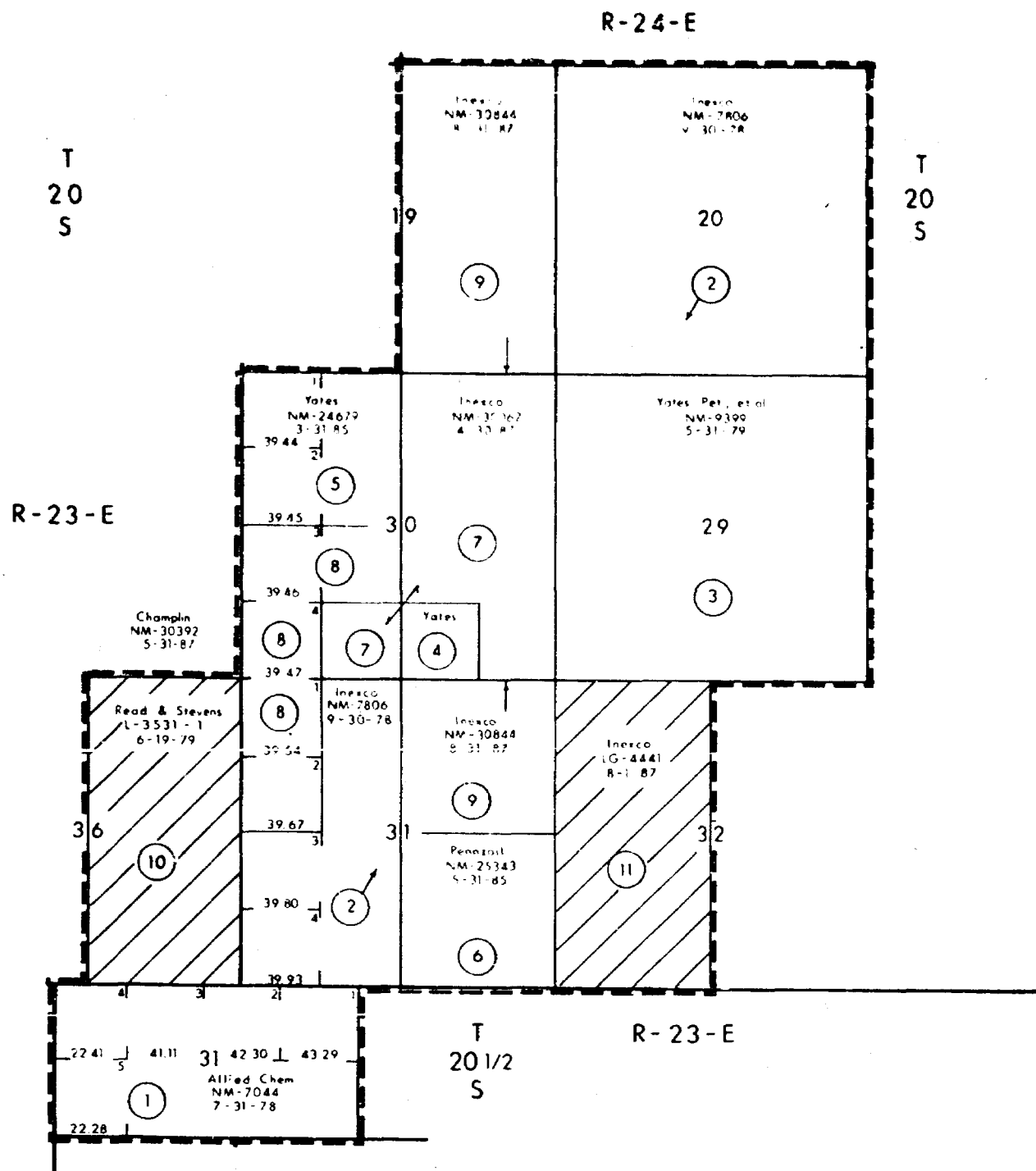
Vice President of Inexco Oil Company

Delaware corporation, for and on behalf of said Corporation. (State of Incorp.)

My Commission Expires:

6-30-78

Donna J. Burger  
Notary Public



--- Unit Outline



Tract No.



Federal Lands  
3,168.15 Acres  
83.19% of Unit Area



State of New Mexico Lands  
640.00 Acres  
16.81% of Unit Area

# LONG BOX UNIT AREA EDDY COUNTY, NEW MEXICO EXHIBIT "A"

Scale in Miles



NEXCO OIL COMPANY

1100 Milam Bldg. - Houston, Texas 77002  
713-651-3300

## EXHIBIT "B"

**SCHEDULE OF LANDS AND LEASES**  
**LONG BOX UNIT AREA**  
**EDDY COUNTY, NEW MEXICO**

SECTION OF LANDS	ACRES	SERIAL NO. AND EXP. DATE	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD AND PERCENTAGE	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE
1-20-S, R-24-E Sec. 31; SE 1/4	291.39	NM-7044 7-31-78	USA 12.5	Inexco Oil Co.*	All C. E. Strange	5.00% Inexco Oil Co.* All
1-20-S, R-24-E Sec. 31; SE 1/4	879.73	NM-7806 9-30-78	USA 12.5	Inexco Oil Co.	All A. D. Raby David J. Sorenson \$3000 per acre out of 2.25%	4.00% Inexco Oil Co.
1-20-S, R-24-E Sec. 31; SE 1/4	640.00	NM-9392 5-31-79	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% Edward J. Abraham & 25.00% T. David Ling 25.00% 25.00%	Same as lessee of record
1-20-S, R-24-E Sec. 31; SE 1/4	40.00	NM-2261 9-30-84	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% B. E. Stewart 25.00% 25.00% 25.00%	Same as lessee of record
1-20-S, R-24-E Sec. 31; SE 1/4	158.89	NM-24679 3-31-85	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% Mary J. Castell 25.00% 25.00% 25.00%	Same as lessee of record
1-20-S, R-24-E Sec. 31; SE 1/4	160.00	NM-25343 5-31-85	USA 12.5	Pennzoil Company	All None	Pennzoil Company All

\*Assignment filed from Allied Chemical Co. to C. E. Strange 6-7-78, approved effective 7-1-78, and Assignment from C. E. Strange to Inexco Oil Company filed 6-15-78, approved effective 7-1-78.

[illegible]

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

ATTEST:

[Signature]  
Assistant Secretary

YATES PETROLEUM CORPORATION

By:

[Signature]  
Vice President

INDIVIDUAL

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF NEW MEXICO  
COUNTY OF EDDY

The foregoing instrument was acknowledged before me this 1<sup>st</sup> day of June, 1978, by John A. Yates who is Vice President of YATES PETROLEUM CORPORATION a New Mexico corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

8/20/80

[Signature]  
Notary Public



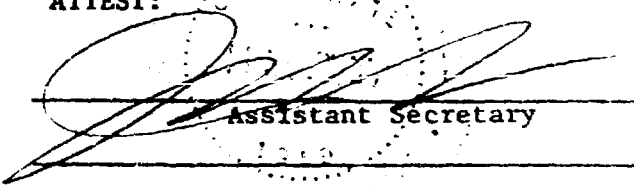
CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO


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IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

ATTEST:

YATES DRILLING COMPANY

  
Assistant Secretary

By:   
President

INDIVIDUAL

3-4-5

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of

\_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF New Mexico  
COUNTY OF Eddy

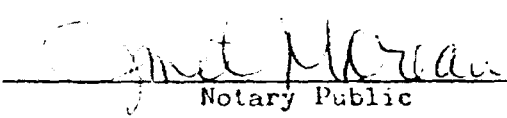
The foregoing instrument was acknowledged before me this 15 day of

June, 1978, by Rayton Yates who is President

of YATES DRILLING COMPANY a New Mexico corporation,

for and on behalf of said corporation.

MY COMMISSION EXPIRES: \_\_\_\_\_

  
Notary Public

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

ATTEST:

ABO PETROLEUM CORPORATION

[Signature]  
Secretary

By:

[Signature]  
President

INDIVIDUAL

345

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF New Mexico  
COUNTY OF Eddy

The foregoing instrument was acknowledged before me this 1st day of June, 1978, by John A. Gatta who is President of ABO PETROLEUM CORPORATION a New Mexico corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

[Signature]  
Notary Public

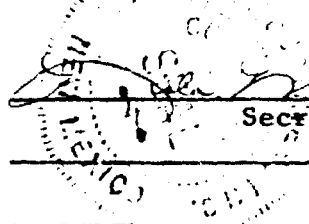
CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

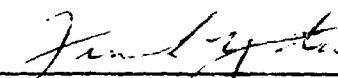
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IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

ATTEST: MYCO

MYCO INDUSTRIES, INC.

  
\_\_\_\_\_  
Secretary

By:   
\_\_\_\_\_  
President

INDIVIDUAL

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ }

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES:

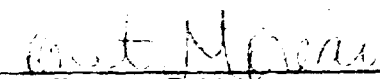
\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF New Mexico }  
COUNTY OF Eddy }

The foregoing instrument was acknowledged before me this 15 day of June, 1978, by Frank L. White who is President of MYCO INDUSTRIES, INC. a New Mexico corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

  
\_\_\_\_\_  
Notary Public

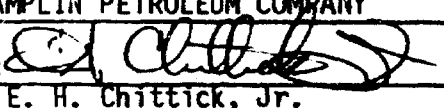
CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

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IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

  
ASSISTANT SECRETARY

CHAMPLIN PETROLEUM COMPANY

By:   
E. H. Chittick, Jr.  
Vice President and Regional Manager

INDIVIDUAL

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of

\_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public


CORPORATE

STATE OF TEXAS  
COUNTY OF HARRIS

The foregoing instrument was acknowledged before me this 15th day of

June, 1978, by E. H. Chittick, Jr. who is Vice President  
of CHAMPLIN PETROLEUM COMPANY a DELAWARE corporation,  
for and on behalf of said corporation.

MY COMMISSION EXPIRES:

  
Notary Public

VIRGINIA L. DeCAMP  
Notary Public in and for Harris County, Texas  
My Commission Expires May 11, 1979

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

ATTEST:

John L. Anderson, Jr.  
Secretary

READ & STEVENS, INC.

Norman L. Stevens, Jr.  
V-Pres.

INDIVIDUAL

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF NEW MEXICO  
COUNTY OF CHAVES

The foregoing instrument was acknowledged before me this 26th day of June, 1978, by Norman L. Stevens, Jr. who is Vice-President of READ & STEVENS, INC. a Delaware corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

April 21, 1979

George L. L. L.  
Notary Public

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

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IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

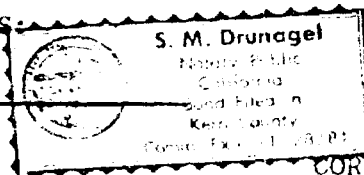
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
C. E. Strange  
Sherrie R. Strange  
P.O. Box 61, Bakersfield, CA 93302

INDIVIDUAL

STATE OF California  
COUNTY OF Kern

The foregoing instrument was acknowledged before me this 3rd day of April, 1978, by C.E. Strange and Sherrie R. Strange.

MY COMMISSION EXPIRES:



S. M. Drunagel  
Notary Public

CORPORATE

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_ of \_\_\_\_\_ a \_\_\_\_\_ corporation, for and on behalf of said corporation.


MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

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IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

  
\_\_\_\_\_  
Mary A. Raby  
\_\_\_\_\_

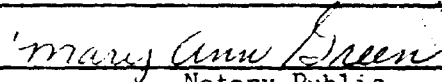
INDIVIDUAL

STATE OF New Mexico )  
COUNTY OF Chaves )

The foregoing instrument was acknowledged before me this 28th day of March, 1978, by A. D. Raby & Mary A. Raby

MY COMMISSION EXPIRES:

9-10-78

  
\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_ of \_\_\_\_\_ a \_\_\_\_\_ corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

Edward J. Abraham & T. David Ling  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INDIVIDUAL

STATE OF Texas      §  
                                 §  
COUNTY OF El Paso      §

The foregoing instrument was acknowledged before me this 31st day of March, 1978, by Edward J. Abraham & T. David Ling.

MY COMMISSION EXPIRES:  
11/30/78

Oscar Lopera  
Notary Public  
Oscar Lopera

CORPORATE

STATE OF \_\_\_\_\_ §  
                                 §  
COUNTY OF \_\_\_\_\_ §

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_ of \_\_\_\_\_ a \_\_\_\_\_ corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public



CONSENT AND RATIFICATION  
LONG FOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Fox Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Fox Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

Ruth Castel  
\_\_\_\_\_  
\_\_\_\_\_

Mary Jean Castel  
\_\_\_\_\_  
\_\_\_\_\_

INDIVIDUAL

5

STATE OF Oklahoma }

COUNTY OF Tulsa }

The foregoing instrument was acknowledged before me this 6<sup>th</sup> day of

April, 1978, by Ruth + Mary Jean Castel.

MY COMMISSION EXPIRES:

My Commission Expires June 26, 1979

Justy Janet Barber  
Notary Public

CORPORATE

STATE OF \_\_\_\_\_ }

COUNTY OF \_\_\_\_\_ }

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of

\_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_

of \_\_\_\_\_ a \_\_\_\_\_ corporation,

for and on behalf of said corporation.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

CONSENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ *Ralph F. Petty*  
\_\_\_\_\_

INDIVIDUAL

STATE OF NEW MEXICO }  
COUNTY OF SANTA FE }

The foregoing instrument was acknowledged before me this 17th day of April, 1978, by Ralph F. Petty, Jr. and Gayle Petty, his wife.

MY COMMISSION EXPIRES:  
February 6, 1980

*Patricia B. Murray*  
Notary Public

CORPORATE

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ }

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_ of \_\_\_\_\_ a \_\_\_\_\_ corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

ACKNOWLEDGMENT AND RATIFICATION  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

The undersigned, (whether one or more) hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Long Box Unit Area embracing lands situated in Eddy County, New Mexico, which said Agreement is dated the 20th day of November, 1977, and acknowledged that they have read the same and are familiar with the terms and conditions thereof. The undersigned, also being the owners of the leasehold, royalty, or other interests in the lands or minerals embraced in said unit area, as indicated on the schedule attached to said Unit Agreement as Exhibit "B," do hereby commit all of their said interests to the Long Box Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Roy G. Barton Jr.*  
\_\_\_\_\_  
\_\_\_\_\_

INDIVIDUAL

STATE OF NEW MEXICO )  
COUNTY OF SAN JUAN )

The foregoing instrument was acknowledged before me this 31st day of March, 1978, by Roy G. Barton Jr.

MY COMMISSION EXPIRES:  
MY COMMISSION EXPIRES  
1-14-81

*Opax Barbaree*  
\_\_\_\_\_  
Notary Public

CORPORATE

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by \_\_\_\_\_ who is \_\_\_\_\_ of \_\_\_\_\_ a \_\_\_\_\_ corporation, for and on behalf of said corporation.

MY COMMISSION EXPIRES:

\_\_\_\_\_  
Notary Public

FORE 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. 6118  
Order No. R-5620

APPLICATION OF INEXCO OIL COMPANY  
FOR APPROVAL OF THE LONG BOX UNIT  
AGREEMENT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 4, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 17th day of January, 1978, 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, Inexco Oil Company, seeks approval of the Long Box Unit Agreement covering 3,808.14 acres, more or less, of State and Federal lands described as follows:

EDDY COUNTY, NEW MEXICO  
TOWNSHIP 20 SOUTH, RANGE 23 EAST, NMPM  
Section 36: E/2

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM  
Section 19: E/2  
Section 20: All  
Sections 29 through 31: All  
Section 32: W/2

TOWNSHIP 20 1/2 SOUTH, RANGE 23 EAST, NMPM  
Section 31: All

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

-2-

Case No. 6118  
Order No. R-5620

IT IS THEREFORE ORDERED:

- (1) That the Long Box 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 Commissioner of Public Lands for the State of New Mexico and 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.
- (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

PHIL R. LUCERO, Chairman

  
EMERY C. ARNOLD, Member

  
JOE D. RAMEY, Member & Secretary

S E A L

jr/



# NEW MEXICO STATE LAND OFFICE

## CERTIFICATE OF APPROVAL

COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO

LONG BOX UNIT  
EDDY COUNTY, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated November 20, 1977, which said Agreement has been executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement, the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, and 7-11-48, New Mexico Statutes Annotated, 1953 Compilation, I, the undersigned Commissioner of Public Lands of the State of New Mexico, do hereby consent to and approve the said Agreement, however, such consent and approval being limited and restricted to such lands within the Unit Area, which are effectively committed to the Unit Agreement as of this date, and, further, that leases insofar as the lands covered thereby committed to this Unit Agreement shall be and the same are hereby amended to conform with the terms of such Unit Agreement, and said leases shall remain in full force and effect in accordance with the terms and conditions of said Agreement. This approval is subject to all of the provisions and requirements of the afore-said statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 27th day of June, 19 78.

  
COMMISSIONER OF PUBLIC LANDS  
of the State of New Mexico



# United States Department of the Interior

## GEOLOGICAL SURVEY

P. O. Drawer 1057  
Roswell, New Mexico 88201

July 3, 1978

Randolph M. Richardson  
P. O. Box 819  
Roswell, New Mexico 88201

No. 6118

Dear Mr. Richardson:

One approved copy of the Long Box unit agreement, Eddy County, New Mexico, is enclosed. Such agreement, with Inexco Oil Company as unit operator, has been assigned No. 14-08-0001-16906, and is effective as of this date, the same day as approved. You are requested to furnish all principals with appropriate evidence of this approval.

You are requested to furnish the Commissioner of Public Lands, the Oil Conservation Commission, both of New Mexico, and all other interested principals with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) J. A. GILLHAM

J. A. GILLHAM  
Acting Oil & Gas Supervisor, SRNA

Enclosure

cc:  
NMOCC, Santa Fe (ltr. only) // This Copy for  
Com. Pub. Lands, Santa Fe (ltr. only)

Unit Name LONG BOX UNIT (EXPLORATORY)  
Operator INEXCO OIL COMPANY  
County EDDY

DATE	OCC CASE NO. 6118	EFFECTIVE DATE	TOTAL ACREAGE	STATE	FEDERAL	INDIAN-FEE	SEGREGATION CLAUSE	TERM
APPROVED	OCC ORDER NO. R-5620	7-3-78	3,808.14	640.00	3,168.14	None	Yes	5 yrs.

Commissioner : 1-17-78

UNIT AREA

TOWNSHIP 20 SOUTH, RANGE 23 EAST, NMPM  
Section 36: E/2

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM  
Section 19: E/2  
Section 20: A11  
Sections 29 through 31: A11  
Section 32: W/2

TOWNSHIP 20~~4~~ SOUTH, RANGE 23 EAST, NMPM  
Section 31: A11



Unit Name LONG BOX UNIT (EXPLORATORY)  
 Operator INEXCO OIL COMPANY  
 County EDDY

STATE TRACT NO.	LEASE NO.	INSTI- TUTION	SEC.	TWP.	RGE.	SUBSECTION	RATIFIED		ACREAGE NOT RATIFIED	LESSEE
							DATE	ACRES		
10	L-3531-1	C.S.	36	20S	23E	E/2	6-26-78	320.00		Read & Stevens, Inc.
11	LG-4441	C.S.	32	20S	24E	W/2	5-31-78	320.00		Inexco Oil Company



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. 6118  
Order No. R-5620

APPLICATION OF INEXCO OIL COMPANY  
FOR APPROVAL OF THE LONG BOX UNIT  
AGREEMENT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 4, 1978,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 17th day of January, 1978, 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, Inexco Oil Company, seeks approval  
of the Long Box Unit Agreement covering 3,808.14 acres, more or  
less, of State and Federal lands described as follows:

EDDY COUNTY, NEW MEXICO  
TOWNSHIP 20 SOUTH, RANGE 23 EAST, NMPM  
Section 36: E/2

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM  
Section 19: E/2  
Section 20: All  
Sections 29 through 31: All  
Section 32: W/2

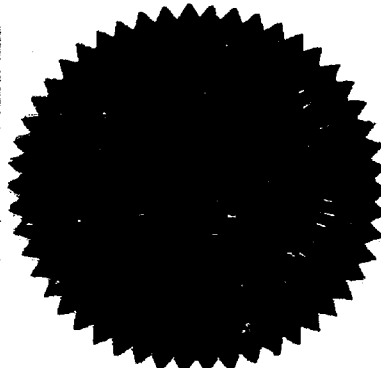
TOWNSHIP 20 1/2 SOUTH, RANGE 23 EAST, NMPM  
Section 31: All

(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 Long Box 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 Commissioner of Public Lands for the State of New Mexico and 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.
- (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.



S E A L

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

  
EMERY C. ARNOLD, Member

  
JOE D. RAMEY, Member & Secretary

jr/

Dockets Nos. 2-78 and 3-78 are tentatively set for hearing on January 18 and February 8, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 4, 1978

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- CASE 6113: Application of Transocean Oil, Inc., for a unit agreement, Catron County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Cibola Unit Area comprising 30,733 acres, more or less, of Federal, State, and fee lands in Townships 1 and 2 North, Ranges 14 and 15 West, Catron County, New Mexico.
- CASE 6114: Application of Texas Oil and Gas Company for special pool rules or a spacing exception, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Shugart-Pennsylvanian Gas Pool, Eddy County, New Mexico, to provide for 320-acre spacing rather than 160 acres. In the absence of objection, this pool will be placed on the standard 320-acre spacing for Wolfcamp and Pennsylvanian gas pools rather than the present 160-acre spacing. In the alternative applicant seeks the assignment of a 320-acre gas spacing and proration unit consisting of the E/2 of Section 33, Township 18 South, Range 31 East, Eddy County, New Mexico, to a well to be drilled to the Pennsylvanian formation at a standard location thereon.
- CASE 6096: (Continued from November 30, 1977, Examiner Hearing)
- Application of Texas Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the S/2 of Section 14, Township 21 South, Range 34 East, Lea County, New Mexico, to be dedicated to applicant's South Wilson State Well No. 1 to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6115: Application of Merrion and Bayless for downhole commingling, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek approval for the downhole commingling of Pictured Cliffs and Chacra production in their Jicarilla 428 Wells Nos. 3, 4, and 5, located respectively, in Unit M of Section 29 and Unit D of Section 32 and Section 31, Township 23 North, Range 4 West. Applicant further seeks blanket approval for downhole commingling of said formations in Sections 29 thru 32, Township 23 North, Range 4 West, and Sections 22 thru 26 and 35 and 36, Township 23 North, Range 5 West, all in Sandoval County, New Mexico.
- CASE 6116: Application of Merrion and Bayless for salt water disposal, San Juan County, New Mexico. Applicants, in the above-styled cause, seek authority to dispose of produced salt water into the Mesaverde formation thru the perforated interval from 3374 feet to 3395 feet in applicants' Hudson Well No. 1, located in Unit D of Section 26, Township 30 North, Range 12 West, San Juan County, New Mexico.
- CASE 6117: Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its South Culebra Bluff Unit Area comprising 1280 acres, more or less, of Federal and fee lands in Township 23 South, Range 28 East, Eddy County, New Mexico.
- CASE 6118: Application of Inxco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Long Box Unit Area comprising 3,808 acres, more or less, of Federal and State lands in Townships 20 and 20 1/2 South, Ranges 23 and 24 East, Eddy County, New Mexico.
- CASE 6119: Application of Caulkins Oil Company for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Pictured Cliffs, Chacra and Mesaverde production in the wellbore of its Breech Well No. 228, to be located in Unit A of Section 18, Township 26 North, Range 6 West, Rio Arriba County, New Mexico, and to dually complete the commingled formations and the Dakota formation in said well.
- CASE 6120: Application of Caulkins Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Mesaverde production in the wellbores of its Breech E Wells Nos. 109 in Unit M of Section 3 and 104 in Unit P of Section 5 and its Breech A Wells Nos. 627 in Unit B of Section 8, 677 and 679 in Units L and J, respectively, of Section 9, and 207 in Unit A of Section 10, all in Township 26 North, Range 6 West, Rio Arriba County, New Mexico.
- CASE 6121: Application of Caulkins Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Pictured

INEXCO OIL COMPANY

GEOLOGY OF THE PROPOSED  
LONG BOX UNIT

EDDY COUNTY, NEW MEXICO

M. L. Feldman

November 17, 1977

BEFORE EXAMINER NUTTER
CIL OF THE COMMISSION
1-4-78, NO. <u>A, E, and F</u>
CASE NO. <u>6118</u>



December 16, 1977

Mr. Ray Noble  
Geologist  
U.S. Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Re: Proposed Long Box Unit  
Eddy Co., New Mexico  
(Expl. Memo #65-77)

Dear Ray:

As per your request by phone this date, I would like to supplement our 11-17-77 report, "Geology of the Proposed Long Box Unit", with the following data:

The west half of Section 21, T20S, R24E, was not included in the proposed Long Box Unit because of two factors. First, it is believed to be structurally low as illustrated on Exhibit "C". Secondly, the trace of the fault may be north-south locally, making most of this half section on the down-thrown side along with the economically marginal to sub-marginal Mewbourne Oil (Mark Prod.) No. 1 Foster, shut-in gas well in the east half of section 21. Sonic log of this well indicates it encountered only 11 feet of Morrow sandstone with greater than 7 percent porosity which we consider minimal for gas productivity in very coarse grained, non-shaley sandstone. Only 6 feet of Morrow sandstone calculates to have greater than 9 percent porosity which we consider minimal for gas productivity in non-shaley, medium grained sandstone. The gamma ray graph of the No. 1 Foster's sonic log indicates these porous sandstone zones to be argillaceous.

Ray Noble  
Dec. 16, 1977  
Page 2

The east half of Section 32, T20S, R24E was not included in the proposed Long Box Unit for two reasons: First, the Bell #1AX State in the SE corner is over 100 feet low structurally to the Mark Prod. No. 1-C State, dry Morrow venture in the west half of the Section as portrayed on Exhibit C. Second, although the No. 1 AX State encountered 48 feet of mostly non argillaceous Morrow sandstone with 29 feet of greater than 7 percent porosity, log analysis indicates it to be water wet. An Induction-Electric log run in the No. 1 AX State was utilized to reach this conclusion. This well was drilled "tight" below 7696 feet and to our knowledge no Lower Pennsylvanian test data has ever been released. However, due to the clean, thick, porous Morrow sandstone penetrated, it can probably be assumed that the operator would have made a Morrow gas completion if the zone had not been water wet.

Ray, it was a pleasure visiting with you on the phone today and I am looking forward to meeting you on my next trip to Roswell. If you or your associates need any additional information relative to our proposed Long Box Unit, please feel free to contact me.

Yours very truly,

INEXCO OIL COMPANY



M. L. "Newt" Feldman  
Area Geologist

MLF/11r

cc: R. L. Zieve  
J. C. Carlisle  
T. L. Dodds  
✓ R. M. Richardson (P.O. Box 819-Roswell, New Mexico 88201)

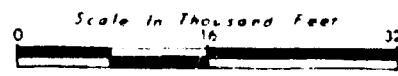


ENCLOSURES AND ATTACHMENTS

EXHIBIT <u>A</u> -----	Regional Index Map	
EXHIBIT <u>B</u> -----	Morrow Sandstone Isolith	} in pocket
EXHIBIT <u>C</u> -----	Morrow B Limestone Structure	
EXHIBIT <u>D</u> -----	Cross Section A-A'	
EXHIBIT <u>E</u> -----	Land Ownership Map of Unit Area	
EXHIBIT <u>F</u> -----	Current Well Cost Estimate	

# REGIONAL INDEX MAP

SHOWING LOCATION OF  
PROPOSED LONG BOX UNIT  
EXHIBIT A



11-18-77

MLF  
JSA



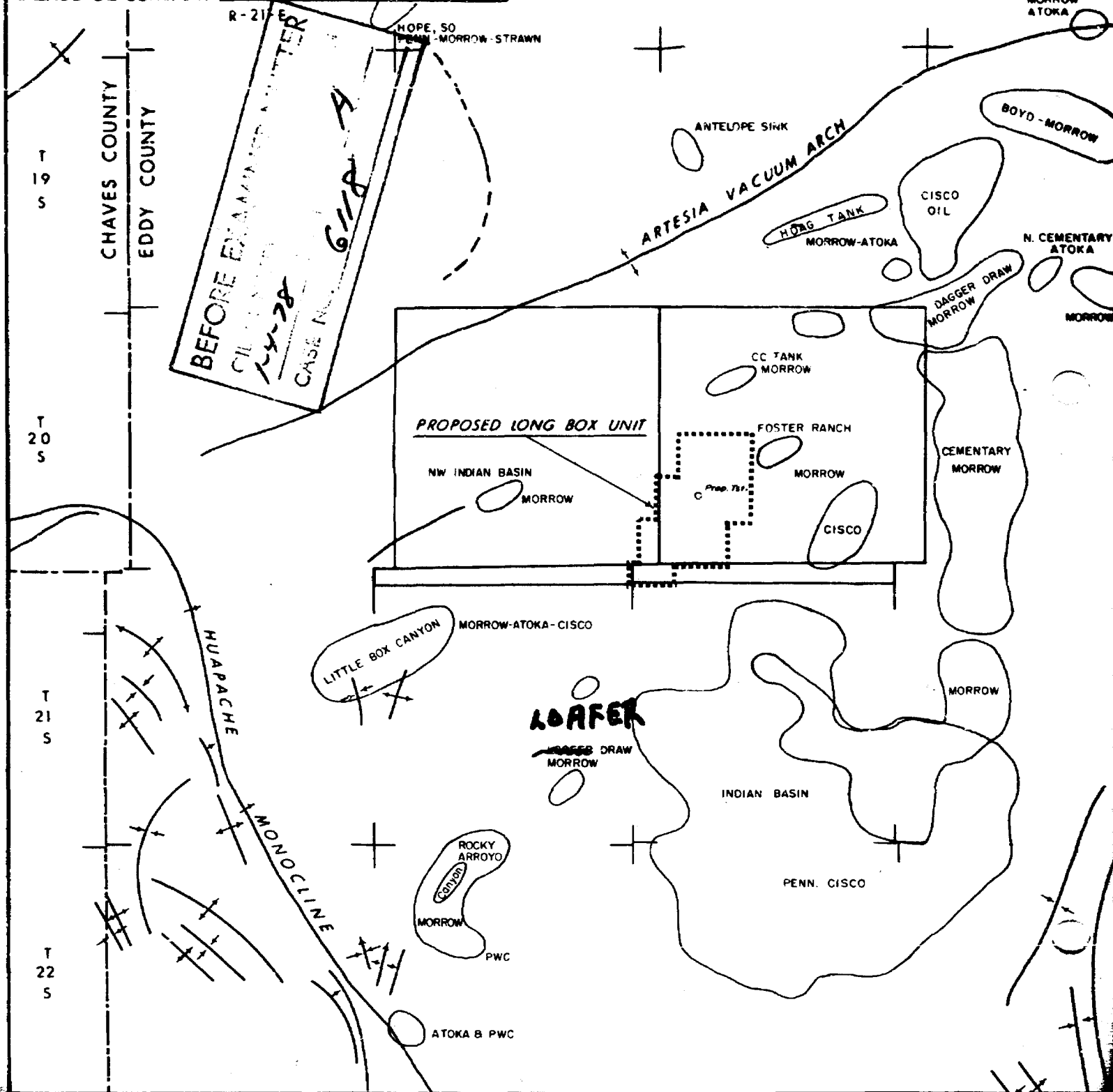
NEXCO OIL COMPANY

1100 Milam Bldg. - Houston, Texas 77002  
713-551-3300

R-23-E

R-24-E

R-25-E



GEOLOGICAL REPORT  
PROPOSED LONG BOX UNIT  
EDDY COUNTY, NEW MEXICO

PURPOSE:

Purpose of this report is to summarize the geological reasons for formation of a 3808 acre Federal Unit to be tested by a 9350 foot Pennsylvanian Morrow wildcat in the SE/4 of the NE/4 of Section 30, T20S, R24E, Eddy County, New Mexico. Total depth will be 90' below top of Chester formation unless this exceeds a maximum depth of 9500 feet.

LOCATION:

Proposed unit is 23 miles northwest of Carlsbad, New Mexico. It is near the north edge of the semi-arid Seven Rivers Embayment, a low lying topographic plain between the Huapache Monocline to the west and the Seven Rivers Hills and Azotea Mesa to the east. Locally the unit will be situated on the drainage divide between the east trending Little Box Canyon to the south and Long Draw to the north, tributaries of South Seven Rivers, a Pecos River tributary.

## PROSPECT GEOLOGY

Proposed Long Box Unit is located on the Northwest Shelf of the Delaware Basin near the southeast flank of the Pedernal Land Mass, a Pre-Cambrian positive or cratonic element. Locally it is situated on the southeast flank of the northeast-southwest, trending Artesia-Vacuum Arch (Exhibit A), a post-Pennsylvanian feature which parallels the southeast flank of the Pedernal Land Mass. Source of clastics in the Pennsylvanian Morrow Series in northeast Eddy County is thought to have been the Pedernal Land Mass. Alongshore bars of the Lower Morrow Clastic Formation in northeast Eddy Co. should parallel its southeast flank. Pene-contemporaneous drainage channels should trend perpendicular to sub-perpendicular to its southeast flank.

Ten miles west of the proposed Long Box Unit is the Huapache Monocline (Exhibit A) a Permian drape feature on the northeast flank of an Early Permian Vertical Block Uplift with greater than 3000 feet of down to the northeast throw. Post-Pennsylvanian faulting in the Long Box area should be parallel to sub-parallel to the Huapache Monocline since it is the pre-dominant tectonic element in this vicinity of the Permian Basin.

Long Box Unit (Exhibit A) is located along a Lower Morrow clastic, northeast-southwest trending, alongshore bar complex which parallels the Artesia-Vacuum Arch. Location of this bar

complex is marked by Morrow production in the Foster Ranch Field immediately east of the Unit, the Dagger Draw Field (4 miles to the northeast) and the Little Box Canyon Field (5 miles to the southwest). Local configuration of the bar is illustrated by attached sandstone isolith map (Exhibit B). Proposed location of first test well is shown on this map near the intersection of the axis of the bar and a postulated penecontemporaneous fluvial channel. In Lower Morrow age sediments such channels are often characterized by coarse to conglomeritic siliceous clastics with optimum reservoir characteristics.

Exhibit C is a structure map contoured on the top of a persistent dense limestone bed located near the top of the Morrow Clastic Formation. It portrays draping over the alongshore clastic bar. Normal post-Pennsylvanian faulting which is sub-parallel to the Huapache Uplift to which it is related is also illustrated. This faulting is in part projected from the south where it segments the Cisco reef and Morrow sandstone reservoirs of the large Indian Basin Field.

Trapping mechanisms for Morrow reservoirs of the Long Box Prospect are perceived to be the following:

- (1) Northwest shelfward facies change from coarse bar clastics to fine dense lagoonal clastics.
- (2) Southeast basinward facies change from coarse bar clastics to fine dense basinal clastics.

(3) Southwest and northeast strike facies change from coarse clastics into fine dense surge channel clastics combined with cross fault reservoir separation. A study of Indian Basin Field indicated normal fault associated reservoir separation in both Cisco reef carbonates and Morrow clastics.

#### NEARBY PRODUCTION AND SHOWS

Long Box Unit is 1 1/4 miles northwest of Indian Basin Field. It is on the same Morrow alongshore clastic bar complex as Dagger Draw Field, 4 miles to the northeast, the shut in Foster Ranch Field, 3/4 of a mile to the east and Little Box Canyon Field, 5 miles to the southwest. Dwight's Production Histories as of 1-1-77 showed the following data for two of these fields:

Field	Reservoir	# of wells	Cumulative Production to 1-1-77 (BCF)
Indian Basin	Upr. Penn.	58	678.485
Indian Basin	Morrow	12	22.580
Dagger Draw	Wolfcamp	1	.166
Dagger Draw	Strawn	1	.122
Dagger Draw	Atoka	1	.175
Dagger Draw	Morrow	2	3.287

Since the beginning of 1977, three new Morrow gas wells have been completed in Dagger Draw Field. Foster Ranch Field is a single shut in gas well. Little Box Canyon was a single shut in Morrow gas well until this year during which 5 new gas wells have been completed in Cisco, Atoka and Morrow reservoirs.

Two dry holes are present on the southeast flank of the prospect within the unit outline. These are Tesoro #1 Huber-Federal, NWSE Sec. 29, 20S, 24E and Mark Production Co. #1 State "C", NESW Sec. 32, 20S, 24E.

The #1 Huber-Federal was plugged and abandoned 10-22-73 at a total depth of 9462 feet in Mississippian limestone. Only successful D.S.T. was of Cisco-Canyon section from 7672 to 7820 ft. Open 1 hr, G.T.S. 12 mins. at 163-115 MCF with 200 ft. SGCM recovered; 1 hr ISIP 3143# and 2 hr FSIP 3179#. Gas flow was from a 13 ft. thick coarse grained friable sandstone bed topped at 7791 ft. Density-Neutron log exhibits a prominent gas effect in this zone and 6-8 ft. of 5 to 8% porosity. The normal shut in pressures indicate the gas flow decrease was related to formation damage and that a small gas well might be completed in this zone with acid and/or fracture treatment. Morrow sandstone beds were relatively thin and dense, but the Density-Neutron log showed 8 feet with gas effect anomalies. Two attempted Morrow tests failed. Two other untested zones with good gas effect anomalies were a 9 foot thick Strawn-sandstone topped at 8303

feet and a 4 foot Cisco reef limestone zone with 5-11% porosity topped a 7432 feet. A small gas well could probably be completed in the Cisco zone.

The #1 State "C" was plugged and abandoned 3-6-75 at a total depth of 9225 in Mississippian Barnett shale. A D.S.T. of Wolfcamp limestone from 5585 to 5645 feet had G.T.S. in 22 mins and recovered G.C.M. A D.S.T. of Cisco reef limestone from 7385 to 7555 feet had GTS in 5 mins A.R.O. 1.4 MMCFGPD and recovered 10 bbls of sulfur water. Gas flow appears to have been from fractures at 7380, 7500 and 7605 feet. A west offset or a northwest diagonal offset in the same west half of Section 32 would appear to have a good chance of obtaining commercial Cisco production. Morrow sandstones penetrated by this test were thin (Exhibit B) and had low porosity, but yielded G.T.S. on a D.S.T. from 8845-8995 feet.

No successful tests were obtained in the Pan American #1 Long Draw Unit, 1964 dry and abandoned Morrow test on the northwest flank of the prospect. Shows in wells on the northeast end of the prospect are illustrated on cross section A-A' (Exhibit D).



## MARKERS, LITHOLOGY AND OBJECTIVES

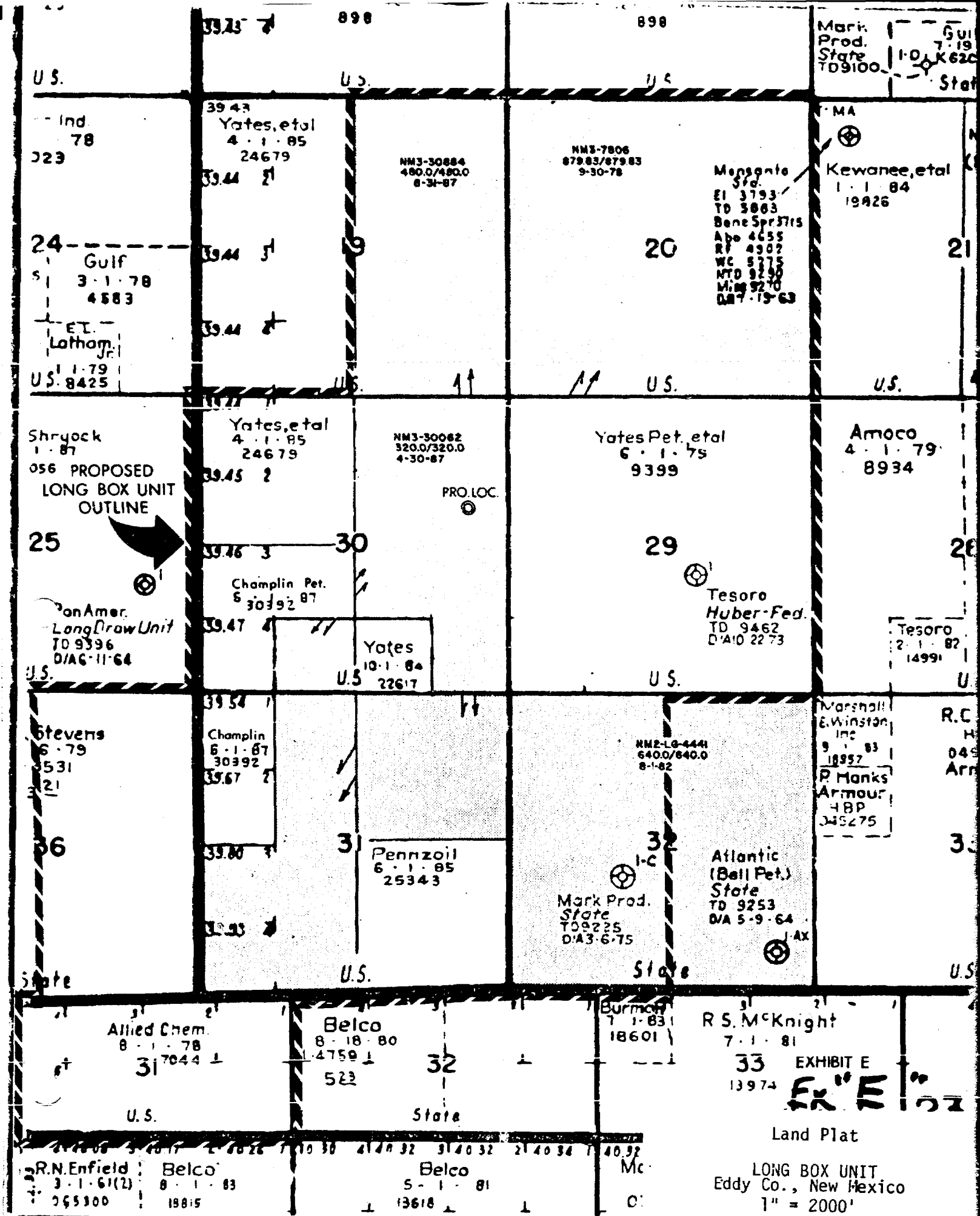
Proposed first test of the Long Fox Unit will be located 1980 FNL & 660 FEL, Sec. 30, T20S, R24E, Eddy Co., New Mexico. Test will be drilled to a projected total depth of 9350 feet in Mississippian Chester limestone. Based on an estimated derrick floor elevation of 4000', the following geologic markers should be encountered:

<u>Mbr, Fmtn, Series or Zone</u>	<u>Depth (Subsea)</u>	<u>Lithology</u>
Grayburg	-0- 484'	dolomite & anhydrite
San Andres	484 (+3516)	dolomite
Glorieta	1974 (+2026)	sandstone & dolomite
Yeso	2145 (+1855)	dolomite
Tubb	2741 (+1259)	sandstone & dolomite
Drinkard - U.Bone Springs	2939 (+1061)	dolomite w/sandstone siltstone & shale
Abo	4843 (-843)	dolomite w/shale & w/chert near base
Third Bone Springs	5421 (-1421)	shale, siltstone, limestone, dolomite, & chert
Wolfcamp	5616 (-1616)	limestone, shale, sandstone w/dolomite red beds & conglomerate
Cisco	7290 (-3290)	limestone w/shale and sandstone
Cisco reef - Canyon - Strawn	7492 (-3492)	limestone w/ sand- stone & shale

<u>Mbr, Fmtn, Series or Zone</u>	<u>Depth (Subsea)</u>	<u>Lithology</u>
Atoka	8480 (-4480)	limestone & shale
Morrow ls	8700 (-4700)	limestone in part oolitic
Morrow Clastics	8825 (-4825)	sandstone, siltstone, shale, limestone
Morrow B - Barnett sh	8860 (-4860)	dense limestone over intercalated oolitic limestone, sandstone, siltstone, & shale/ w lignite over Miss. Barnett shale and siltstone w/lignite (bleeds gas)
Chester	9210 (-5210)	skeletal, algal lump, pelletal limestone

Max. TD 9500' or 90' into Chester at a lesser depth.

Primary objective is Morrow sandstone. Secondary objectives are Abo, Wolfcamp, Cisco-Canyon, Strawn and Atoka. All of these zones are productive nearby within ten miles of the proposed location. Other possible pays are San Andres and Yeso which are productive on structural and stratigraphic strike to the north-east.





# INEXCO OIL COMPANY

EXHIBIT F

## COST ESTIMATE

AFE No. (Inexco Property No.)

Prospect

Well Name and Number

Long Box

Long Box Unit #1

Estimated Days to Drill

Estimated Days to Complete

1-4-78

CASE

6 1/8 1980' ENL & 660'  
Location: FEL of Section 30-120S-R24E  
Eddy County  
New Mexico

OBJECTIVES	SANDS	AND	DEPTH
	Morrow Limestone		8,700
	Morrow Clastics		8,825
	Morrow "B" Limestone		8,860
	Miss. Chester		9,210

Est. T.D. 9,350

Est. Spud

A F E Prepared

By: 11/17/77

☒ Drill☐ Workover Same Zone☐ Recomplete in New Zone

DESCRIPTION		ESTIMATED COSTS		ACTUAL COST
		DRILLING	COMPLETION	
INTANGIBLE COSTS (343):				
01	Access and Location Costs	35,000	10,000	
02	Move-in, Rig-up, Rig-down, Move-out	30,000		
	Contract Drilling			
03	Footage _____ ft. at \$ _____ ft.			
04	Daywork 43 days at \$ 4100 day	176,300		
05	Completion Unit 12 days at \$ 1000 day		12,000	
06	Fuel, Power, Water and Water Lines	18,000		
07	Bits, Reamers and Stabilizers	25,000		
08	Equipment Rental	6,800		
09	Cementing and Squeezing -			
	Conductor Casing	2,500		
	Surface Casing			
	Intermediate Casing	11,000		
	Production Casing		9,000	
	Liner			
	Other			
10	Drilling Mud and Chemicals	40,000		
10	Mud Logger	10,000		
11	Logging, Coring and Testing -			
	Cores			
	DST's 6	12,000		
	Logs			
	DIL 0-1900 & 1900 - (2 runs)			
	DLL/RX0 1900 - TD (1 run)			
	BHC Density/CNL 0-1900 & 1900-TD (2 runs)	22,200		
12	Perforating		6,000	
12	Acidizing and Fracturing			
13	Labor and Supervision	2,000	2,000	
13	Contract Labor	29,700	14,000	
14	Drilling Overhead	2,700	800	
15	Transportation	2,000	6,000	
16	Sales Tax	1,000	7,000	
17	Other Miscellaneous Intangible Costs	10,000	5,000	
18	Losses, Damages and Abandonment	16,000	(6,000)	
19	Fishing Tool Expense and/or Directional Drilling			
20	Dry Hole Contributions			
22	Well Control Insurance	3,200		
TOTAL INTANGIBLE		\$ 521,200	\$ 455,400	\$ 65,800

DESCRIPTION		ESTIMATED COSTS		ACTUAL COST
		DRILLING	COMPLETION	
TANGIBLE COSTS (342):				
01	Conductor Csg. _____ 50 ft. of _____ 20 at _____ 28.00 /ft	1,400		
02	Surface Csg. _____ 200 ft. of _____ 13-3/8 at _____ 13.80 /ft	2,800		
03	Intermediate Csg. _____ 2000 ft. of _____ 8-5/8 at _____ 6.94 /ft	13,900		
04	Production Csg. _____ 9350 ft. of _____ 5-1/2 at _____ 5.50 /ft		64,900	
05	Liner _____ 9350 ft. of _____ 2-7/8 at _____ 3.20 /ft		30,000	
06	Tubing _____ ft. of _____ at _____ /ft	5,000		
07	Casing Head Assembly .....		15,000	
07	Tubing Head Assembly .....			
08	Pumping Unit .....			
09	Prime Mover .....		15,000	
12	Installation Costs and Non-Controllable Well Equipment .....		8,000	
15	Storage Tanks .....			
16	Separator .....		15,000	
17	Dehydrator .....			
18	Heater - Treater .....			
19	LACT Unit .....		20,000	
20	LTX or Production Unit .....			
21	Line Pipe .....			
22	Gas Recorders .....		18,000	
23	Installation Costs and Non-Controllable Lease Equipment .....			
TOTAL TANGIBLE		\$ 209,000	\$ 23,100	\$ 185,900
TOTAL WELL		\$ 730,200	\$ 478,500	\$ 251,700

It is recognized that the amounts herein are estimates only and approval of this authorization shall extend to the actual costs incurred in conducting the operation specified, whether more or less than that herein set out.

#### WELL CONTROL INSURANCE

This AFE includes in Item 22, Page 1, Well Control Insurance, during drilling and completion only, covering: 1) the cost of control of a well in the event of a blowout; 2) bodily injury or property damage liability caused by pollution, seepage or contamination; 3) pollution cleanup; 4) extinguishing of an oil or gas well fire; and 5) redrilling of the well. You MUST INDICATE your acceptance or declination of your prorata share of the subject insurance by signing below. NO INDICATION WILL BE A CONCLUSIVE PRESUMPTION OF ACCEPTANCE.

If you decline the coverage offered, you must satisfy Inexco that you already have insurance or that you can bear the out of pocket cost of well control.

#### \*INSURANCE COVERAGE ONLY

Accept \_\_\_\_\_

Decline \_\_\_\_\_

☐ Will Self Insure ☐ Have Alternate Insurance

\*PLEASE BE SURE YOU HAVE SIGNED IN BOTH REQUIRED PLACES

## INSURANCE

Operator shall at all times during the term of this Agreement carry insurance to protect the parties hereto as follows:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

(2) Comprehensive General Public Liability Insurance, including completed operations insurance, with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

The policy is extended to cover as additional insureds all co-owners, joint ventures, mining partners with the name insured in the oil and gas properties.

(3) Automobile Public Liability Insurance covering all automotive equipment used in performance of work under this agreement with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

If automotive equipment used is owned exclusively by Operator, no charge will be made to the Joint Account for premiums for this coverage except as provided in Section 111, Paragraph 5 of the Accounting Procedure.

Operator shall require all contractors performing work under this Agreement to carry the following insurance:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

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- \$100,000 - for loss of or damage to property in any one accident

(4) Contractual Insurance covering indemnity agreement and Contractor's other obligations under this contract with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

Excess liability insurance may be carried to meet the above requirements.

INEXCO OIL COMPANY

GEOLOGY OF THE PROPOSED  
LONG BOX UNIT

EDDY COUNTY, NEW MEXICO

M. L. Feldman

November 17, 1977

Ex A Co 6118  
Also Ex E & F

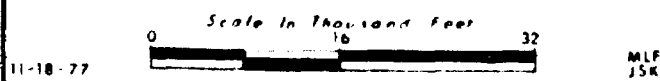
ENCLOSURES AND ATTACHMENTS

EXHIBIT <u>A</u> -----	Regional Index Map	
EXHIBIT <u>B</u> -----	Morrow Sandstone Isolith	} in pocket
EXHIBIT <u>C</u> -----	Morrow B Limestone Structure	
EXHIBIT <u>D</u> -----	Cross Section A-A'	
EXHIBIT <u>E</u> -----	Land Ownership Map of Unit Area	
EXHIBIT <u>F</u> -----	Current Well Cost Estimate	



# REGIONAL INDEX MAP

SHOWING LOCATION OF  
PROPOSED LONG BOX UNIT  
EXHIBIT A



1100 Milam Bldg. - Houston, Texas 77002  
713-651-3300

NEXCO OIL COMPANY

R-21-E

HOPE, SO  
PENN - MORROW - STRAWN

R-23-E

R-24-E

R-25-E

CISCO

RICHARD KNOB

NO ANTELOPE SINK  
MORROW - ATOKA

MORROW  
ATOKA

T  
19  
S

CHAVES COUNTY  
EDDY COUNTY

T  
20  
S

T  
21  
S

T  
22  
S

HUAPACHE  
MONOCLINE

PROPOSED LONG BOX UNIT

NW INDIAN BASIN  
MORROW

CC TANK  
MORROW

FOSTER RANCH

MORROW

CISCO

CEMENTARY  
MORROW

MORROW

INDIAN BASIN

PENN. CISCO

LOOFER DRAW  
MORROW

MORROW-ATOKA-CISCO

LITTLE BOX CANYON

ROCKY  
ARROYO

MORROW

PWC

ATOKA & PWC

BOYD - MORROW

CISCO  
OIL

HOAG TANK  
MORROW-ATOKA

N. CEMENTARY  
ATOKA

DAGGER DRAW  
MORROW

GEOLOGICAL REPORT  
PROPOSED LONG BOX UNIT  
EDDY COUNTY, NEW MEXICO

PURPOSE:

Purpose of this report is to summarize the geological reasons for formation of a 3808 acre Federal Unit to be tested by a 9350 foot Pennsylvanian Morrow wildcat in the SE/4 of the NE/4 of Section 30, T20S, R24E, Eddy County, New Mexico. Total depth will be 90' below top of Chester formation unless this exceeds a maximum depth of 9500 feet.

LOCATION:

Proposed unit is 23 miles northwest of Carlsbad, New Mexico. It is near the north edge of the semi-arid Seven Rivers Embayment, a low lying topographic plain between the Huapache Monocline to the west and the Seven Rivers Hills and Azotea Mesa to the east. Locally the unit will be situated on the drainage divide between the east trending Little Box Canyon to the south and Long Draw to the north, tributaries of South Seven Rivers, a Pecos River tributary.

## PROSPECT GEOLOGY

Proposed Long Box Unit is located on the Northwest Shelf of the Delaware Basin near the southeast flank of the Pedernal Land Mass, a Pre-Cambrian positive or cratonic element. Locally it is situated on the southeast flank of the northeast-southwest, trending Artesia-Vacuum Arch (Exhibit A), a post-Pennsylvanian feature which parallels the southeast flank of the Pedernal Land Mass. Source of clastics in the Pennsylvanian Morrow Series in northeast Eddy County is thought to have been the Pedernal Land Mass. Alongshore bars of the Lower Morrow Clastic Formation in northeast Eddy Co. should parallel its southeast flank. Pene-contemporaneous drainage channels should trend perpendicular to sub-perpendicular to its southeast flank.

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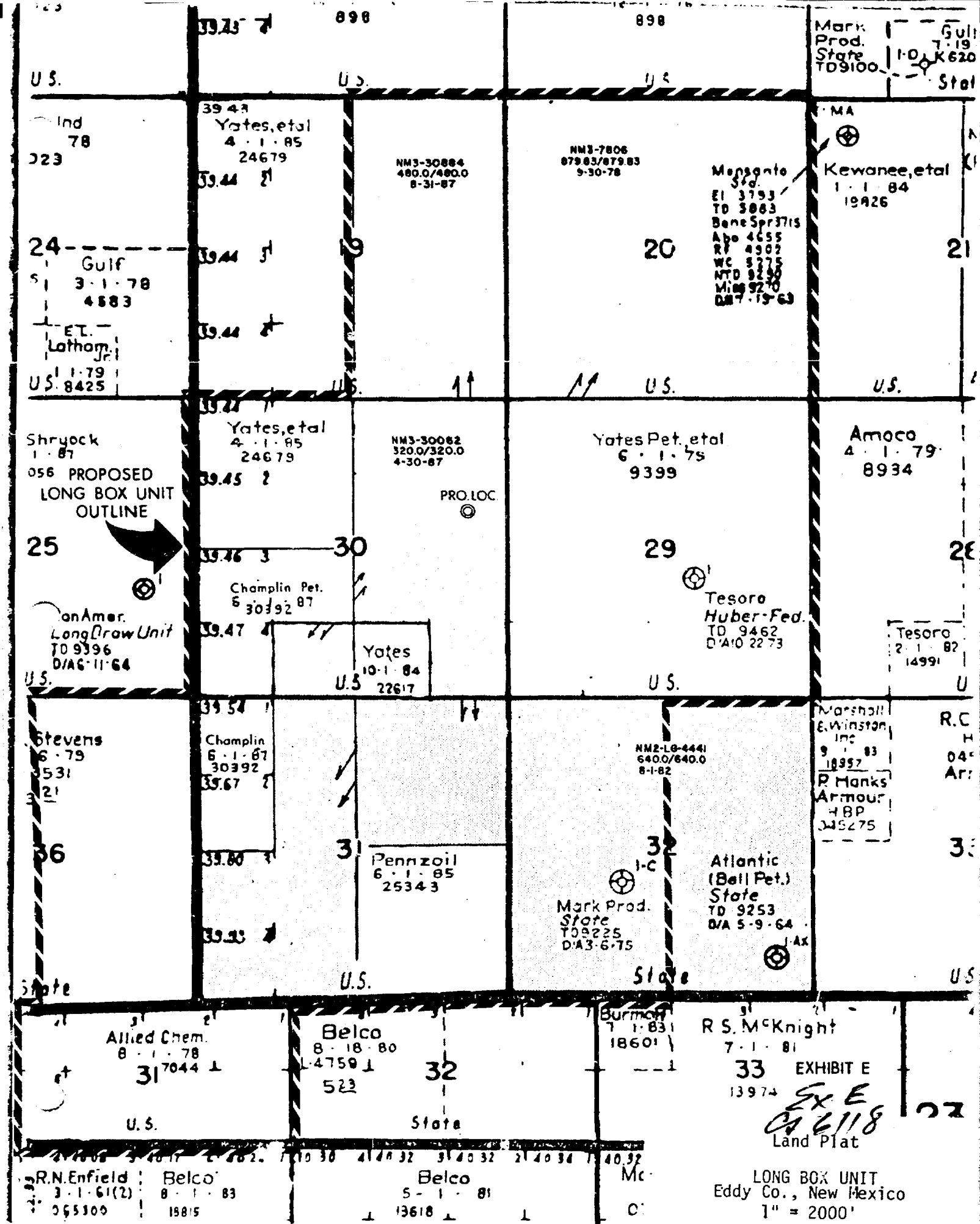
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# INEXCO OIL COMPANY

COST ESTIMATE

EXHIBIT F

Ex F  
66118

AFE No. (Inexco Property No.) \_\_\_\_\_  
Prospect \_\_\_\_\_ Long Box  
Well Name and Number \_\_\_\_\_ Long Box Unit #1

Estimated Days to Drill \_\_\_\_\_  
Estimated Days to Complete \_\_\_\_\_

Location: 1980' FNL & 660'  
FEL of Section 30-T20S-R24E  
Eddy County  
New Mexico

OBJECTIVES \_\_\_\_\_ SANDS \_\_\_\_\_ AND \_\_\_\_\_ DEPTH \_\_\_\_\_  
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Est. T.D. 9,350  
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By: 11/17/77

☒ Drill ☐ Workover Same Zone ☐ Recomplete in New Zone

DESCRIPTION		ESTIMATED COSTS		ACTUAL COST
		DRILLING	COMPLETION	
INTANGIBLE COSTS (343):-				
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	Contract Drilling			
03	Footage _____ ft. at \$ _____ ft. ....			
04	Daywork 43 days at \$ 4100 day .....	176,300		
05	Completion Unit 12 days at \$ 1000 day .....		12,000	
06	Fuel, Power, Water and Water Lines .....	18,000		
07	Bits, Reamers and Stabilizers .....	25,000		
0	Equipment Rental .....	6,800		
09	Cementing and Squeezing -			
	Conductor Casing .....	2,500		
	Surface Casing .....			
	Intermediate Casing .....	11,000		
	Production Casing .....		9,000	
	Liner .....			
	Other .....			
10	Drilling Mud and Chemicals .....	40,000		
10	Mud Logger .....	10,000		
11	Logging, Coring and Testing -			
	Cores .....			
	DST's 6 .....	12,000		
	Logs D11 0-1900 & 1900 - (2 runs)			
	ULL/RX0 1900 - TD (1 run)			
	BHC Density/CNL 0-1900 & 1900-TD (2 runs)	22,200		
			6,000	
12	Perforating .....			
12	Acidizing and Fracturing .....			
13	Labor and Supervision .....	2,000	2,000	
13	Contract Labor .....	29,700	14,000	
14	Drilling Overhead .....	2,700	800	
15	Transportation .....	2,000	6,000	
16	Sales Tax .....	1,000	7,000	
17	Other Miscellaneous Intangible Costs .....	10,000	5,000	
18	Losses, Damages and Abandonment .....	16,000	(6,000)	
1	Fishing Tool Expense and/or Directional Drilling .....			
20	Dry Hole Contributions .....			
22	Well Control Insurance .....	3,200		
TOTAL INTANGIBLE		\$ 521,200	\$ 455,400	\$ 65,800

DESCRIPTION						ESTIMATED COSTS		ACTUAL COST	
						DRILLING	COMPLETION		
TANGIBLE COSTS (342):									
01	Conductor Csg.	50	ft. of	20	at 28.00	/ft	1,400		
02	Surface Csg.	200	ft. of	13-3/8	at 13.80	/ft	2,800		
03	Intermediate Csg.	2000	ft. of	8-5/8	at 6.94	/ft	13,900		
04	Production Csg.	9350	ft. of	5-1/2	at 5.50	/ft		64,900	
05	Liner		ft. of			/ft			
06	Tubing	9350	ft. of	2-7/8	at 3.20	/ft		30,000	
07	Casing Head Assembly						5,000		
07	Tubing Head Assembly							15,000	
08	Pumping Unit								
09	Prime Mover								
12	Installation Costs and Non-Controllable Well Equipment							15,000	
15	Storage Tanks							8,000	
16	Separator								
17	Dehydrator							15,000	
18	Heater - Treater								
19	LACT Unit								
20	LTX or Production Unit							20,000	
21	Line Pipe								
22	Gas Recorders								
23	Installation Costs and Non-Controllable Lease Equipment							18,000	
TOTAL TANGIBLE						\$ 209,000	\$ 23,100	\$ 185,900	\$
TOTAL WELL						\$ 730,200	\$ 478,500	\$ 251,700	\$

It is recognized that the amounts herein are estimates only and approval of this authorization shall extend to the actual costs incurred in conducting the operation specified, whether more or less than that herein set out.

#### WELL CONTROL INSURANCE

This AFE includes in Item 22, Page 1, Well Control Insurance, during drilling and completion only, covering: 1) the cost of control of a well in the event of a blowout; 2) bodily injury or property damage liability caused by pollution, seepage or contamination; 3) pollution cleanup; 4) extinguishing of an oil or gas well fire; and 5) redrilling of the well. You MUST INDICATE your acceptance or declination of your prorata share of the subject insurance by signing below. NO INDICATION WILL BE A CONCLUSIVE PRESUMPTION OF ACCEPTANCE.

☒ If you decline the coverage offered, you must satisfy Inexco that you already have insurance or that you can bear the out of pocket cost of well control.

#### \*INSURANCE COVERAGE ONLY

Accept \_\_\_\_\_

Decline \_\_\_\_\_

☐ Will Self Insure ☐ Have Alternate Insurance

\*PLEASE BE SURE YOU HAVE SIGNED IN BOTH REQUIRED PLACES

## INSURANCE

Operator shall at all times during the term of this Agreement carry insurance to protect the parties hereto as follows:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

(2) Comprehensive General Public Liability Insurance, including completed operations insurance, with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

The policy is extended to cover as additional insureds all co-owners, joint ventures, mining partners with the name insured in the oil and gas properties.

(3) Automobile Public Liability Insurance covering all automotive equipment used in performance of work under this agreement with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

If automotive equipment used is owned exclusively by Operator, no charge will be made to the Joint Account for premiums for this coverage except as provided in Section 111, Paragraph 5 of the Accounting Procedure.

Operator shall require all contractors performing work under this Agreement to carry the following insurance:

(1) Workers' Compensation, U. S. Longshoremen's Act and Harbor Workers' coverage as required by the laws of the state where the operations are to be conducted and Employer's Liability Insurance with a limit of not less than \$100,000.

(2) Comprehensive General Public Liability Insurance with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

(3) Automobile Public Liability Insurance covering all automotive equipment used in performance of work under this agreement with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

(4) Contractual Insurance covering indemnity agreement and Contractor's other obligations under this contract with limits of not less than:

- \$250,000 - each occurrence
- \$500,000 - each accident
- \$100,000 - for loss of or damage to property in any one accident

Excess liability insurance may be carried to meet the above requirements.



December 16, 1977

Mr. Ray Noble  
Geologist  
U.S. Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Re: Proposed Long Box Unit  
Eddy Co., New Mexico  
(Expl. Memo #65-77)

Dear Ray:

As per your request by phone this date, I would like to supplement our 11-17-77 report, "Geology of the Proposed Long Box Unit", with the following data:

The west half of Section 21, T20S, R24E, was not included in the proposed Long Box Unit because of two factors. First, it is believed to be structurally low as illustrated on Exhibit "C". Secondly, the trace of the fault may be north-south locally, making most of this half section on the down-thrown side along with the economically marginal to sub-marginal Mewbourne Oil (Mark Prod.) No. 1 Foster, shut-in gas well in the east half of section 21. Sonic log of this well indicates it encountered only 11 feet of Morrow sandstone with greater than 7 percent porosity which we consider minimal for gas productivity in very coarse grained, non-shaley sandstone. Only 6 feet of Morrow sandstone calculates to have greater than 9 percent porosity which we consider minimal for gas productivity in non-shaley, medium grained sandstone. The gamma ray graph of the No. 1 Foster's sonic log indicates these porous sandstone zones to be argillaceous.

Ray Noble  
Dec. 16, 1977  
Page 2

The east half of Section 32, T20S, R24E was not included in the proposed Long Box Unit for two reasons: First, the Bell #1AX State in the SE corner is over 100 feet low structurally to the Mark Prod. No. 1-C State, dry Morrow venture in the west half of the Section as portrayed on Exhibit C. Second, although the No. 1 AX State encountered 48 feet of mostly non argillaceous Morrow sandstone with 29 feet of greater than 7 percent porosity, log analysis indicates it to be water wet. An Induction-Electric log run in the No. 1 AX State was utilized to reach this conclusion. This well was drilled "tight" below 7696 feet and to our knowledge no Lower Pennsylvanian test data has ever been released. However, due to the clean, thick, porous Morrow sandstone penetrated, it can probably be assumed that the operator would have made a Morrow gas completion if the zone had not been water wet.

Ray, it was a pleasure visiting with you on the phone today and I am looking forward to meeting you on my next trip to Roswell. If you or your associates need any additional information relative to our proposed Long Box Unit, please feel free to contact me.

Yours very truly,

INEXCO OIL COMPANY

  
M. L. "Newt" Feldman  
Area Geologist

MLF/11r

cc: R. L. Zieve  
J. C. Carlisle  
T. L. Dodds  
✓ R. M. Richardson (P.O. Box 819-Roswell, New Mexico 88201)

UNIT AGREEMENT  
FOR THE DEVELOPMENT AND OPERATION  
OF THE  
LONG BOX UNIT AREA  
COUNTY OF EDDY  
STATE OF NEW MEXICO  
NO. \_\_\_\_\_

THIS AGREEMENT, entered into as of the 20th day of November,  
1972, by and between the parties subscribing, ratifying, or consenting hereto,  
and herein referred to as the "parties hereto,"

W I T N E S S E T H :

WHEREAS, the parties hereto are the owners of working, royalty, or other  
oil and gas interests in the unit area subject to this agreement; and

WHEREAS, the Mineral-Leasing Act of February 25, 1920, 41 Stat. 437, as  
amended, 30 U. S. C. Secs. 181 et seq., authorizes Federal lessees and their re-  
presentatives 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 Commissioner of Public Lands of the State of New Mexico is  
authorized by an Act of the Legislature (Sec. 7-11-29 N.M. Statutes 1953 Annotated)  
to consent to or approve this agreement on behalf of the State of New Mexico, insofar  
as it covers and includes lands and mineral interest of the State of New Mexico; and,

WHEREAS, the Oil Conservation Commission of the State of New Mexico is author-  
ized by an Act of the Legislature (Chapter 72, Laws of 1935, as amended by Chapter  
193, Laws of 1937; Chapter 166, Laws of 1941; and Chapter 168, Laws of 1949) to ap-  
prove this agreement and the conservation provisions hereof; and,

WHEREAS, the parties hereto hold sufficient interests in the \_\_\_\_\_  
Long Box Unit Area covering the land hereinafter des-  
cribed to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to conserve natural resources,  
prevent waste, and secure 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 below-defined unit area, and agree severally among themselves as follows:

1. ENABLING ACT AND REGULATIONS. 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 or valid, pertinent, and reasonable regulations hereafter issued thereunder are accepted and made a part of this agreement as to Federal lands, provided such regulations are not inconsistent with the terms of this agreement; and as to non-Federal 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 land is located, are hereby accepted and made a part of this agreement.

2. UNIT AREA. The following described land is hereby designated and recognized as constituting the unit area:

T-20-S, R-23-E, NMPM  
Sec. 36; E $\frac{1}{2}$

T-20 $\frac{1}{2}$ -S, R-23-E, NMPM  
Sec. 31; All

T-20-S, R-24-E, NMPM  
Sec. 19; E $\frac{1}{2}$   
Secs. 20, 29, 30, 31; All  
Sec. 32; W $\frac{1}{2}$

Containing 3,808.14 acres,  
more or less.

Exhibit "A" attached hereto is a map showing the unit area and the boundaries and identity of tracts and leases in said area to the extent known to the Unit Operator. Exhibit "B" attached hereto is a schedule showing to the extent known to the Unit Operator the acreage, percentage, and kind of ownership of oil and gas interests in all land in the unit area. However, nothing herein or in said schedule 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" and "B" shall be revised by the Unit Operator whenever changes in the unit area render such revision necessary when requested by the Oil and Gas Supervisor, hereinafter referred to as "Supervisor," or when requested by the Commissioner of Public Lands of the State of New Mexico,

hereinafter referred to as "Land Commissioner," and not less than five (5) copies of the revised Exhibits shall be filed with the Supervisor and one (1) copy thereof shall be filed with the Land Commissioner, and one (1) copy with the New Mexico Oil Conservation Commission, hereinafter referred to as "State Commission."

The above-described unit area shall, when practicable, be expanded to include therein any additional lands or shall be contracted to exclude lands whenever such expansion or contraction is deemed to be necessary or advisable to conform with the purposes of this agreement. Such expansion or contraction shall be effected in the following manner:

(a) Unit Operator, on its own motion or on demand of the Director of the Geological Survey, hereinafter referred to as "Director," or on demand of the Land Commissioner, after preliminary concurrence by the Director, shall prepare a notice of proposed expansion or contraction describing the contemplated changes in the boundaries of the unit area, the reasons therefor, and the proposed effective date thereof, preferably, the first day of a month subsequent to the date of notice.

(b) Said notice shall be delivered to the Supervisor, the Land Commissioner and the State Commission, and copies thereof mailed to the last known address of each working-interest owner, lessee, and lessor whose interests are affected, advising that thirty (30) days will be allowed for submission to the Unit Operator of any objections.

(c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Supervisor, the Land Commissioner, and the State Commission, evidence of mailing of the notice of expansion or contraction and a copy of any objections thereto which have been filed with the Unit Operator, together with an application in sufficient number, for approval of such expansion or contraction and with appropriate joinders.

(d) After due consideration of all pertinent information, the expansion or contraction shall, upon approval by the Supervisor, the Land Commissioner, become effective as of the date prescribed in the notice thereof.

(e) All legal subdivisions of lands (i.e., 40 acres by Government survey or its nearest lot or tract equivalent; in instances of irregular surveys unusually large lots or tracts shall be considered in multiples of 40 acres or the nearest aliquot equivalent thereof), no parts of which are entitled to be in a participating area on or before the fifth anniversary of the effective date of the first initial participating area established under this unit agreement, shall be eliminated automatically from this agreement, effective as of said fifth anniversary, and such lands

shall no longer be a part of the unit area and shall no longer be subject to this agreement, unless diligent drilling operations are in progress on unitized lands not entitled to participation on said fifth anniversary, in which event all such lands shall remain subject hereto for so long as such drilling operations are continued diligently, with not more than 90 days' time elapsing between the completion of one such well and the commencement of the next such well. All legal subdivisions of lands not entitled to be in a participating area within 10 years after the effective date of the first initial participating area approved under this agreement shall be automatically eliminated from this agreement as of said tenth anniversary. All lands proved productive by diligent drilling operations after the aforesaid five-year period shall become participating in the same manner as during said five-year period. However, when such diligent drilling operations cease, all non-participating lands shall be automatically eliminated effective as of the 91st day thereafter. The unit operator shall within 90 days after the effective date of any elimination hereunder, describe the area so eliminated to the satisfaction of the Supervisor and the Land Commissioner and promptly notify all parties in interest.

If conditions warrant extension of the ten-year period specified in this subsection 2 (e), a single extension of not to exceed two years may be accomplished by consent of the owners of 90% of the working interests in the current non-participating unitized lands and the owners of 60% of the basic royalty interests (exclusive of the basic royalty interests of the United States) in non-participating unitized lands with approval of the Director and Land Commissioner, provided such extension application is submitted to the Director and the Land Commissioner not later than 60 days prior to the expiration of said ten-year period.

Any expansion of the unit area pursuant to this section which embraces lands theretofore eliminated pursuant to this subsection 2 (e) shall not be considered automatic commitment or recommitment of such lands.

3. UNITIZED LAND AND UNITIZED SUBSTANCES. All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement." All oil and gas in any and all formations of the unitized land are unitized under the terms of this agreement and herein are called "unitized substances."

4. UNIT OPERATOR. Inexco Oil Company

is hereby designated as Unit Operator and by signature hereto as Unit Operator

agrees and consents to accept the duties and obligations of Unit Operator for the discovery, development, and production of unitized substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in the capacity and not as an owner of interest in unitized substances, and the term "working-interest owner" when used shall include or refer to Unit Operator as the owner of a working interest when such an interest is owned by it.

5. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time prior to the establishment of a participating area or areas hereunder, 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 notice of intention to resign has been served by Unit Operator on all working-interest owners and the Supervisor and the Land Commissioner, and until all wells then drilled hereunder are placed in a satisfactory condition for suspension or abandonment whichever is required by the Supervisor as to Federal lands and the State Commission as to State lands, unless a new Unit Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

Unit Operator shall have the right to resign in like manner and subject to like limitations as above provided at any time a participating area established hereunder is in existence, but, in all instances of resignation or removal, until a successor unit operator is selected and approved as hereinafter provided, the working-interest owners shall be jointly responsible for performance of the duties of unit operator, and shall not later than 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 of Unit Operator shall not release Unit Operator from any liability for any default by it hereunder occurring prior to the effective date of its resignation.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by the same percentage vote of the owners of working interests as herein provided for the selection of a new Unit Operator. Such removal shall be effective upon notice thereof to the Supervisor and the Land Commissioner.

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, materials, and appurtenances used in conducting the unit operations to the new duly qualified successor Unit Operator or to the common agent, if no such new Unit Operator is elected, to be used for the purpose of conducting unit operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment, and appurtenances needed for the preservation of any wells.

6. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation as Unit Operator or shall be removed as hereinabove provided, or a change of Unit Operator is negotiated by working-interest owners, the owners of the working interests in the participating area or areas according to their respective acreage interests in such participating area or areas, or until a participating area shall have been established, the owners of the working interests according to their respective acreage interests in all unitized land, shall by majority vote select a successor Unit Operator: Provided, That, if a majority but less than 75 per cent of the working interests qualified to vote are owned by one party to this agreement, a concurring vote of one or more additional working interest owners shall be required to select a new operator. 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 approved by the Land Commissioner.

If no successor Unit Operator is selected and qualified as herein provided, the Director and the Land Commissioner, at their election, may declare this unit agreement terminated.

7. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. If the Unit Operator is not the sole owner of working interests, costs, and expenses incurred by Unit Operator in conducting unit operations hereunder shall be paid and apportioned among and borne by the owners of working interests, all in accordance with the agreement or agreements entered into by and between the Unit Operator and the owners of working interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working-interest owners and the

Unit Operator as provided in this section, whether one or more, are herein referred to as the "unit operating agreement." Such unit operating agreement shall also provide the manner in which the working-interest owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases, or other independent contracts, and such other rights and obligations as between Unit Operator and the working-interest owners as may be agreed upon by Unit Operator and the working-interest owners; 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 unit agreement, and in case of any inconsistency or conflict between this unit agreement and the unit operating agreement, this unit agreement shall govern. Three true copies of any unit operating agreement executed pursuant to this section should be filed with the Supervisor and one true copy with the Land Commissioner, prior to approval of this unit agreement.

8. 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. 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.

9. DRILLING TO DISCOVERY. Within six (6) months after the effective date hereof, the Unit Operator shall begin to drill an adequate test well at a location approved by the Supervisor, if on Federal land, or by the Land Commissioner, if on State land, unless on such effective date a well is being drilled conformably with the terms hereof, and thereafter continue such drilling diligently until the Mississippian Formation has been penetrated and all beds of Pennsylvanian age tested . or until at a lesser depth unitized substances shall be discovered which can be produced in paying.

quantities (to-wit: quantities sufficient to repay the costs of drilling, completing and producing operations, with a reasonable profit) or the Unit Operator shall, at any time, establish to the satisfaction of the Supervisor if on Federal land, or the Land Commissioner if on State land, that further drilling of said well would be unwarranted or impracticable; provided, however, that Unit Operator shall not, in any event, be required to drill said well to a depth in excess of 9,500 feet. Until the discovery of a deposit of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling diligently one well at a time, allowing not more than six (6) months between the completion of one well and the beginning of the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of said Supervisor if it be on Federal land or of the Land Commissioner if on State land, or until it is reasonably proved that the unitized land is incapable of producing unitized substances in paying quantities in the formations drilled hereunder. Nothing in this section shall be deemed to limit the right of the Unit Operator to resign as provided in Section 5 hereof, or as requiring Unit Operator to commence or continue any drilling during the period pending such resignation becoming effective in order to comply with the requirements of this section. The Director and Land Commissioner may modify the drilling requirements of this section by granting reasonable extensions of time when, in their opinion, such action is warranted.

Upon failure to commence any well provided for in this section within the time allowed, including any extension of time granted by the Supervisor and the Land Commissioner, this agreement will automatically terminate; upon failure to continue drilling diligently any well commenced hereunder, the Supervisor and the Land Commissioner may, after 15-days notice to the Unit Operator, declare this unit agreement terminated.

10. PLAN OF FURTHER DEVELOPMENT AND OPERATION. Within six (6) months after completion of a well capable of producing unitized substances in paying quantities, the Unit Operator shall submit for the approval of the Supervisor and the Land Commissioner an acceptable plan of development and operation for the unitized land which, when approved by the Supervisor and the Land Commissioner, shall constitute the further drilling and 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 the approval of the Supervisor and the Land Commissioner a plan for an additional specified period for the development and operation of the unitized land.

Any plan submitted pursuant to this section shall provide for the exploration of the unitized area and for the diligent drilling necessary for determination of the area or areas thereof capable of producing unitized substances in paying quantities in each and every productive formation and shall be as complete and adequate as the Supervisor and the Land Commissioner may determine to be necessary for timely development and proper conservation of the oil and gas resources of the unitized area and shall:

(a) specify the number and locations of any wells to be drilled and the proposed order and time for such drilling; and

(b) to the extent practicable specify the operating practices regarded as necessary and advisable for proper conservation of natural resources.

Separate plans may be submitted for separate productive zones, subject to the approval of the Supervisor and the Land Commissioner.

Plans shall be modified or supplemented when necessary to meet changed conditions or to protect the interests of all parties to this agreement. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of development. The Supervisor and the Land Commissioner are authorized to grant a reasonable extension of the six-month period herein prescribed for submission of an initial plan of development where such action is justified because of unusual conditions or circumstances. After completion hereunder of a well capable of producing any unitized substance in paying quantities, no further wells, except such as may be necessary to afford protection against operations not under this agreement and such as may be specifically approved by the Supervisor and the Land Commissioner, shall be drilled except in accordance with a plan of development approved as herein provided.

11. PARTICIPATION AFTER DISCOVERY. Upon completion of a well capable of producing unitized substances in paying quantities or as soon thereafter as required by the Supervisor or the Land Commissioner, the Unit Operator shall submit for approval by the Supervisor and the Land Commissioner a schedule, based on subdivisions of the public-land survey or aliquot parts thereof, of all land then regarded as reasonably proved to be productive in paying quantities; all lands in said schedule on approval of the Supervisor and the Land Commissioner to constitute a participating area, effective as of the date of completion of such well or the



effective date of this unit agreement, whichever is later. The acreages of both Federal and non-Federal lands shall be based upon appropriate computations from the courses and distances shown on the last approved public-land survey as of the effective date of each initial participating area. Said schedule shall also set forth the percentage of unitized substances to be allocated as herein provided to each tract in the participating area so established, and shall govern the allocation of production commencing with the effective date of the participating area. A separate participating area shall be established for each separate pool or deposit of unitized substances or for any group thereof which is produced as a single pool or zone, and any two or more participating areas so established may be combined into one, on approval of the Supervisor and the Land Commissioner. When production from two or more participating areas, so established, is subsequently found to be from a common pool or deposit said participating areas shall be combined into one effective as of such appropriate date as may be approved or prescribed by the Supervisor and the Land Commissioner. The participating area or areas so established shall be revised from time to time, subject to like approval, to include additional land then regarded as reasonably proved to be productive in paying quantities or necessary for unit operations, or to exclude land then regarded as reasonably proved not to be productive in paying quantities and the schedule of allocation percentages shall be revised accordingly. The effective date of any revision shall be the first of the month in which is obtained the knowledge or information on which such revision is predicated, provided, however, that a more appropriate effective date may be used if justified by the Unit Operator and approved by the Supervisor and the Land Commissioner. No land shall be excluded from a participating area on account of depletion of the unitized substances, except that any participating area established under the provisions of this unit agreement shall terminate automatically whenever all completions in the formation on which the participating area is based are abandoned.

It is the intent of this section that a participating area shall represent the area known or reasonably estimated to be productive in paying quantities; but regardless of any revision of the participating area, nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the revision of the participating area.

In the absence of agreement at any time between the Unit Operator and the Supervisor and the Land Commissioner as to the proper definition or redefinition

of a participating area, or until a participating area has, or areas have, been established as provided herein, the portion of all payments affected thereby shall be impounded in a manner mutually acceptable to the owners of working interests and the Supervisor and the Land Commissioner. Royalties due the United States shall be determined by the Supervisor for Federal lands and the Land Commissioner for the State lands and the amount thereof shall be deposited, as directed by the Supervisor and the Land Commissioner, to be held as unearned money until a participating area is finally approved and then applied as earned or returned in accordance with a determination of the sum due as Federal and State royalty on the basis of such approved participating area.

Whenever it is determined, subject to the approval of the Supervisor and the Land Commissioner, that a well drilled under this agreement is not capable of production in paying quantities and inclusion of the land on which it is situated in a participating area is unwarranted, production from such well shall, for the purposes of settlement among all parties other than working-interest owners, be allocated to the land on which the well is located unless such land is already within the participating area established for the pool or deposit from which such production is obtained. Settlement for working interest benefits from such a well shall be made as provided in the unit operating agreement.

12. ALLOCATION OF PRODUCTION. All unitized substances produced from each participating area established under this agreement, except any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp, and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor and Land Commissioner, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits accruing under this agreement, each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to the total acres of unitized land in said participating area, except that allocation of production hereunder for purposes other than for settlement of the royalty, overriding royalty, or payment out of production obligations of the respective working-interest owners, shall be on the basis prescribed in the unit operating agreement whether in conformity with the basis of allocation herein set forth or otherwise. It is hereby

agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last-mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as such area was last defined at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS. Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor and the Land Commissioner, at such party's sole risk, costs, and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such a well in like manner as other wells are drilled by the Unit Operator under this agreement.

If any well drilled as aforesaid by a working-interest owner results in production such that the land upon which it is situated may properly be included in a participating area, such participating area shall be established or enlarged as provided in this agreement and the well shall thereafter be operated by the Unit Operator in accordance with the terms of this agreement and the unit operating agreement.

If any well drilled as aforesaid by a working-interest owner obtains production in quantities insufficient to justify the inclusion of the land upon which such well is situated in a participating area, such well may be operated and produced by the party drilling the same subject to the conservation requirements of this agreement. The royalties in amount or value of production from any such well shall be paid as specified in the underlying lease and agreements affected.

14. ROYALTY SETTLEMENT. The United States and any State and any royalty owner who is entitled to take in kind a share of the substances now unitized hereunder shall hereafter be entitled to the right to take in kind its share of the unitized substances, and the Unit Operator, or the working-interest owner in case

of the operation of a well by a working-interest owner as herein provided for in special cases, shall make deliveries of such royalty share taken in kind 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, or by the Unit Operator, 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 royalties due under their leases.

If gas obtained from lands not subject to this agreement is introduced into any participating area hereunder, for use in repressuring, stimulation of production, or increasing ultimate recovery, in conformity with a plan of operations approved by the Supervisor and the Land Commissioner, a like amount of gas, after settlement as herein provided for any gas transferred from any other participating area and with appropriate deduction for loss from any cause, may be withdrawn from the formation into which the gas is introduced, royalty free as to dry gas, but not as to any products which may be extracted therefrom; provided that such withdrawal shall be at such time as may be provided in the approved plan of operations or as may otherwise be consented to by the Supervisor and the Land Commissioner as conforming to good petroleum engineering practice; and provided further, that such right of withdrawal shall terminate on the termination of this unit agreement.

Royalty due the United States 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 amounts thereof allocated to unitized Federal land as provided herein at the rates specified in the respective Federal leases, or at such lower rate or rates as may be authorized by law or regulation; provided, that for leases on which the royalty rate depends on the daily average production per well, said average production shall be determined in accordance with the operating regulations as though each participating area were a single consolidated lease.

Royalty due on account of State lands shall be computed and paid on the basis of all unitized substances allocated to such lands.

15. RENTAL SETTLEMENT. Rental 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 due under their leases. Rental or minimum royalty for lands of the United States subject to this agreement shall be paid at the rate specified in the respective leases from the United States unless such rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary or his duly authorized representative.

Rentals on State of New Mexico lands subject to this agreement shall be paid at the rates specified in the respective leases.

With respect to any lease on non-Federal land containing provisions which would terminate such lease unless drilling operations are commenced upon the land covered thereby within the time therein specified or rentals are paid for the privilege of deferring such drilling operations, the rentals required thereby shall, notwithstanding any other provision of this agreement, be deemed to accrue and become payable during the term thereof as extended by this agreement and until the required drilling operations are commenced upon the land covered thereby or until some portion of such land is included within a participating area.

16. 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 State or Federal law or regulation.

17. DRAINAGE. The Unit Operator shall take such measures as the Supervisor and Land Commissioner deem appropriate and adequate to prevent drainage of unitized substances from unitized land by wells on land not subject to this agreement.

18. 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, as to Federal leases and the Land Commissioner, as to State leases, shall and each by his approval hereof, or by the approval hereof by his duly authorized representative, does hereby establish, alter, change, or revoke the drilling, producing, rental, minimum royalty, and royalty requirements of Federal and State leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this agreement, and without limiting the generality of the foregoing,

all leases, subleases, and contracts are particularly modified in accordance with the following:

(a) The development and operation of lands subject to this agreement under the terms thereof shall be deemed full performance of all obligations for development and operation with respect to each and every separately owned tract subject to this agreement, regardless of whether there is any development of any particular tract of the unit area.

(b) Drilling and producing operations performed hereunder upon any tract of unitized lands will 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 the land therein embraced.

(c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Secretary and the Land Commissioner, or his duly authorized representative, 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.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil or gas of lands other than those of the United States and State of New Mexico committed to this agreement, which, by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such terms so provided therein so that it shall be continued in full force and effect for and during the term of this agreement.

(e) Any Federal lease for a fixed term of twenty (20) years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force beyond the term provided therein until the termination hereof. Any other Federal lease committed hereto shall continue in force beyond the term so provided therein or by law as to the land committed so long as such lease remains subject hereto, provided that production is had in paying quantities under this unit agreement prior to the expiration date of the term of such lease, or in the event actual drilling operations are commenced on unitized land, in accordance with the provisions of this agreement, prior to the end of the primary term of such lease and are being diligently prosecuted at that time, such lease shall be extended for two years and so long thereafter as oil or gas is produced in paying quantities in

accordance with the provisions of the Mineral Leasing Act Revision of 1960.

(f) Each sublease or contract relating to the operation and development of unitized substances from lands of the United States committed to this agreement, which by its terms would expire prior to the time at which the underlying lease, as extended by the immediately preceding paragraph, will expire, 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 the underlying lease as such term is herein extended.

(g) The segregation of any Federal Lease committed to this agreement is governed by the following provision in the fourth paragraph of Sec. 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 nonunitized 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."

(h) In the event the Initial Test Well is commenced prior to the expiration date of the shortest term State Lease within the Unit Area, any lease embracing lands of the State of New Mexico which is made subject to this agreement, shall continue in force beyond the term provided therein as to the lands committed hereto until the termination hereof.

(i) Any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto, shall be segregated as to the portion committed and the portion not committed, and the terms of such lease shall apply separately to such segregated portions commencing as of the effective date hereof; provided, however, notwithstanding any of the provisions of this agreement to the contrary any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced in such lease, if oil or gas is discovered and is capable of being produced in paying quantities from some part of the lands embraced in such lease at the expiration of the secondary term of such lease; or if, at the expiration of the secondary term, the leasee or the Unit Operator is then engaged in bona fide drilling or reworking operations on some part of the lands embraced in such lease, the same as to all lands embraced therein, shall

remain in full force and effect so long as such operations are being diligently prosecuted, and if they result in the production of oil or gas; said lease shall continue in full force and effect as to all of the lands embraced therein, so long thereafter as oil or gas in paying quantities is being produced from any portion of said lands.

19. 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, or 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, royalty, or other 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, photostatic, or certified copy of the instrument of transfer.

20. EFFECTIVE DATE AND TERM. This agreement shall become effective upon approval by the Secretary and the Land Commissioner or his duly authorized representative, and shall terminate five (5) years from said effective date unless

(a) such date of expiration is extended by the Director and the Land Commissioner, or

(b) it is reasonably determined prior to the expiration of the fixed term or any extension thereof that the unitized land is incapable of production of unitized substances in paying quantities in the formations tested hereunder and after notice of intention to terminate the agreement on such ground is given by the Unit Operator to all parties in interest at their last known addresses, the agreement is terminated with the approval of the Supervisor and the Land Commissioner, or

(c) a valuable discovery of unitized substances has been made or accepted on unitized land during said initial term or any extension thereof, in which event the agreement shall remain in effect for such term and so long as unitized substances are produced in quantities sufficient to pay for the cost of producing same from wells on unitized land within any participating area established hereunder and, should production cease, so long thereafter as diligent operations are in progress for the restoration of production or discovery of new production and so long thereafter as unitized substances so discovered are produced as aforesaid, or



(d) it is terminated as heretofore provided in this agreement. This agreement may be terminated at any time by not less than 75 per centum, on an acreage basis, of the working-interest owners signatory hereto, with the approval of the Supervisor and the Land Commissioner; notice of any such approval to be given by the Unit Operator to all parties hereto.

21. RATE OF PROSPECTING, DEVELOPMENT, AND PRODUCTION. The Director is hereby vested with authority to alter or modify from time to time in his discretion the quantity and rate of production under this agreement when such quantity and rate is not fixed pursuant to Federal or State law or does not conform to any state-wide voluntary conservation or allocation program, which is established, recognized, and generally adhered to by the majority of operators in such State, 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. Without regard to the foregoing, the Director is also hereby vested with authority to alter or modify from time to time in his discretion the rate of prospecting and development and the quantity and rate of production under this agreement when such alteration or modification is in the interest of attaining the conservation objectives stated in this agreement and is not in violation of any applicable Federal or State law.

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 15 days from notice.

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

23. NOTICES. All notices, demands, or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if given in writing and personally delivered to the party or sent by postpaid 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 may have furnished in writing to party sending the notice, demand or statement.

24. NO WAIVER OF CERTAIN RIGHTS. Nothing in this agreement contained 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 lands are located, or of the United States, 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.

25. UNAVOIDABLE DELAY. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while 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 agencies, unavoidable accidents, 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. No unit obligation which is suspended under this section shall become due less than thirty (30) days after it has been determined that the suspension is no longer applicable. Determination of creditable "Unavoidable Delay" time shall be made by the unit operator subject to approval of the Supervisor and the Land Commissioner.

26. NONDISCRIMINATION. In connection with the performance of work under this agreement, the operator agrees to comply with all the provisions of section 202 (1) to (7) inclusive of Executive Order 11246 (30 F.R. 12319), as amended, which are hereby incorporated by reference in this agreement.

27. LOSS OF TITLE. In the event title to any tract of unitized land shall fail and the true owner cannot be induced to join in this unit agreement, such tract shall be automatically regarded as not committed hereto and there shall be such readjustment 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 interests subject thereto, payment or delivery on account thereof may be withheld without liability for interest until the dispute is finally settled; provided, that, as to Federal and State land or leases, no payments of

funds due the United States or the State of New Mexico should be withheld, but such funds shall be deposited as directed by the Supervisor and such funds of the State of New Mexico shall be deposited as directed by the Land Commissioner, 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.

28. NON-JOINDER AND SUBSEQUENT JOINDER. If the owner of any substantial interest in a tract within the unit area fails or refuses to subscribe or consent to this agreement, the owner of the working interest in that tract may withdraw said tract from this agreement by written notice delivered to the Supervisor and the Land Commissioner and the Unit Operator prior to the approval of this agreement by the Supervisor. Any oil or gas interests in lands within the unit area not committed hereto prior to submission of this agreement for final approval may thereafter be committed hereto by the owner or owners thereof subscribing or consenting to this agreement, and, if the interest is a working interest, by the owner of such interest also subscribing to the unit operating agreement. After operations are commenced hereunder, the right of subsequent joinder, as provided in this section, by a working-interest owner is subject to such requirements or approvals, if any, pertaining to such joinder, as may be provided for in the unit operating agreement. After final approval hereof, joinder by a non-working interest owner must be consented to in writing by the working-interest owner committed hereto and responsible for the payment of any benefits that may accrue hereunder in behalf of such non-working interest. A non-working interest may not be committed to this unit unless the corresponding working interest is committed hereto. Joinder to the unit agreement by a working-interest owner, at any time, must be accompanied by appropriate joinder to the unit operating agreement, if more than one committed working-interest owner is involved, in order for the interest to be regarded as committed to this unit agreement. Except as may otherwise herein be provided, subsequent joinders to this agreement shall be effective as of the first day of the month following the filing with the Supervisor and the Land Commissioner of duly executed counterparts of all or any papers necessary to establish effective commitment of any tract to this agreement unless objection to such joinder is duly made within sixty (60) days by the Supervisor and the Land Commissioner.

29. COUNTERPARTS. This agreement may be executed in any number of counterparts no one of which needs to be executed by all parties or 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 such 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.

30. SURRENDER. Nothing in this agreement shall prohibit the exercise by any working-interest owner of the right to surrender vested in such party by any lease, sublease, or operating agreement as to all or any part of the lands covered thereby, provided that each party who will or might acquire such working interest by such surrender or by forfeiture as hereafter set forth, is bound by the terms of this agreement.

If, as a result of any such surrender, the working interest rights as to such lands become vested in any party other than the fee owner of the unitized substances, said party may forfeit such rights and further benefits from operation hereunder as to said land to the party next in the chain of title who shall be and become the owner of such working interest.

If, as the result of any such surrender or forfeiture, working interest rights become vested in the fee owner of the unitized substances, such owner may:

(1) Accept those working-interests rights subject to this agreement and the unit operating agreement; or

(2) Lease the portion of such land as is included in a participating area established hereunder subject to this agreement and the unit operating agreement.

(3) Provide for the independent operation of any part of such land that are not then included within a participating area established hereunder.

If the fee owner of the unitized substances does not accept the working-interest rights subject to this agreement and the unit operating agreement or lease, such lands as above-provided within six (6) months after the surrendered or forfeited working-interest rights become vested in the fee owner, the benefits and obligations of operations accruing to such lands under this agreement and the unit operating agreement shall be shared by the remaining owners of unitized working interests in accordance with their respective working interest ownerships, and such owners or working interests shall compensate the fee owner of unitized sub-

stances in such lands by paying sums equal to the rentals, minimum royalties, and royalties applicable to such lands under the lease in effect when the lands were unitized.

An appropriate accounting and settlement shall be made, for all benefits accruing to or payments and expenditures made or incurred on behalf of such surrendered or forfeited working interest subsequent to the date of surrender or forfeiture, and payment of any moneys found to be owing by such an accounting shall be made as between the parties within thirty (30) days. In the event no unit operating agreement is in existence and a mutually acceptable agreement between the proper parties thereto cannot be consummated, the Supervisor may prescribe such reasonable and equitable agreement as he deems warranted under the circumstances.

The exercise of any right vested in a working-interest owner to reassign such working interest to the party from whom obtained shall be subject to the same conditions as set forth in this section in regard to the exercise of a right to surrender.

31. TAXES. The working-interest owners shall render and pay for their account and the account of the royalty owners all valid taxes on or measured by the unitized substances in and under or that may be produced, gathered, and sold from the land subject to this contract after the effective date of this agreement, or upon the proceeds derived therefrom. The working-interest owners on each tract shall and may charge the proper proportion of said taxes to the royalty owners having interests in said tract, and may currently retain and deduct sufficient of the unitized substances or derivative products, or net proceeds thereof from the allocated share of each royalty owner to secure reimbursement for the taxes so paid. No such taxes shall be charged to the United States or the State of New Mexico or to any lessor who has a contract with his lessor who has a contract with his lessee which requires the lessee to pay such taxes.

32. NO PARTNERSHIP. It is expressly agreed that the relation of the parties hereto is that of independent contractors and nothing in this agreement contained, expressed, or implied, nor any operations conducted hereunder, shall create or be deemed to have created a partnership or association between the parties hereto or any of them.

33. 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 right 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. The parties hereto, including the State Commission, agree that all powers and authority vested in the State Commission in and by any provisions of this agreement are vested in the State Commission and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject in any case to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

34. SURFACE AND ENVIRONMENTAL PROTECTION STIPULATIONS. Nothing in this agreement shall modify or change either the special Federal Lease stipulations relating to surface management or such special Federal Lease stipulations relating to surface and environmental protection, attached to and made a part of, Oil and Gas Leases covering lands within the Unit Area.

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

ATTEST:

INEXCO OIL COMPANY

BY: \_\_\_\_\_

BY: \_\_\_\_\_  
Vice President

Address: \_\_\_\_\_

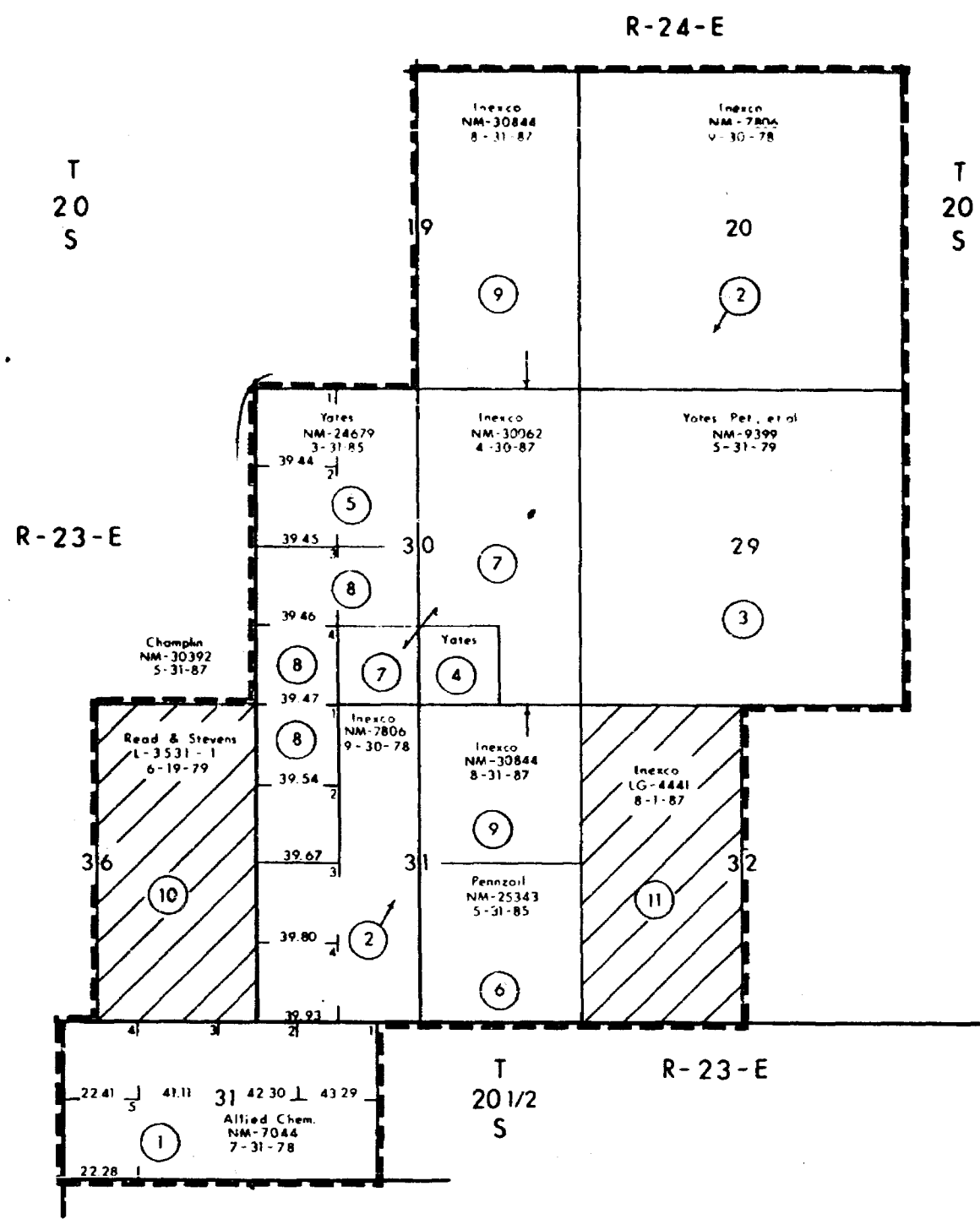
UNIT OPERATOR

STATE OF Texas )  
COUNTY OF Harris ) ss

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 1978, by William G. Goodwin who is Vice President of Inexco Oil Company (State of Incorp.) \_\_\_\_\_ corporation, for and on behalf of said Corporation.

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public



- Unit Outline
- Tract No.
- Federal Lands  
3,168.14 Acres  
83.19% of Unit Area
- State of New Mexico Lands  
640.00 Acres  
16.81% of Unit Area

**LONG BOX UNIT AREA**  
EDDY COUNTY, NEW MEXICO  
**EXHIBIT "A"**

Scale in Miles

11-28-77

1100 Milam Bldg. - Houston, Texas 77002  
713-651-3300

## EXHIBIT "B"

SCHEDULE OF LANDS AND LEASES  
LONG BOX UNIT AREA  
EDDY COUNTY, NEW MEXICO

Case 6118

TRACT NO.	DESCRIPTION OF LANDS	ACRES	SERIAL NO. AND EXP. DATE	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD AND PERCENTAGE	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE
1.	<u>T-20½-S, R-23-E</u> Sec. 31; All.	291.38	NM-7044 7-31-78	USA 12.5	Allied Chem. Corp.	All C. E. Strange	5.00% Allied Chem. Corp. All
2.	<u>T-20-S, R-24-E</u> Sec. 20; All Sec. 31; Lots 3, 4, E½NW¼	879.73	NM-7806 9-30-78	USA 12.5	Inexco Oil Co.	All A. D. Raby	5.00% Inexco Oil Co. All
3.	<u>T-20-S, R-24-E</u> Sec. 29; All	640.00	NM-9399 5-31-79	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% Edward J. Abraham & 25.00% T. David Ling 25.00% 25.00%	5.00% Same as Lessee of Record
4.	<u>T-20-S, R-24-E</u> Sec. 30; SW¼SE¼	40.00	NM-22617 9-30-84	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% B. E. Stewart 25.00% 25.00% 25.00%	3.00% Same as Lessee of Record
5.	<u>T-20-S, R-24-E</u> Sec. 30; Lots 1, 2, E½NW¼	158.89	NM-24679 3-31-85	USA 12.5	Yates Pet. Corp. Yates Drilling Co. ABO Petroleum Corp. MYCO Industries, Inc.	25.00% Mary J. Castell 25.00% 25.00% 25.00%	5.00% Same as Lessee of Record
6.	<u>T-20-S, R-24-E</u> Sec. 31; SE¼	160.00	NM-25343 5-31-85	USA 12.5	Pennzoil Company	All None	Pennzoil Company All



Case 6118

Exhibit 'B', page 2  
Long Box Unit Area

7. T-20-S, R-24-E Sec. 30; NE $\frac{1}{4}$ , NW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$	320.00	NM-30062 4-30-87	USA <u>12.5</u>	Inexco Oil Co. <b>24.5</b>	All	Frank B. Cressy	<u>3.00%</u>	Inexco Oil Co.	All
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8. T-20-S, R-24-E Sec. 30; Lots 3, 4, NE $\frac{1}{4}$ SW $\frac{1}{4}$	198.14	NM-30392 5-31-87	USA 12.5	Champlin Pet. Co.	All	R. F. Petty	5.00%	Champlin Pet. Co.	All
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9. T-20-S, R-24-E Sec. 19; E $\frac{1}{2}$ Sec. 31; NE $\frac{1}{4}$	480.00	NM-30844 8-31-87	USA 12.5	Inexco Oil Co.	All	John H. Breck, Jr.	5.00%	Inexco Oil Co.	All
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Total 3,168.14 Acres Federal Land 83.19% of Unit Area

STATE OF NEW MEXICO LANDS

10. T-20-S, R-23-E Sec. 36; E $\frac{1}{2}$	320.00	L-3531-1 6-19-79	State 12.5	Read & Stevens, Inc.	All	None		Read & Stevens, Inc.	All
11. T-20-S, R-24-E Sec. 32; W $\frac{1}{2}$	320.00	IG-4441 8-1-87	State 12.5	Inexco Oil Co.	All	None		Inexco Oil Co.	All

Total 640.00 Acres State of New Mexico Lands 16.81% of Unit Area

Total All Lands: 3,808.14

Dockets Nos. 2-78 and 3-78 are tentatively set for hearing on January 18 and February 8, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 4, 1978

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- CASE 6113: Application of Transocean Oil, Inc., for a unit agreement, Catron County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Cibola Unit Area comprising 30,733 acres, more or less, of Federal, State, and fee lands in Townships 1 and 2 North, Ranges 14 and 15 West, Catron County, New Mexico.
- CASE 6114: Application of Texas Oil and Gas Company for special pool rules or a spacing exception, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Shugart-Pennsylvanian Gas Pool, Eddy County, New Mexico, to provide for 320-acre spacing rather than 160 acres. In the absence of objection, this pool will be placed on the standard 320-acre spacing for Wolfcamp and Pennsylvanian gas pools rather than the present 160-acre spacing. In the alternative applicant seeks the assignment of a 320-acre gas spacing and proration unit consisting of the E/2 of Section 33, Township 18 South, Range 31 East, Eddy County, New Mexico, to a well to be drilled to the Pennsylvanian formation at a standard location thereon.
- CASE 6096: (Continued from November 30, 1977, Examiner Hearing)
- Application of Texas Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the S/2 of Section 14, Township 21 South, Range 34 East, Lea County, New Mexico, to be dedicated to applicant's South Wilson State Well No. 1 to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6115: Application of Merrion and Bayless for downhole commingling, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek approval for the downhole commingling of Pictured Cliffs and Chacra production in their Jicarilla 428 Wells Nos. 3, 4, and 5, located respectively, in Unit M of Section 29 and Unit D of Section 32 and Section 31, Township 23 North, Range 4 West. Applicant further seeks blanket approval for downhole commingling of said formations in Sections 29 thru 32, Township 23 North, Range 4 West, and Sections 22 thru 26 and 35 and 36, Township 23 North, Range 5 West, all in Sandoval County, New Mexico.
- CASE 6116: Application of Merrion and Bayless for salt water disposal, San Juan County, New Mexico. Applicants, in the above-styled cause, seek authority to dispose of produced salt water into the Mesaverde formation thru the perforated interval from 3374 feet to 3395 feet in applicants' Hudson Well No. 1, located in Unit D of Section 26, Township 30 North, Range 12 West, San Juan County, New Mexico.
- CASE 6117: Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its South Culebra Bluff Unit Area comprising 1280 acres, more or less, of Federal and fee lands in Township 23 South, Range 28 East, Eddy County, New Mexico.
- CASE 6118: Application of Inxco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Long Box Unit Area comprising 3,808 acres, more or less, of Federal and State lands in Townships 20 and 20 1/2 South, Ranges 23 and 24 East, Eddy County, New Mexico.
- CASE 6119: Application of Caulkins Oil Company for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Pictured Cliffs, Chacra and Mesaverde production in the wellbore of its Breech Well No. 228, to be located in Unit A of Section 18, Township 26 North, Range 6 West, Rio Arriba County, New Mexico, and to dually complete the commingled formations and the Dakota formation in said well.
- CASE 6120: Application of Caulkins Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Mesaverde production in the wellbores of its Breech E Wells Nos. 109 in Unit M of Section 3 and 104 in Unit P of Section 5 and its Breech A Wells Nos. 627 in Unit B of Section 8, 677 and 679 in Units L and J, respectively, of Section 9, and 207 in Unit A of Section 10, all in Township 26 North, Range 6 West, Rio Arriba County, New Mexico.
- CASE 6121: Application of Caulkins Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Pictured

Case 6118

BEFORE THE OIL CONSERVATION COMMISSION  
STATE OF NEW MEXICO

APPLICATION FOR APPROVAL OF  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

C 1 : 1977

New Mexico Oil Conservation Commission  
Santa Fe, New Mexico 87501

Comes the undersigned Inexco Oil Company, with offices at Houston, Texas and files herewith one (1) copy of the proposed Unit Agreement for the development and operation of the Long Box Unit Area, Eddy County, New Mexico and hereby makes application for approval of said Unit Agreement as provided by law, and in support thereof states:

1. That the proposed Unit Area covered by said Agreement embraces 3,808.14 acres of land, more or less, more particularly described as follows:

83.19  
16.81  
700.00

T-20-S, R-23-E, NMPM  
Sec. 36; E½

T-20½-S, R-23-E, NMPM  
Sec. 37; All

T-20-S, R-24-E, NMPM  
Sec. 19; E½  
Secs. 20, 29, 30, 31; All  
Sec. 32; W½

Eddy County, New Mexico

2. That of the lands embraced within the proposed Unit, 3,168.14 acres are lands of the United States, being 83.19% of the Area; and 640.00 acres are State of New Mexico lands being 16.81% of the Area.

3. That Applicant is informed and believes, and upon such information and belief states, that the proposed unit area covers all or substantially all of the geological feature involved, and that in the event of a discovery of oil and gas thereon, that said Unit Agreement will permit the producing area to be developed or operated in the interest of conservation and the prevention of waste of the unitized substances.

4. That Inexco Oil Company is designated as the Unit Operator in said Unit Agreement, and, as such, is given authority under the terms thereof to carry on all operations necessary for the development and operation of the Unit Area for oil and gas subject to all applicable laws and regulations. That said Unit Agreement provides for the drilling of an Initial Test Well to a depth sufficient to penetrate the Mississippian Formation, but applicant is not obligated to drill said well in any event to a depth in excess of 9,500 feet.

5. That the applicant believes that in the event oil or gas is discovered in paying quantities on lands within the Unit Area, that the field or area can be developed more economically and efficiently under the terms of said Unit Agreement, to the end that maximum recovery will be obtained of unitized substances and that said Unit Agreement is in the interest of conservation of prevention of waste as contemplated by the New Mexico Oil Conservation rules and regulations.

6. That Application for Approval of said Unit Agreement has been filed with the Commissioner of Public Lands.

7. That upon an order being entered by the New Mexico Oil Conservation Commission approving said Unit Agreement, and after approval by the United States Department of Interior, an approved copy will be filed with the New Mexico Oil Conservation Commission.

WHEREFORE, the undersigned applicant respectfully requests that a hearing be held before an examiner on the matter of said Unit Agreement, and that upon said hearing, said Unit Agreement be approved by the New Mexico Oil Conservation Commission as being in the interest of conservation and the prevention of waste. Applicant respectfully requests that this matter be heard at the first available hearing following this date.

DATED this 20th day of November, 1977.

INEXCO OIL COMPANY

By William G. Goodwin  
William G. Goodwin--Vice President  
1100 Milam Building  
Suite 1900  
Houston, Texas 77002

Randolph M. Richardson, III  
Attorney At Law  
P. O. Box 819  
Roswell, New Mexico 88201

Case 6118

NEW MEXICO OIL CONSERVATION COMMISSION  
STATE OF NEW MEXICO

APPLICATION FOR APPROVAL OF  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

New Mexico Oil Conservation Commission  
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Sec. 36; E½

T-20½-S, R-23-E, NMPM  
Sec. 31; All

T-20-S, R-24-E, NMPM  
Sec. 19; E½  
Secs. 20, 29, 30, 31; All  
Sec. 32; W½

Eddy County, New Mexico

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DATED this 20th day of November, 1977.

INEXCO OIL COMPANY

By William G. Goodwin  
William G. Goodwin--Vice President B.  
1100 Milam Building  
Suite 1900  
Houston, Texas 77002

Randolph M. Richardson, III  
Attorney At Law  
P. O. Box 819  
Roswell, New Mexico 88201

Case 6118

BEFORE THE OIL CONSERVATION COMMISSION  
STATE OF NEW MEXICO

APPLICATION FOR APPROVAL OF  
LONG BOX UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

New Mexico Oil Conservation Commission  
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T-20 $\frac{1}{2}$ -S, R-23-E, NMPM  
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Sec. 32; W $\frac{1}{2}$

Eddy County, New Mexico

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DATED this 20th day of November, 1977.

INEXCO OIL COMPANY

By William G. Goodwin  
William G. Goodwin--Vice President  
1400 Milam Building  
Suite 1900  
Houston, Texas 77002

Randolph M. Richardson, III  
Attorney At Law  
P. O. Box 819  
Roswell, New Mexico 88201

DRAFT

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. 6118

Order No. R- 5620

APPLICATION OF INEXCO OIL COMPANY  
FOR APPROVAL OF THE LONG BOX  
UNIT AGREEMENT, EDDY, COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 4, 1978  
-----, 196, at Santa Fe, New Mexico, before Examiner  
Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of January, 1978, 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, Inexco Oil Company,  
seeks approval of the Long Box Unit Agreement  
covering 3,808.14 acres, more or less, of State and  
Federal lands  
and  
described as follows:

EDDY COUNTY, NEW MEXICO  
TOWNSHIP 20 South, RANGE 24 East, NMPM

Section 19: E/2

Section 20: All

Sections 29 through 31: All

Section 32: W/2

TOWNSHIP 20 SOUTH, RANGE 23 EAST, NMPM

Section 36: E/2

TOWNSHIP 20 1/2 SOUTH, RANGE 23 EAST, NMPM

Section 31: All

(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 Long Box 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 Commissioner of Public Lands for the State of New Mexico and 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.

(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.