

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

July 11, 1974

Atlantic Richfield Company
P. O. Box 1610
Midland, Texas 79701

Attention: Mr. C. R. Leggott, Jr.

Re: Emergency Holding Pits
Empire-Abo Pool
Eddy County, New Mexico

Gentlemen:

Reference is made to your letter dated June 18, 1974, wherein you requested a permit to construct four nylon-reinforced neoprene lined emergency holding pits at four new tank batteries now under construction for the Empire Abo Unit, Empire-Abo Pool, Eddy County, New Mexico.

Atlantic Richfield Company is hereby authorized to construct and utilize the aforesaid pits as proposed subject to the following provisions:

1. The automatic lease shut-down equipment and alarm alert system on each battery shall be installed and maintained in good working order to minimize the possibility of the emergency overflow pits being needed.
2. The oil overflow lines to the pits shall not be connected until the permanent pumps (P-2 on Drawing No. E-P-154) have been installed and are operative.
3. The 4-inch line labeled "Future Inlet" on Drawing No. E-P-154 shall not be connected without prior approval from this office.
4. No deliberate flow of oil into the pits shall be permitted.

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OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Atlantic Richfield Company

-2-

July 11, 1974

5. At any time an emergency situation occurs, causing oil to overflow into an emergency holding pit, the Artesia District Office of the Commission shall be immediately notified. All oil shall be removed from the pit within 12 hours after the LACT resumes pipe line shipments.

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It is the Commission's belief that the systems as proposed, if operated in accordance with the above provisions, are in the interest of conservation and will prevent waste. Further, that if proper attention and maintenance is given the systems, and if immediate evacuation of the pits is made after use, that they will be environmentally beneficial.

The Commission does reserve the right to rescind this approval if it appears that excessive or negligent use is being made of the pits.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/dr

cc: U. S. Geological Survey - Roswell
Oil Conservation Commission - Artesia



June 18, 1974

Gordon Sommers
(915) 682 8631

Mr. D. S. Nutter, Chief Engineer
 New Mexico Oil Conservation Commission
 P. O. Box 2088
 Santa Fe, New Mexico 87501

Dear Sir:

Atlantic Richfield Company is requesting a permit to construct four nylon reinforced neoprene lined emergency holding pits at four new batteries now under construction for the Empire Abo Unit located in the Empire Abo Field, Eddy County, New Mexico.

Three sets of drawings showing the details of the proposed lined pits are attached to this letter. These drawings are entitled as follows:

<u>Drawing No.</u>	<u>Title</u>
E-P-154	Lined Pit Layout and Piping
B-P-63, Sh. 8 of 14	Piping Outside Battery Limits, Btty. "H"
B-P-63, Sh. 10 of 14	Piping Outside Battery Limits, Btty. "J"
B-P-63, Sh. 11 of 14	Piping Outside Battery Limits, Btty. "K"
B-P-63, Sh. 12 of 14	Piping Outside Battery Limits. Btty. "L"

Each lined pit will be kept empty to insure sufficient capacity for emergency overflow from the three 1000 barrel oil tanks at each battery. There is a high oil tank level lease shutdown control at each battery to shut-in all wells producing into this battery, should the three 1000 barrel oil tanks fill to a predetermined high level. An alarm is actuated before this fill-up occurs to alert the field operators that a system malfunction, such as an LACT Unit failure, has occurred. These oil tanks are also equipped with an overflow line to the proposed lined pit so that in the event of a malfunction to the high oil tank level lease shutdown control, oil will flow to the lined pit instead of overflowing into the battery dike, creating a serious fire hazard, a safety hazard to the operating personnel and a major clean-up job.

Mr. D. S. Nutter
Page Two
June 18, 1974

As soon as the system malfunction has been corrected the emergency lined holding pit will be emptied by pumping the contained oil back through the treating system and sold to the pipe line through the LACT Unit.

All battery vessel drains are also connected to the lined pit. This oil will be recirculated through the heater treaters using the pump permanently located at each lined pit. Any basic sediment or non pipeline oil remaining in the lined pit will be sold to a reclaiming company so that the lined pit will be kept empty for emergency use when required.

The nylon reinforced neoprene liner will be purchased from the Misco Supply Company, Wichita, Kansas. Atlantic Richfield has used many of these liners in Kansas and Oklahoma with success. This liner was recommended by the Atlantic Richfield Research Center Chemical Engineering Section after tests were made to determine its resistance to saturated hydrocarbon fluids and chemical and acid wastes. Copies of Misco's specifications for the nylon reinforced neoprene liner are attached.

If any additional information or drawings are required by the Commission, Atlantic Richfield will be pleased to furnish them at your request.

Very truly yours,


C. R. Leggott, Jr.
District Engineer, West Area
P. O. Box 1610
Midland, Texas 79701



SPECIFICATIONS FOR NYLON REINFORCED NEOPRENE

	<u>MN-21</u>
Total weight, oz./sq.yd.	16.0 ✓
Gauge, inches	.021 ✓
Kind of coating	Neoprene ✓
Coating distribution	50/50 ✓
Base fabric: fiber	Nylon ✓
weight, oz./sq.yd.	5.1 ✓
count	22 x 22 ✓
denier	840 ✓
Grab tensile, lbs./in.	450 x 375
Mullen burst, lbs./sq.in.	825
Hydrostatic, lbs./sq.in.	750
Tongue tear, lbs.	40 x 40
Adhesion of coating, lbs./in.	20
Low Temp. Res., 1/8 in. mandrel	-40° F ✓
30° flame time, seconds	15 ² ✓
Abrasion Res., Taber, cycles	300 ² ✓
Abrasion Res., duPont Scrub, cycles	2500 ² ✓

OIL CONSERVATION COMMISSION

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

July 12, 1974

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY -- DIRECTOR

Amoco Production Company
P. O. Box 68
Hobbs, New Mexico 88240

Phillips Petroleum Company
Phillips Building
Fourth and Washington
Odessa, Texas 79760

Re: Gasoline Plants
Empire-Abo Pool
Eddy County, New Mexico

Gentlemen:

Your attention is called to Order No. R-4549, as amended by Order No. R-4549-B, which authorized Atlantic Richfield Company to conduct pressure maintenance operations in the Empire-Abo Pool by the injection of residue gas produced by your gasoline plants from the raw Empire-Abo casinghead gas.

Your attention is particularly invited to that paragraph of amended Rule 4 of the Project Rules (as contained in Order No. R-4549-B) wherein "Available Residue Gas" is defined as being all gas produced from the unitized formation less plant shrinkage, plant fuel, and lease fuel required for operation of the lease, and to the next paragraph which provides that no raw gas nor plant residue gas attributable to the project shall be sold or otherwise disposed of by any means other than injection into the unitized formation except during emergency situations of temporary nature.

We recognize that it will be difficult to determine that volume of residue gas which can be attributed to the project after deduction of shrinkage and plant fuel, particularly where gas from other pools or projects is also going into the plant, but this figure will be necessary to permit application of the project's allowable formula.

We therefore request that Amoco, in preparing Sheet 1 of Form C-111 for its Empire Abo Gasoline Plant, and Phillips, in preparing

Amoco Production Company
Phillips Petroleum Company

-2-

July 12, 1974

Sheet 1 of Form C-111 for its Artesia Gasoline Plant, fill out an additional Sheet 1 of Form C-111 for casinghead gas from the ARCO project area only, showing ARCO project gas taken, and making your best estimate of plant fuel, shrinkage, manufactured products, etc., which should be attributed to the ARCO project gas. Also to be shown, of course, would be the volume of residue returned to ARCO for injection.

Your cooperation in providing this information to the Commission will be greatly appreciated, as it is our belief that only with this data available will we be able to help make this important project a success.

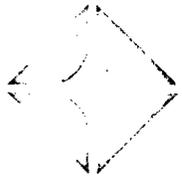
Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/dr
enclosures

cc: Atlantic Richfield Company
P. O. Box 1610
Midland, Texas 79701

U. S. Geological Survey - Roswell
Oil Conservation Commission - Artesia



RECEIVED

January 13, 1976

JAN 14 1976

New Mexico Oil Conservation Commission
P. O. Drawer DD
Artesia, New Mexico 88210

U. C. C.
ARTEZIA, OFFICE

Attn: Mr. W. A. Gressett

Dear Sir:

In regard to your inquiry about the gas that we are injecting into the Empire Abo Unit, we are running H₂S content and dew point on the gas. Following is a tabulation of the tests we have run.

Prod gas run at 10000 +/- grains H₂S/100 cu.ft.

Date	Grs. H ₂ S/100 cu.ft.	Dew Point
11/20/75	No test taken	-18° @ 640 Psig
06/14/74	No test taken	-12° @ 654 Psig
01/09/75	160	-18° @ 650 Psig
06/13/75	420	- 8° @ 655 Psig
12/30/75	1800	-14° @1580 Psig

Bill G says Norman

You will note the H₂S content increased considerably on the 12/30/75 test. This was due to the Phillips Plant sending us all sour gas beginning the first week in December.

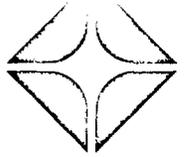
If we can help you in any way, let Norman or me know.

Yours very truly,

L. Troop

LT:rm

North American Producing Division
New Mexico-Arizona District
Post Office Box 1710
Hobbs, New Mexico 88240
Telephone 505 393 7163



Dick

January 3, 1977

New Mexico Oil Conservation Commission
P. O. Drawer DD
Artesia, New Mexico 88210

Attn: Mr. W. A. Gressett

Dear Sir:

As per your request, I am sending you the latest test results on the gas being injected into the Empire Abo Formation.

<u>Date</u>	<u>Grs. H₂S/100 cu. ft.</u>	<u>Dew Point</u>
11/16/76	440	40°F @ 1980#

If we can help you in any way, please let Norman or me know.

Yours very truly,

L. Troop
L. Troop

LT:rm

Case 4953

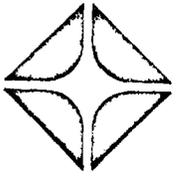
RECEIVED

JAN 5 1977

O. C. C.
ARTESIA, OFFICE

New Mexico-Arizona District
P.O. Box 1710
Hobbs, New Mexico 88240
Telephone 505 393 7163

SF



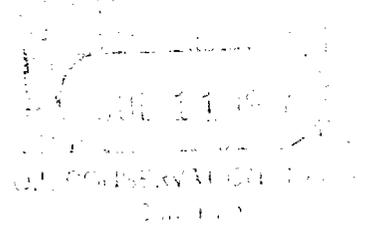
RECEIVED

JUL 8 1977

O. C. C.
ARTESIA, OFFICE

July 6, 1977

New Mexico Oil Conservation Commission
P. O. Drawer DD
Artesia, New Mexico 88210



Attn: Mr. W. A. Gressett

Dear Sir:

As per your request, I am sending you the latest test results on the gas being injected into the Empire Abo Formation.

<u>Date</u>	<u>Grs. H₂S/100 cu. ft.</u>	<u>Dew Point</u>
06/01/77	420	15°F @ 1900#

If we can help you in any way, please let Norman or me know.

Yours very truly,

L. Troop

LT:rm

New Mexico-Arizona District
P.O. Box 1710
Hobbs, New Mexico 88240
Telephone 505 393 7163

RECEIVED

JAN 16 1978

O. C. C.
ARTESIA, OFFICE

January 13, 1978

New Mexico Oil Conservation Commission
P. O. Drawer DD
Artesia, New Mexico 88210

Attn: Mr. W. A. Gressett

Dear Sir:

As per your request, I am sending you the latest test results on the gas being injected into the Empire Abo Formation.

<u>Date</u>	<u>Grs. H₂S/100 cu. ft.</u>	<u>Dew Point</u>
01/12/78	500	5°F @ 2040#

If we can help you in any way, please let Norman or me know.

Yours very truly,


L. Troop

LT:rm

Case 4953
RLS

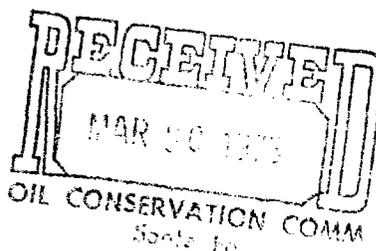
BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF ATLANTIC RICHFIELD COMPANY FOR APPROVAL OF A PRESSURE MAINTENANCE PROJECT FOR THE EMPIRE ABO POOL TO BE EMBRACED WITHIN THE EMPIRE ABO UNIT AREA CONSISTING OF 11,339.15 ACRES IN TOWNSHIPS 17 AND 18 SOUTH, RANGES 27, 28 AND 29 EAST, EDDY COUNTY, NEW MEXICO, INCLUDING EIGHT GAS INJECTION WELLS AND FOR APPROVAL OF SPECIAL POOL RULES INCLUDING A PROJECT ALLOWABLE

Pressure Maintenance

Case 4953



Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Comes Atlantic Richfield Company, acting by and through the undersigned attorneys, and hereby makes application for approval of a pressure maintenance project for the Empire Abo Pool to be embraced within the Empire Abo Unit Area consisting of 11,339.15 acres in Townships 17 and 18 South, Ranges 27, 28 and 29 East, Eddy County, New Mexico, including eight injection wells and for the approval of special pool rules including a project allowable, and in support thereof respectfully shows:

1. That there is filed herewith a plat showing the location of the proposed injection wells and the location of all other wells within a radius of 2 miles from the proposed injection wells and the formation from which said wells are producing or have produced. The plat also shows the boundaries of the proposed unit area and shows the owners of the oil and gas leases within an area of 2 miles of the proposed unit area.

2. As indicated by Exhibit "A" filed herewith, there are 8 proposed injection wells. All of the injection wells consist of presently producing wells to be converted to injection wells. All of said wells will be completed in such a way as to provide for the injection of gas into the gas zone of the Empire Abo Pool which includes the Abo formation. There are filed herewith logs of all the wells. There are also filed herewith diagrammatic sketches of all the proposed injection wells, showing all casing strings, including diameters and

DOCKET MAILED

Date 4-12-73

setting depths, quantities used and tops of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths, and types and location of packers to be used.

3. The proposed pressure maintenance project is within the boundaries of the proposed Unit Agreement for the Empire Abo Unit Area and application has been filed for approval of the unit agreement by the Commission.

4. It is proposed to inject gas for increased recovery purposes into the Empire Abo Pool which includes the Abo formation only. The unit agreement identifies the top of the formation at 5325 feet on the Welex Radioactivity Log dated December 21, 1958 for the Amoco Production Company's State of New Mexico "AU" Well No. 1 located 1980 feet from the south line and 1830 feet from the west line of Section 2, Township 18 South, Range 27 East and the bottom of the formation at 6533 feet on the log.

5. That applicant proposes to inject Abo residue gas from the Amoco Empire Gasoline Plant and the Phillips Artesia Gasoline Plant and that it is anticipated that approximately 37,000 MCF per day will be injected after all wells which are to be converted to injection wells have been converted. Maximum wellhead injection pressure is to be approximately 2,000 psig.

6. That applicant also desires a project allowable to be approved, in accordance with Rule 701 of the Commission rules.

7. Applicant also submits an Initial Plan of Operation as provided by Paragraph 11 of the Unit Agreement, said Plan of Operation to include details of special field rules requested.

8. That the special pool rules to be adopted include a project allowable as well as provision for the administrative approval of the conversion of additional wells for injection purposes.

9. In the opinion of applicant, said pressure maintenance project will be in the interest of conservation, prevention of waste, the protection of correlative rights and will tend to promote the greatest ultimate recovery of oil and gas from that portion of the Empire Abo Pool covered by the project.

10. Applicant requests that this matter be set down for hearing at the examiner's hearing to be held on April 25, 1973.

Respectfully submitted,

ATLANTIC RICHFIELD COMPANY

By 

Member of the Firm of
HINKLE, BONDURANT, COX & EATON
Attorneys for Applicant



OIL CONSERVATION COMMISSION

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

GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

June 15, 1973

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: Case No. 4953
Order No. R-4549
Applicant:
Atlantic Richfield Co.

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other State Engineer Office
Mr. A. J. Losee, Mr. Jason Kellahin, Mr. Richard Morris,
Mr. Bruce A. Landis

*File
Case 4952*

SAMEDAN VERBAL STATEMENT
PROPOSED EMPIRE ABO UNIT
EDDY COUNTY, NEW MEXICO

If Samedan Oil Corporation were to join the proposed Empire Abo Unit, it would suffer both loss of ultimate and current income. Samedan's interest in the proposed Unit is in Tracts 49 and 79 as shown on Exhibit "B" of the Unit Agreement (1-1-72). Atlantic Richfield's study indicates the following:

<u>Tract</u>	<u>Operator and Lease</u>	<u>Royalty Owner</u>	<u>* Primary Oil Reserves 1-1-73</u>
49	Samedan-Walker State No. 1	State of New Mexico	400,379
79	Chambers & Kennedy-Abo No. 1	State of New Mexico	404,385

* Atlantic Richfield's Remaining Primary Oil Reserves (1-1-71) less 1971 and 1972 oil production.

Samedan's share of this forecasted reserve is 347,652 barrels of oil.

Samedan's share of the unitized reserve under the proposed participation is 335,946 barrels of oil which includes the company's share of the predicted 30.1 million barrels of incremental secondary oil.

Samedan would be required to invest \$20,615.00 in the unit operation to recover 11,706 less barrels of oil.

Phase I is defined as the first eleven (11) million barrels of oil produced after the effective date of the Unit. According to the updated Engineering Report furnished by Atlantic Richfield on November 21, 1972, Phase I will have a duration of 9.5 months. We estimate our two (2) wells to be top allowable for another 3.75 years before commencing decline. During this 3.75 year period Samedan will lose 47,882 barrels of oil by joining the Unit.

Therefore, Samedan has no incentive to join this Unit and wishes to register opposition to its formation under the formula that has been adopted.

The quality of the reef pay varies widely across the length of the reservoir as depicted by the thirteen (13) bands that were used in the model studies. Permeability, or the capacity to produce, ranges from 12 to 195 millidarcies from west to east. It is noted that forty-seven percent (47%) of the total tracts and thirty-eight percent (38%)

of the productive tracts inside the Unit outline are not capable of producing top allowable as set out in the annual "Report of the New Mexico Oil and Gas Engineering Committee" for the Calendar Year of 1971. The majority of the future productivity must come from an area between the west edge of Section 2, Township 18 South, Range 27 East and the Center of Section 25, Township 17 South, Range 29 East. Allowable transfers will hasten the recovery from this area as migration of oil continues. Anyone owning an interest in a well in this area not receiving sufficient incentive to join the proposed Unit could not protect their correlative rights with the increased withdrawals due to allowable transfer. Likewise, normal migration of oil would be severely altered resulting in loss of ultimate oil recovery by a non-unit well.

Further damage would be experienced if gas injection were permitted in the vicinity of a non-unit well due to gas coning. This gas coning concept was developed in the Engineering Report in arriving at maximum safe oil producing rates as well as predicted future oil reserves.

We ask that this Commission give due consideration to approving the items of recommendation set out below as protection to those Royalty and Working Interest Owners not having sufficient incentive to join the proposed Unit.

Recommendations

1. All unit wells which directly or diagonally offset any non-unit well, all of which are producing from the same common source of supply, be restricted to produce an amount of oil equal to the top well allowable.
2. Top unit allowable shall be equal to the sum of the individual unit well allowables providing the allowable assigned to any well which is shut-in, which allowable is to be transferred to any well or wells in the unitized project area for production, shall in no event be greater than its ability to produce during the final 24-hour period of a 72-hour test, or greater than the current top well allowable for the pool during the month of transfer, whichever is less.
3. The injection of gas into any unit well not be permitted within 2,640 feet in any direction from the boundary of any non-unit tract.
4. The following be made a provision and included as part of the Commission Order: If it is apparent, as pointed out by any non-joining party, that correlative rights are not being protected, that the Commission agree to consider what other measures are necessary for such protection.



STATE OF NEW MEXICO
 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
 OIL CONSERVATION DIVISION

July 30, 1990

GARREY CARRUTHERS
 GOVERNOR

POST OFFICE BOX 2088
 STATE LAND OFFICE BUILDING
 SANTA FE, NEW MEX CO 87504
 (505) 827-5800

ARCO Oil & Gas Company
 P.O. Box 1610
 Midland, Texas 79702

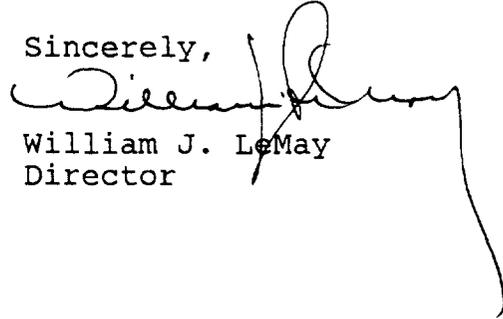
Attention: Gary B. Smallwood

Dear Mr. Smallwood:

Reference is made to your request dated June 5, 1990, to alter the perforated intervals in the Empire Abo Pressure Maintenance Project Injection Well Nos. F-27, F-31 and G-24. It is our understanding that the proposed alteration should result in improved recovery of NGL's from the Empire Abo Pool. It is further our understanding that the subject wells have previously been approved for injection by Division Order Nos. R-4549, PMX-60 and PMX-65.

You are hereby authorized to squeeze the current perforations and re-perforate the subject wells within the intervals indicated below:

<u>WELL NUMBER & LOCATION</u>	<u>CURRENT PERFORATIONS</u>	<u>PROPOSED PERFORATIONS</u>
F-27, G, 32, 17S, 28E	5884'-5920'	6030'-6055'
F-31, G, 33, 17S, 28E	5828'-5887'	6107'-6134'
G-24, I, 31, 17S, 28E	5862'-5883'	6024'-6050'

Sincerely,

 William J. LeMay
 Director

xc: OCD-Artesia
 File-Case No. 4953
 PMX-60, PMX-65

ARCO Oil and Gas Company ◆

Central District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 688 5200

1990 JUN 11 10 13 14

June 5, 1990

Mr. David Catanach
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

RE: Empire Abo Unit Pressure Maintenance Project
Empire Abo Pool; Eddy Co., New Mexico
Administrative Approval Request for Lowering Perforations in 3 GIW's

Dear Sir:

As we discussed in our phone conversation of March 30, ARCO Oil and Gas is proposing to perforate deeper, in the Abo formation, three existing gas injection wells in the Empire Abo Unit. The three wells are F-27, F-31 and G-24. Wellbore schematics are attached showing the current completions of the three wells. All three wells have been injecting residue gas near the top of the Abo formation.

Well F-27 formerly called the Hondo State A #35 has been injecting by Administrative Order PMX #60 dated September 5, 1974. Well F-31, the ARCO M. Yates B ARC #8, has been injecting under approval of the initial unit order # R-4549 and Well G-24 was approved by Administrative Order PMX #65 in February of 1976.

The enclosed plat indicates the location of the three wells. As you can see there are other wells located between the injection wells and the Empire Abo Unit boundaries. In addition, Well F-27 is 1900' from the next offset Abo Unit, Well F-31 is 1800' from the next offset unit and Well G-24 is more than 2000' from the unit boundary. Order #R-4549 provides for administrative approval for locations not less than 1650' from a tract not committed to the unit and on which is located a well producing from the same common source of supply.

Wellbore schematics are attached showing the proposed completion of the three wells.

We expect the proposed operations to improve recovery of NGL's from the reservoir by contacting more residual oil in the gas cap. The final attachment is a self explanatory visual representation of the expected process.

Please consider our request for administrative approval for perforating deeper in the Abo in the subject wells at your earliest convenience. Thank you very much.

Sincerely,


Gary B. Smallwood
Sr. Engineer

Attachment
GBS/GIWLPS-Rev I

Mr. David Catanach
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

RE: Empire Abo Unit Pressure Maintenance Project
Empire Abo Pool; Eddy Co., New Mexico
Administrative Approval Request for Lowering Perforations in 3 GIW's

Distribution:

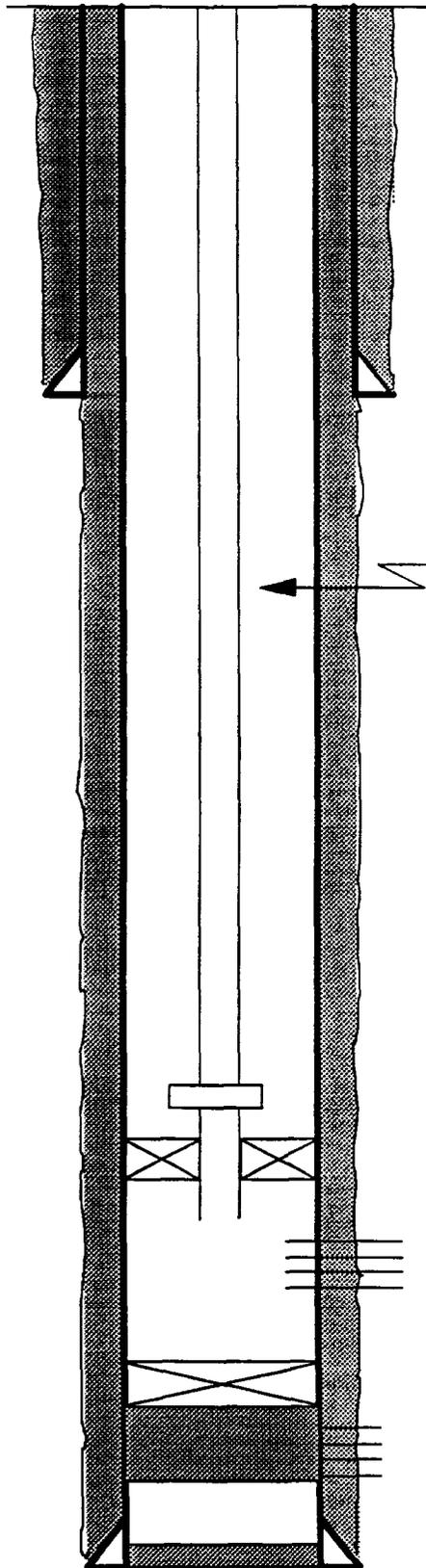
Mr. Mike Williams
811 S. First Street
P. O. Drawer DD
Artesia, New Mexico 88210

J. T. Lowder MIO-733
L. A. Lane MIO-529

Empire Abo Unit F-27 GIW

SUBJECT: PRESENT STATUS

BY: D.C. BRETCHES



DATUM: RKB(11')



8-5/8" 28# J55 Surf CSG
set @ 1003'. CMTD w/ 450 sx.

TOC: SURF

← 184 jts 2-3/8" 4.7# 8RDEUE
J55 IPC TBG Btm'd @ 5790'

ER Receptacle w/ 1.81" R Profile
Baker 5-1/2" Lok Set PKR @ 5790'
1 jt 2-3/8" 4.7# 8RDEUE J55 IPC TBG

Open Abo Perfs 5884, 86, 88, 93, 95,
5905, 07, 09, 11, 13, 18, & 20 (12 holes)

CR set @ 5941'

Squeezed Abo Perfs
5980-90' (20 holes) & 6041-68' (15 holes)
Squeezed w/ 150 sx cmt

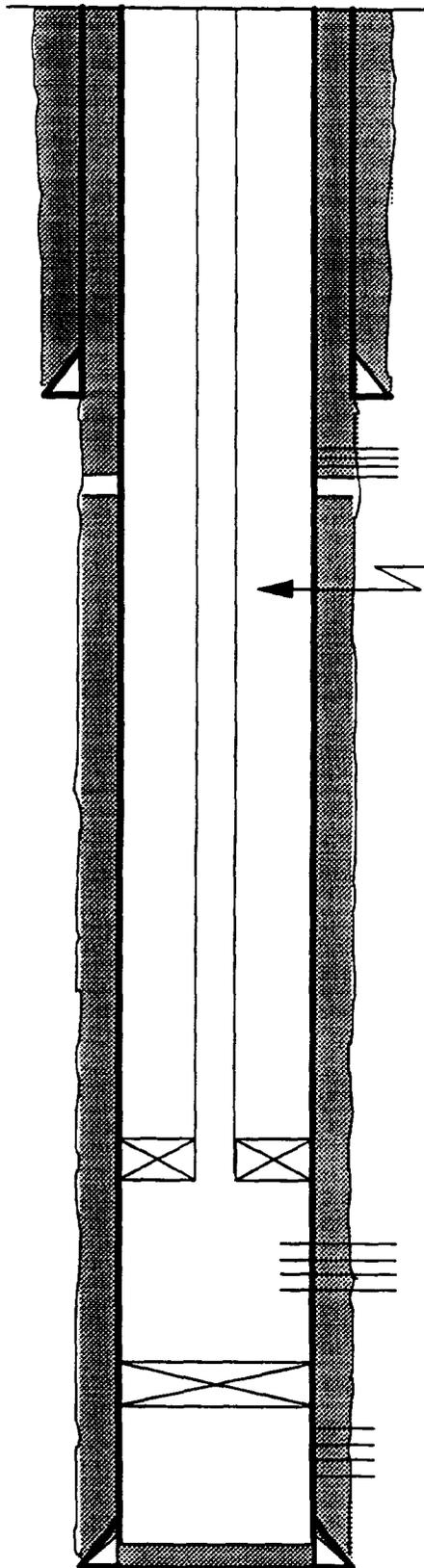
5-1/2" 15.5# J55 Prod CSG
set @ 6108'. CMTD w/ 170 units &
150 sx. TOC: Surf

PBD: 5941'
TD: 6108'

Empire Abo Unit F-31 GIW

SUBJECT: PRESENT STATUS

BY: D.C. BRETCHES



DATUM: GL



8-5/8" 23# SW SJ Surf CSG
set @ 1000'. CMTD w/ 650 sx.

TOC: SURF

Squeeze perfs @ 1248'

184 jts 2-3/8" 4.7# 8RDEUE
J55 IPC TBG Btm'd @ 5753'

Guiberson H-1 Hydraulic Holddown Anchor
Guiberson KVL-30 Production Packer
set @ 5753'

Open Abo Perfs 5828, 34, 40, 50, 55,
60, 69, 76, 81, & 87 (10 holes)

CIBP set @ 6050'

Isolated Abo Perfs
6107-34' (54 holes)

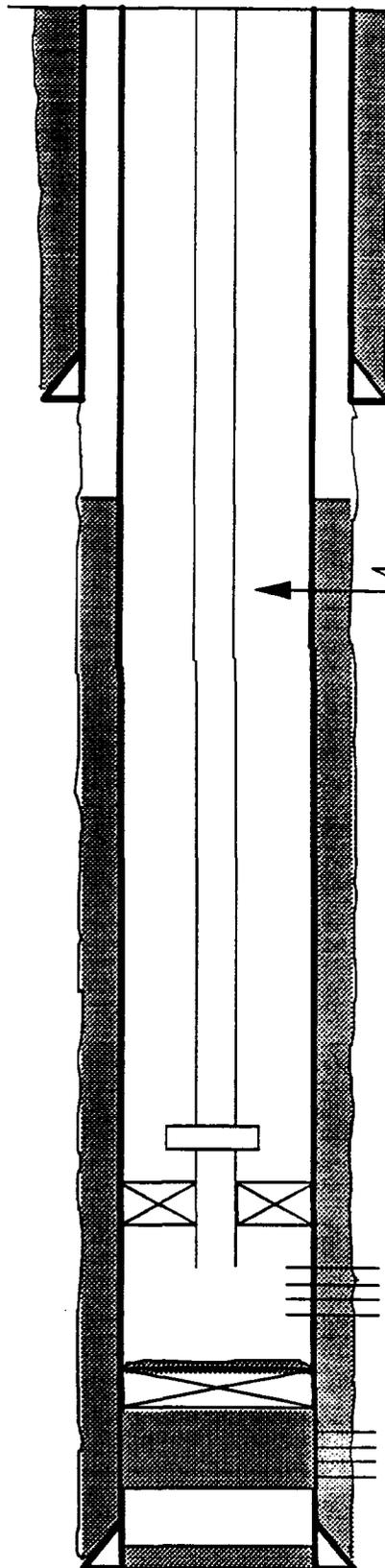
4-1/2" 9.5# & 11.6# J55 Prod CSG
set @ 6175'. CMTD w/ 800 sx
TOC: Surf

PBD: 6050'
TD: 6175'

Empire Abo Unit G-24

SUBJECT: PRESENT STATUS

BY: D.C. BRETCHES



DATUM: GL



8-5/8" 28# J55 Surf CSG
set @ 750'. CMTD w/ 250 sx.

TOC: SURF

186 jts 2-3/8" 4.7# 8RDEUE
J55 IPC TBG Btm'd @ 5787'

ER Receptacle w/ 1.81" R Profile
Baker 5-1/2" Lok Set PKR @ 5787'
1 jt 2-3/8" 4.7# 8RDEUE J55 IPC TBG

Open Abo Perfs
5862-83' (22 holes)

Top of fill on CR @ 5952'

5-1/2" CR set @ 5960

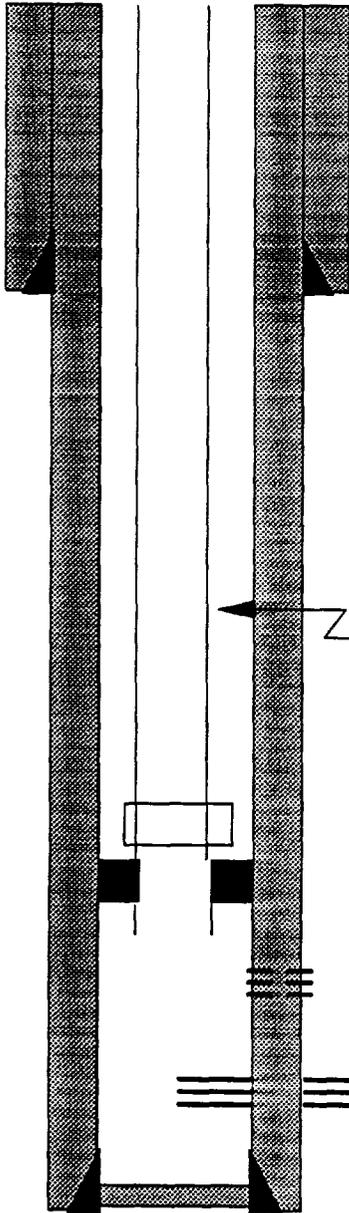
Original Abo Perfs
6024-44' (40 holes)

Squeezed w/ 175 sx cmt

5-1/2" 15.5# J55 Prod CSG
set @ 6104'. CMTD w/ 1100 sx
TOC: 1000' - Calculated

PBD: 5952'
TD: 6106'

**Empire Abo Unit F-27 GIW
Proposed Status**



8-5/8" 28# J55 @ 1003'.
Cmt. w/450 sx

2-3/8" 4.7# EUE
J55 IPC

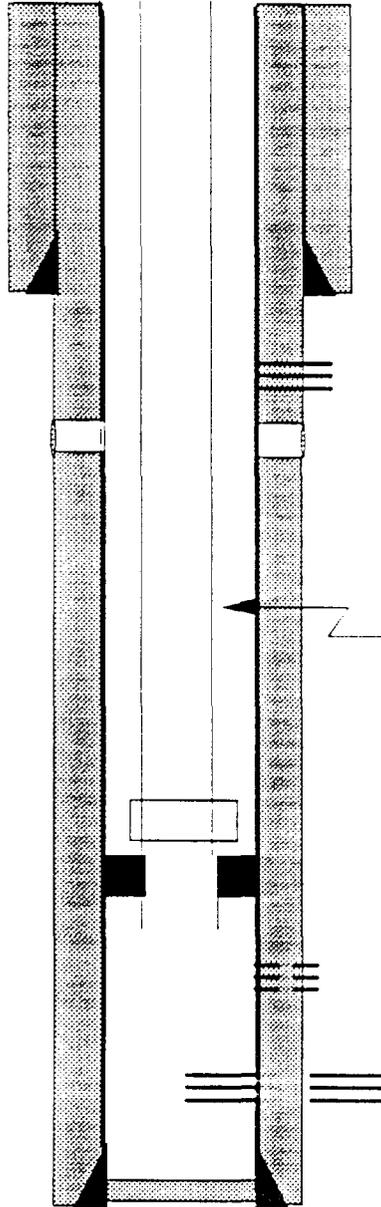
ER Receptacle w/ 1.81" R Profile
Baker 5-1/2" Lok set with
1 jt. 2-3/8" 4.7# EUE J55 IPC Tbg.

Squeezed Abo Perfs 5884'-5920'
12 holes.

Proposed Abo perfs. 6030'-55' (50 holes)

5-1/2" 15.5# J55 @ 6108'.
PBD= 6070'
TD= 6108'

**Empire Abo Unit F-31 GIW
Proposed Status**



8-5/8" 23 ppf, SW, SJ @ 1000'
Cmt. w/650 sx

Squeeze perfs. @ 1248'

2-3/8" 4.7# EUE
J55 IPC

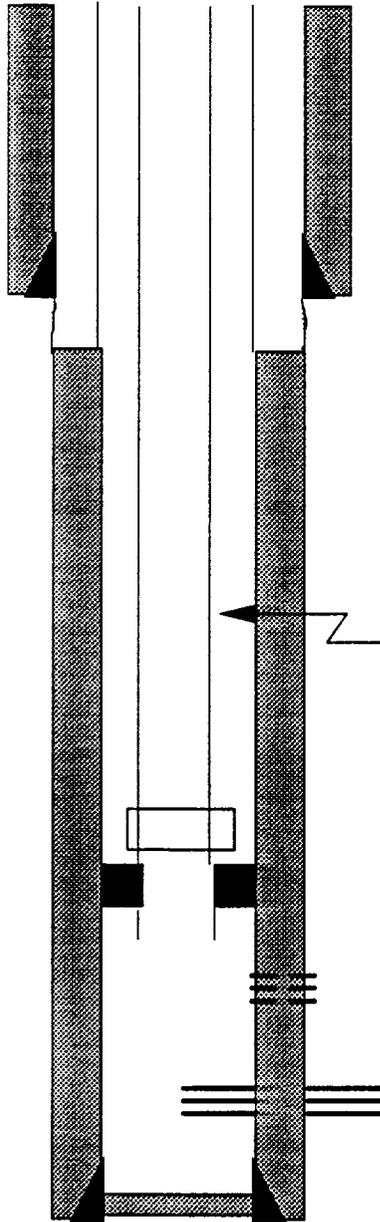
Baker FL on/off w/1.81" R Profile
Baker 5-1/2" Lok set with
1 jt. 2-3/8" 4.7# EUE J55 IPC Tbg.

Squeezed Abo Perfs 5828'-87'
10 holes.

Proposed Abo perfs. 6107-34' (54 holes)

4-1/2" 9.5 & 11.6 ppf, J-55 @ 6175'
PBD= 6157'
TD= 6175'

**Empire Abo Unit G-24 GIW
Proposed Status**



8-5/8" 28# J55 @ 750'.
Cmt. w/ 250 sx

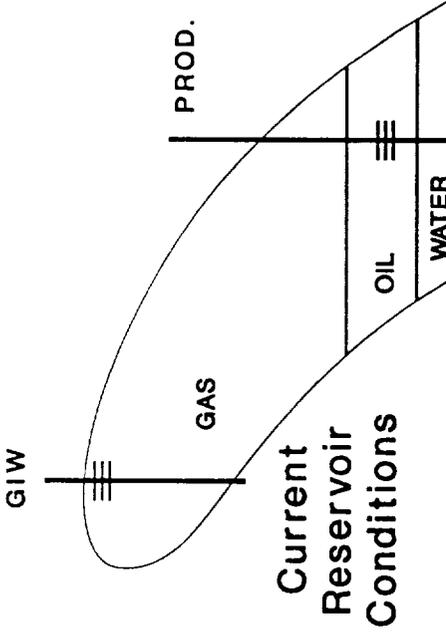
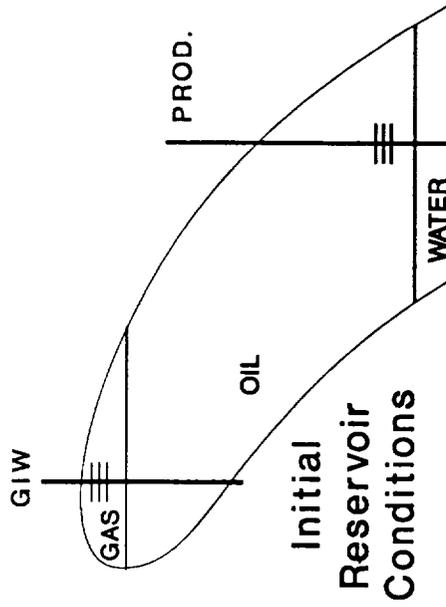
2-3/8" 4.7# EUE
J55 IPC

ER Receptacle w/ 1.81" R Profile
Baker 5-1/2" Lok set with
1 jt. 2-3/8" 4.7# EUE J55 IPC Tbg.

Squeezed Abo Perfs 5862'-83'
(22 holes).

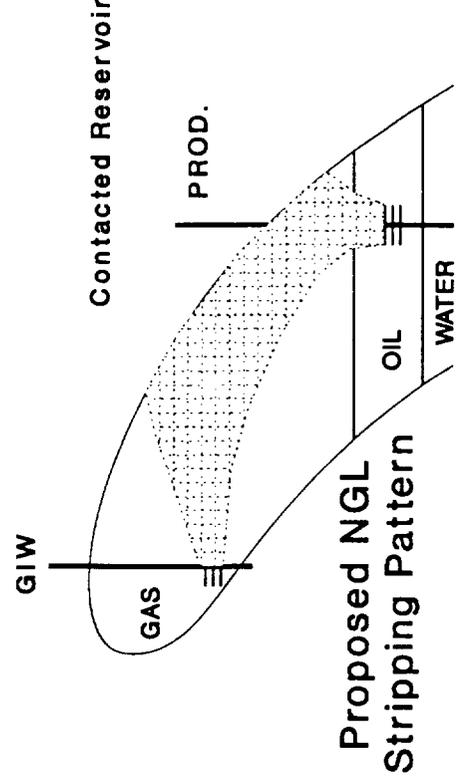
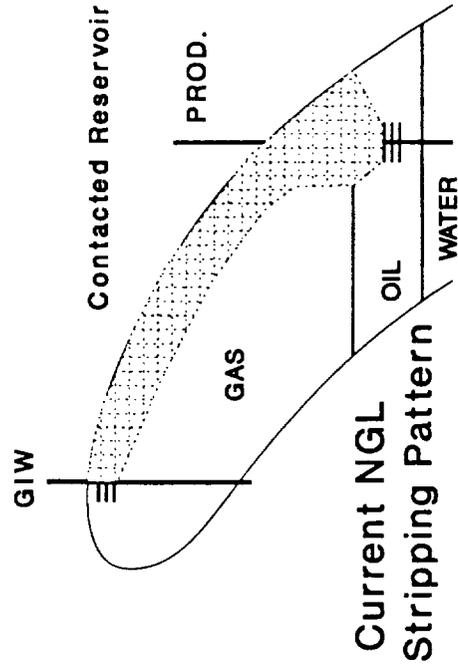
Proposed Abo perfs. 6024'-50' (52 holes)

5-1/2" 15.5# J55 @ 6104'. TOC @ 1000' Calc.
PBD= 6068'
TD= 6106'



Current Conditions

EMPIRE ABO UNIT
Reservoir Schematic

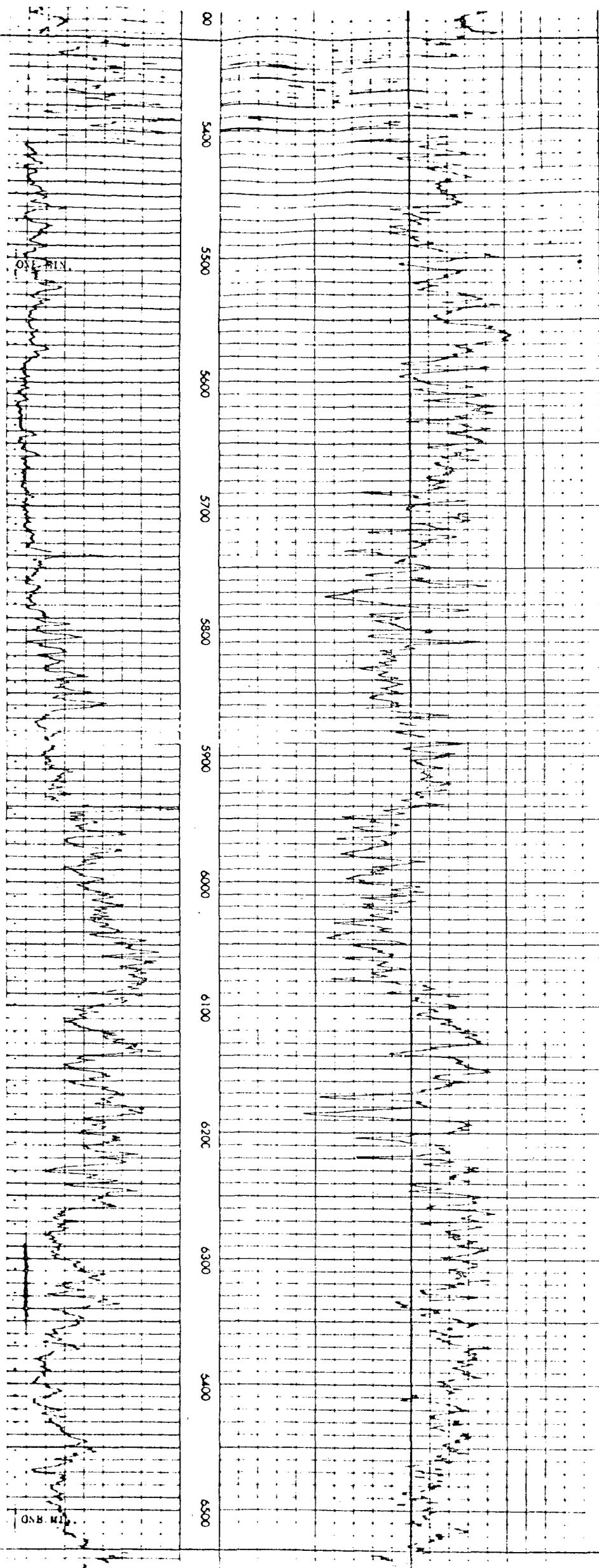


Contacted Reservoir

RADIOACTIVITY LOG

BASE OF THE DRINKARD

5325 (-1784)



TOP OF THE WOLFCAMP (LIMESTONE)

6533 (-2992)

ATLANTIC RICHFIELD COMPANY
M. Yates "B" (ARC) Well No. 8
1980' FNL & 2130' FEL SEC. 33, T-17-S, R-28-E
EDDY COUNTY, NEW MEXICO
GAMMA RAY - ISOTRON

ENTIRE ABO UNIT
PLAN OF OPERATION
EXHIBIT 3

