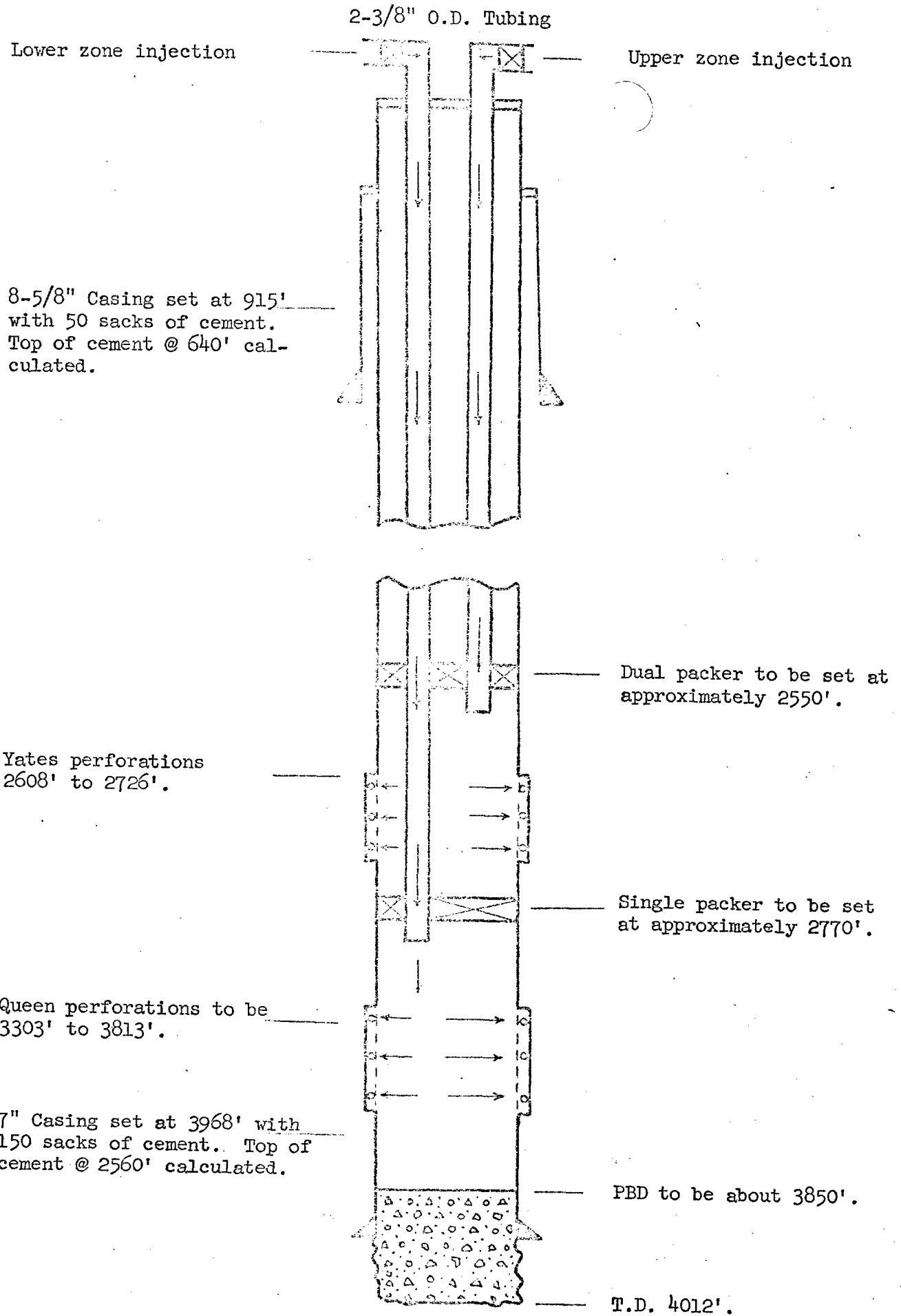


ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 1  
 (Formerly Hinkle "B" No. 3)  
 330' FSL & 330' FEL, Sec. 27, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO



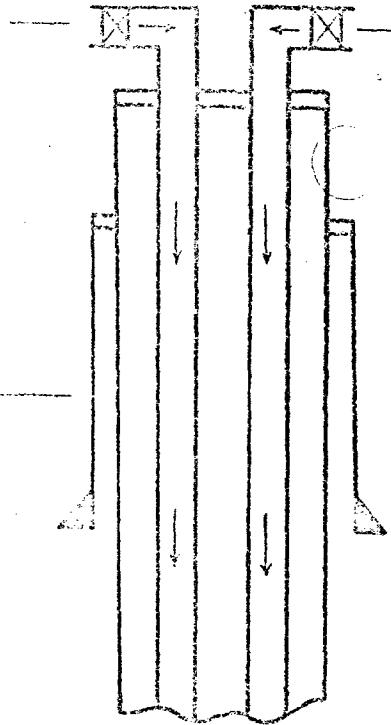
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 3  
 (Formerly Hinkle "A" No. 13)  
 990' FHL & 330' FEL Sec. 34, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

Lower zone injection.

2-3/8" O.D. Tubing.

Upper zone injection.

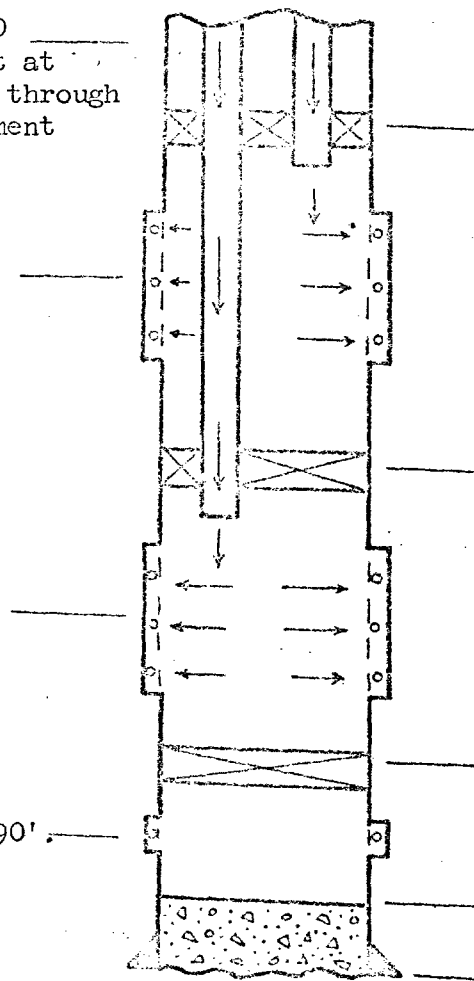
8-5/8" Casing set at 910' with 50 sacks of cement. Top of cement @ 635' calculated.



7" Casing set at 4117' with 200 sacks of cement. Top of cement at 2067' calculated. 7" Squeezed through perf. 2794 with 75 sacks of cement before Yates.

Dual packer to be set at approximately 2550'.

Yates perforations 2632' to 2818'.



Single packer to be set at approximately 2870'.

Queen perforations 3324' to 3850'.

Bridge plug to be set at 3870'.

Queen perforations 3880' to 3890'.

PBD 3948'.

T.D. 4117'.

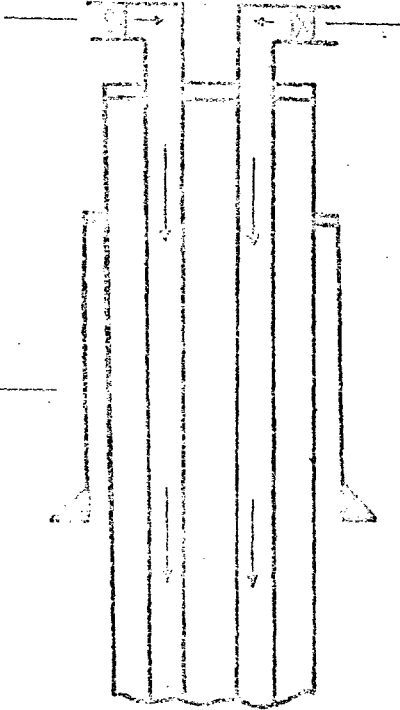
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 6  
 (Formerly Hinkle "A" No. 12)  
 990' FNL & 2310' FWL Sec. 35, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

Lower zone injection.

2-3/8" O.D. Tubing

Upper zone injection.

8-5/8" Casing set at 898' with 50  
 sacks of cement. Top of cement @  
 625' calculated.



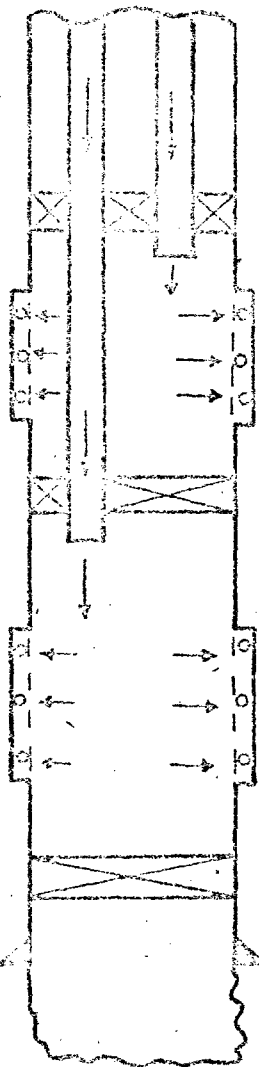
7" Casing set at 4115' with 225  
 sacks of cement. Top of cement at  
 1815' calculated.

Yates perforations 2649' to  
 2817'.

Dual packer to be set at  
 approximately 2650'.

Single packer to be set  
 at approximately 2870'.

Queen perforations 3360' to 3877'.



PBTD 4093' (CIBP)

TD 4292'.

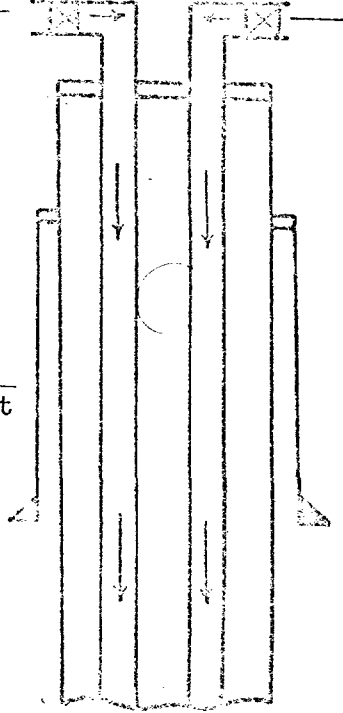
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 15  
 (Formerly Hinkle "B" No 5)  
 2310' FNL & 2310' FWL, Sec. 34, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

Lower zone injection.

Upper zone injection.

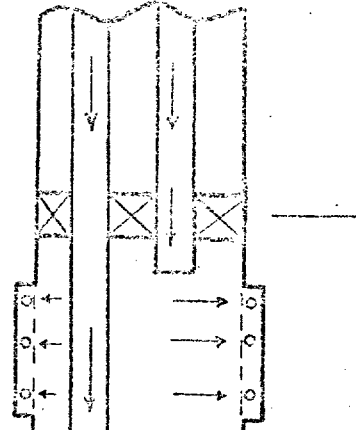
2-3/8" O.D. Tubing.

8-5/8" Casing set at 875' with  
 50 sacks of cement. Top of cement  
 @ 600' calculated.



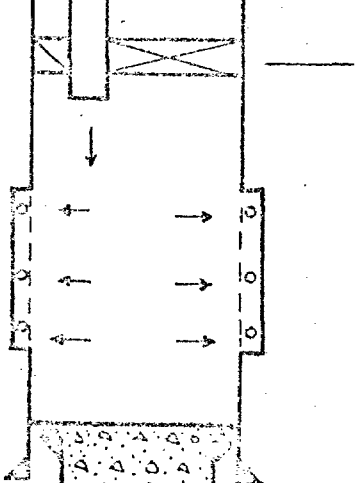
Yates perforations to be  
 2620' to 2772'.

Dual packer to be set at  
 approximately 2580'.



Queen perforations to be 3313'  
 to 3832'.

Single packer to be set at  
 approximately 2820'.



7" Casing set at 4075' w/225  
 sacks of cement.

PBTD 3950'.

Top of cement @ 1960' calculated.  
 4-1/2" liner 3961' to 4461'.  
 Cemented with 50 sacks.



T.D. 4494'.

ATLANTIC RICHFIELD COMPANY  
SCHEMATIC DRAWING  
EAST SUGARE UNIT WELL NO. 16  
(Formerly Hinkle "B" No. 6)  
1650' FSL & 990' FWL Sec. 34, T-18-S, R-31-E  
EDDY COUNTY, NEW MEXICO

2-3/8" O.D. Tubing.

Lower zone injection.

8-5/8" casing set at 862'  
with 50 sacks of cement. Top  
of cement @ 585' calculated.

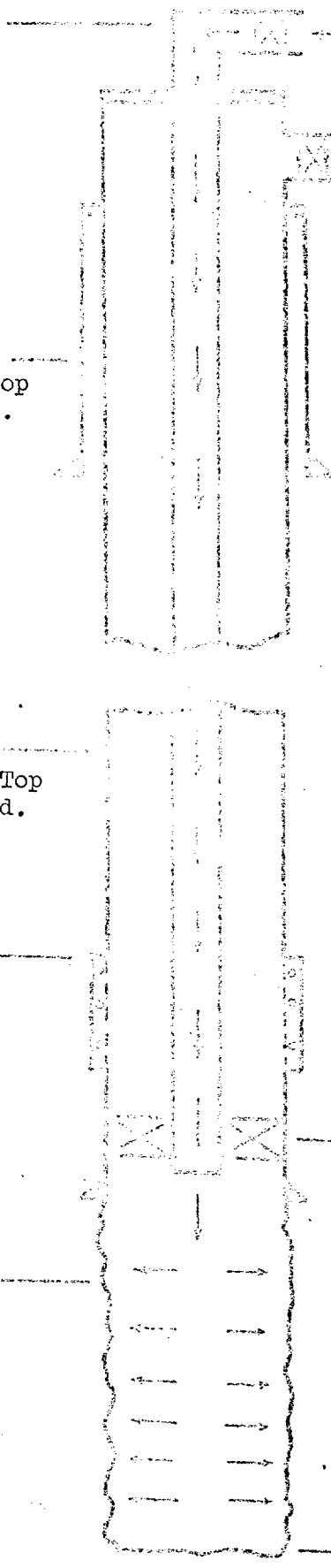
5-1/2" casing set at 2902'  
with 150 sacks of cement. Top  
of cement @ 2275' calculated.

Yates perforations  
2634' to 2777'.

Packer to be set at about  
2820'.

Open hole to be 2902' to  
3885'.

T.D. 3885'.



ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 19  
 (Formerly Hinkle "A" No. 3)  
 1650' FSL & 330' FWL Sec. 34, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

2-3/8" O.D. Tubing.

Lower zone injection.

Upper zone injection.

8-5/8" Casing set at 920' with  
 50 sacks of cement. Top of  
 cement @ 645' calculated.

7" Casing cut off at  
 1500'.

7" Casing set at 2678' with 100  
 sacks of cement. Top of cement  
 @ 1628' calculated.

Yates perforations 2706' to  
 2842'.

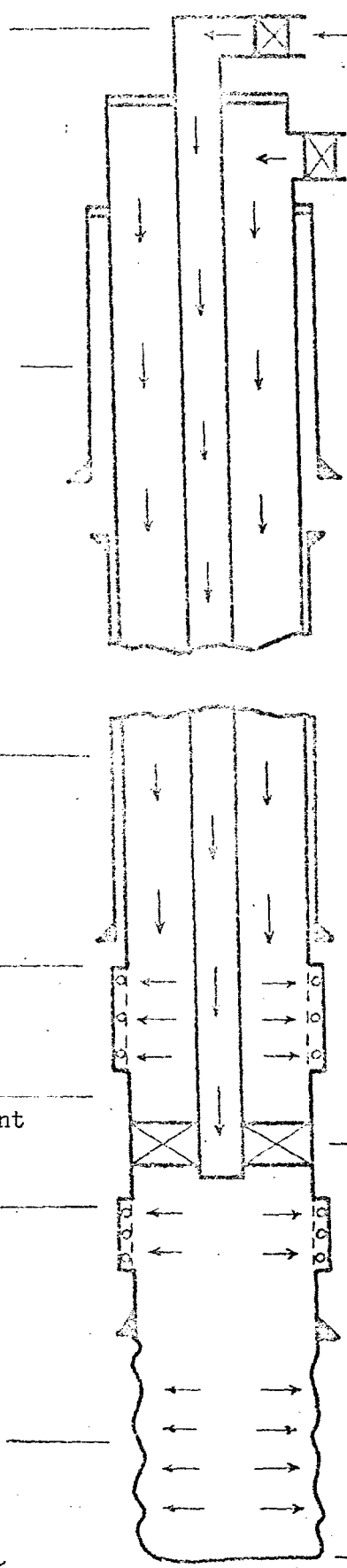
4-1/2" Casing set at 3477' with  
 100 sacks of cement. Top of cement  
 at 2493' calculated.

Packer to be set at  
 approximately 2900'.

Queen perforations 3324' to  
 3445'.

Open hole 3477' to 3850'.

T.D. to be 3850'.



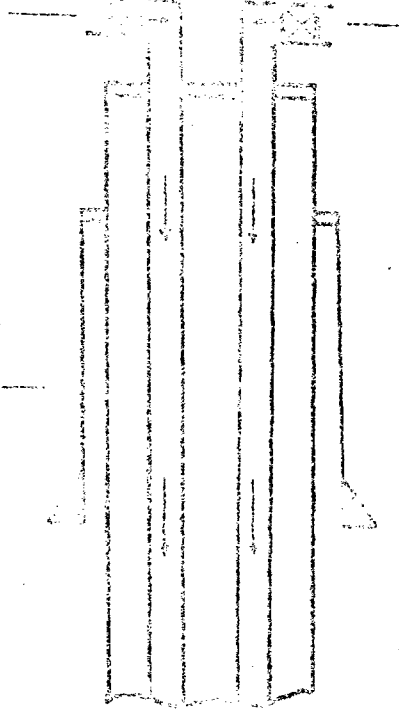
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 22  
 (Formerly Hinkle "B" No. 4)  
 2310' FSL & 2310' FEL Sec. 35, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

Lower zone injection.

2-3/8" O.D. Tubing

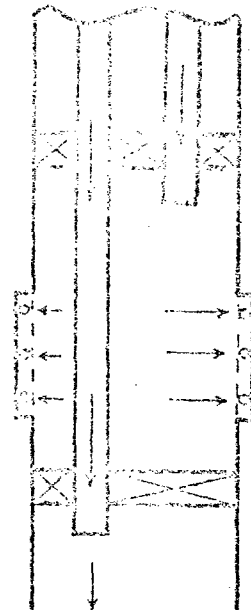
Upper zone injection.

8-5/8" Casing set at 940' with  
 50 sacks of cement. Top of  
 cement @ 665' calculated.



Yates perforations 2772' to  
 2876'.

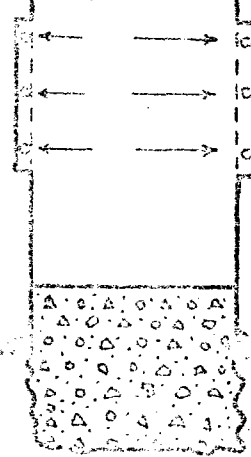
Dual packer to be set at  
 approximately 2720'.



Single packer to be set at  
 approximately 2920'.

Queen perforations 3391' to  
 3912'.

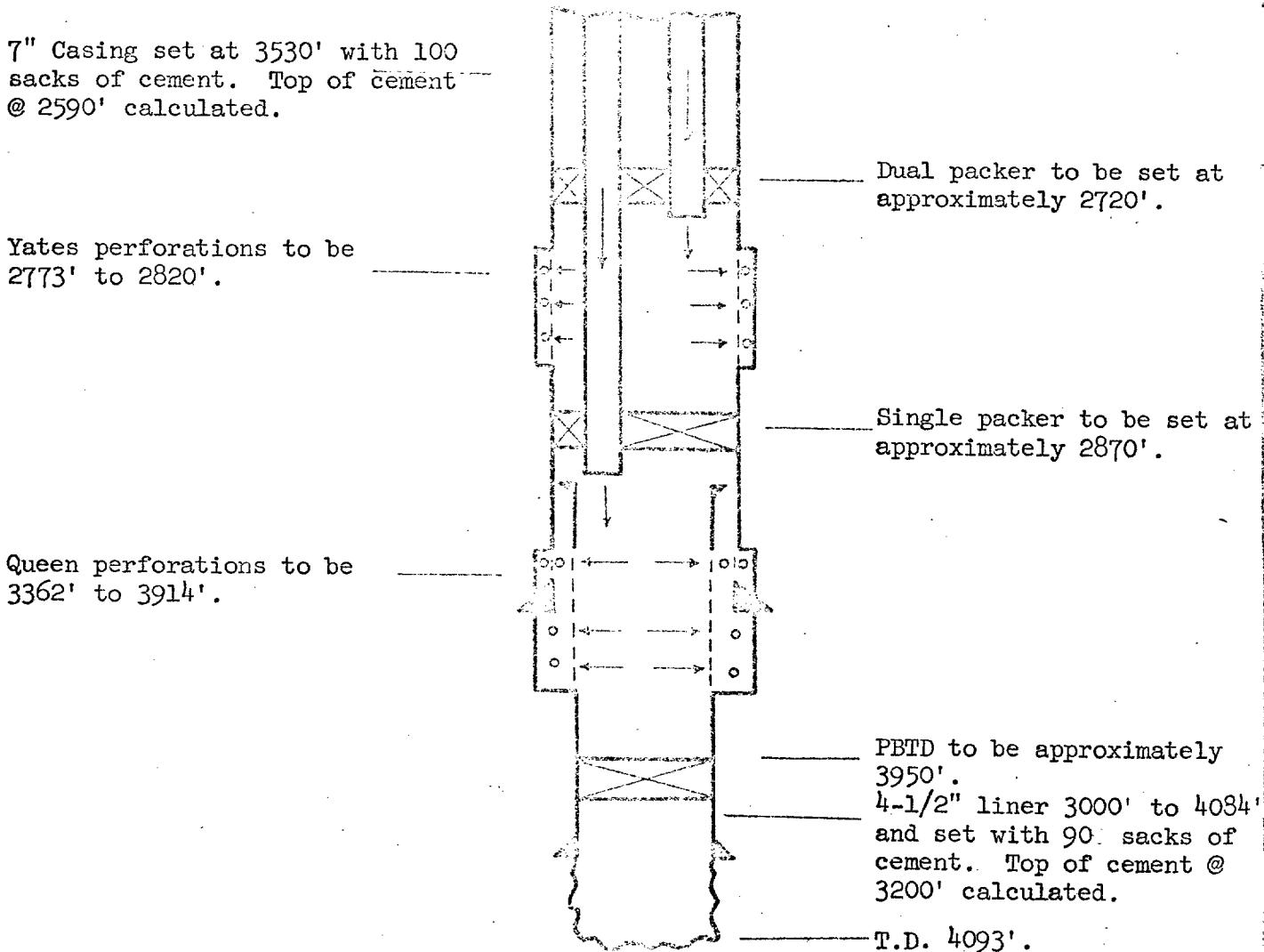
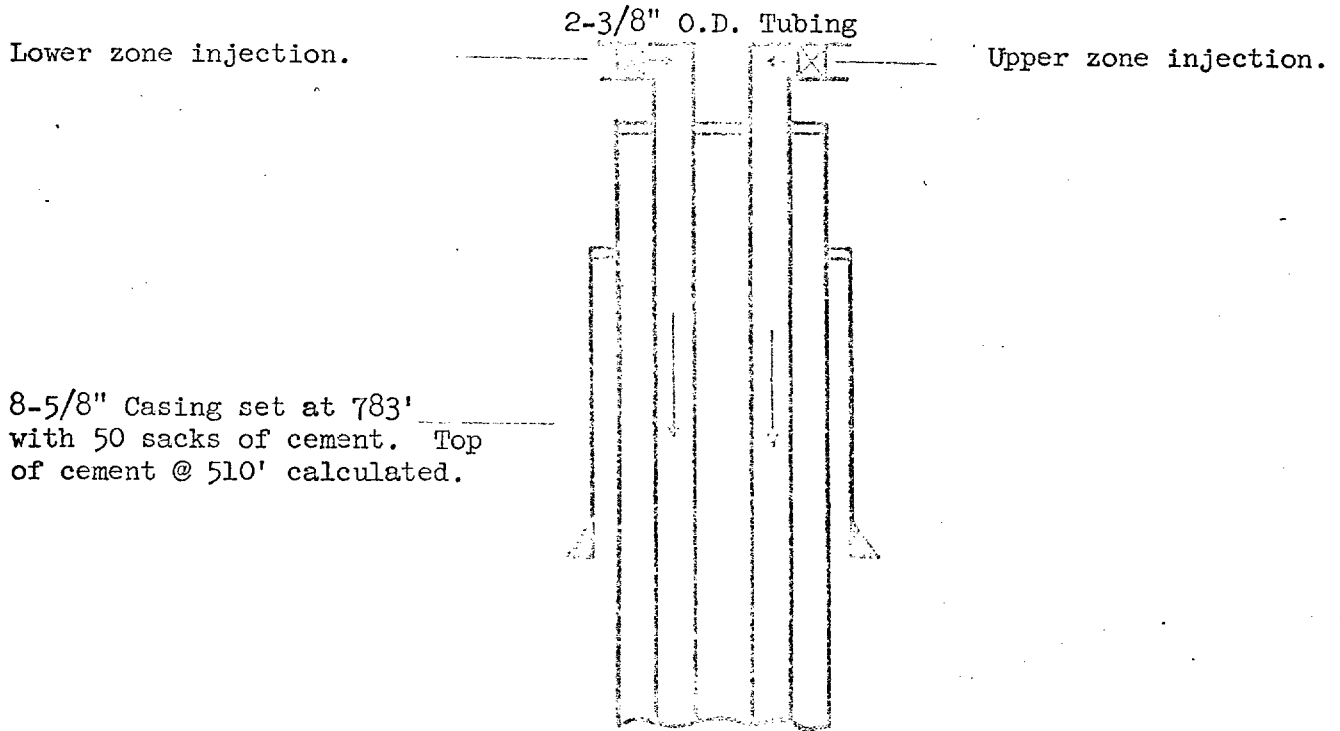
7" Casing set at 3940' with 150  
 sacks of cement. Top of cement at  
 3315' calculated.



PBTD 3925'.

TD 3945'.

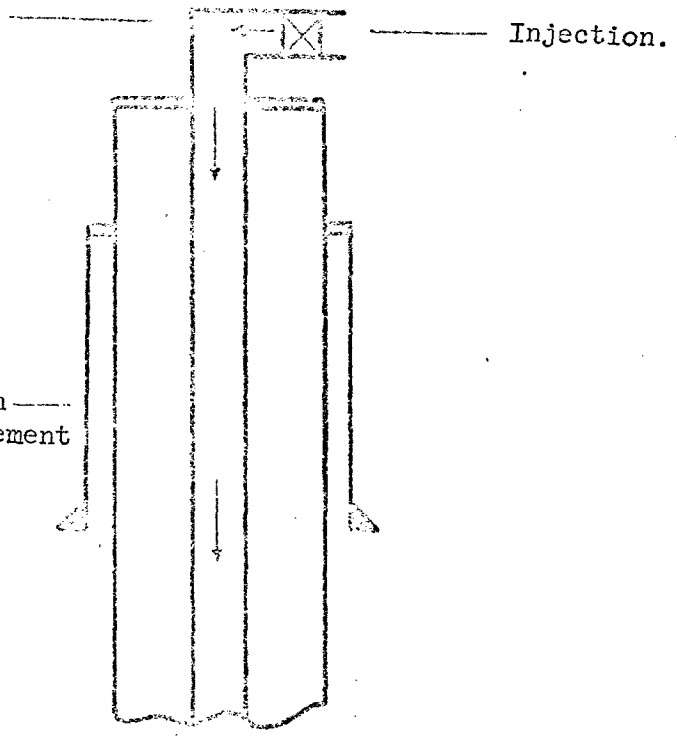
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 23  
 (Formerly Hinkle "B" No. 7Y)  
 330' FSL & 2329' FEL Sec. 35, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO





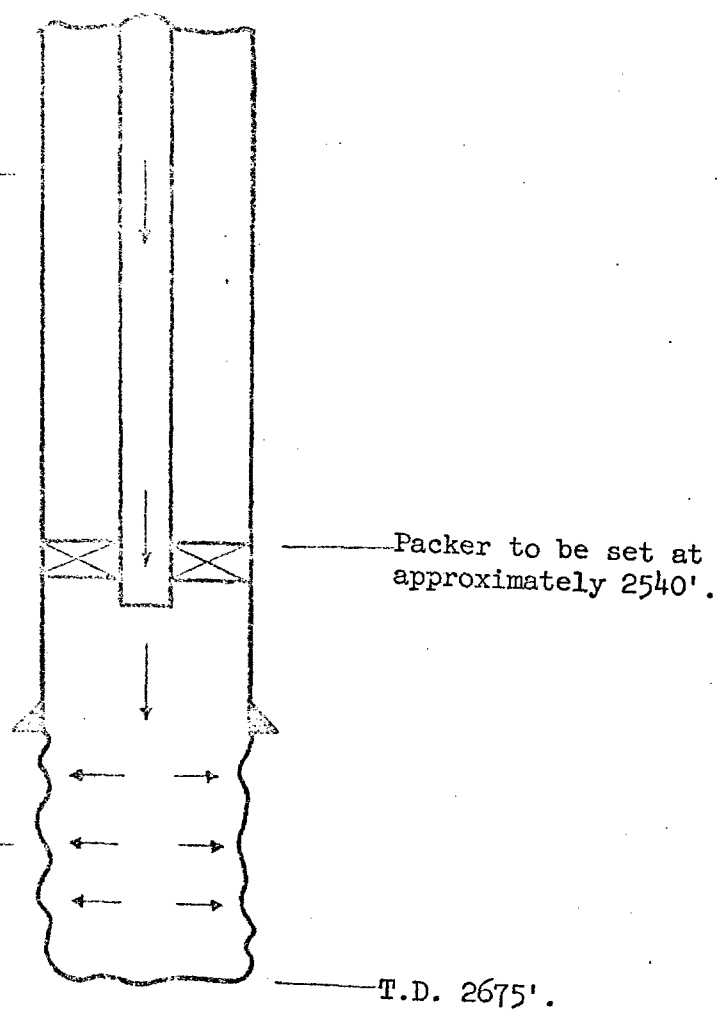
ATLANTIC RICHFIELD COMPANY  
SCHEMATIC DRAWING  
EAST SHUGART UNIT WELL NO. 28  
(Formerly CSO Hinkle "A" No. 1)  
330' FSL & 2310' FEL Sec. 34, T-18-S, R-31-E  
EDDY COUNTY, NEW MEXICO

2-3/8" O.D. Tubing.



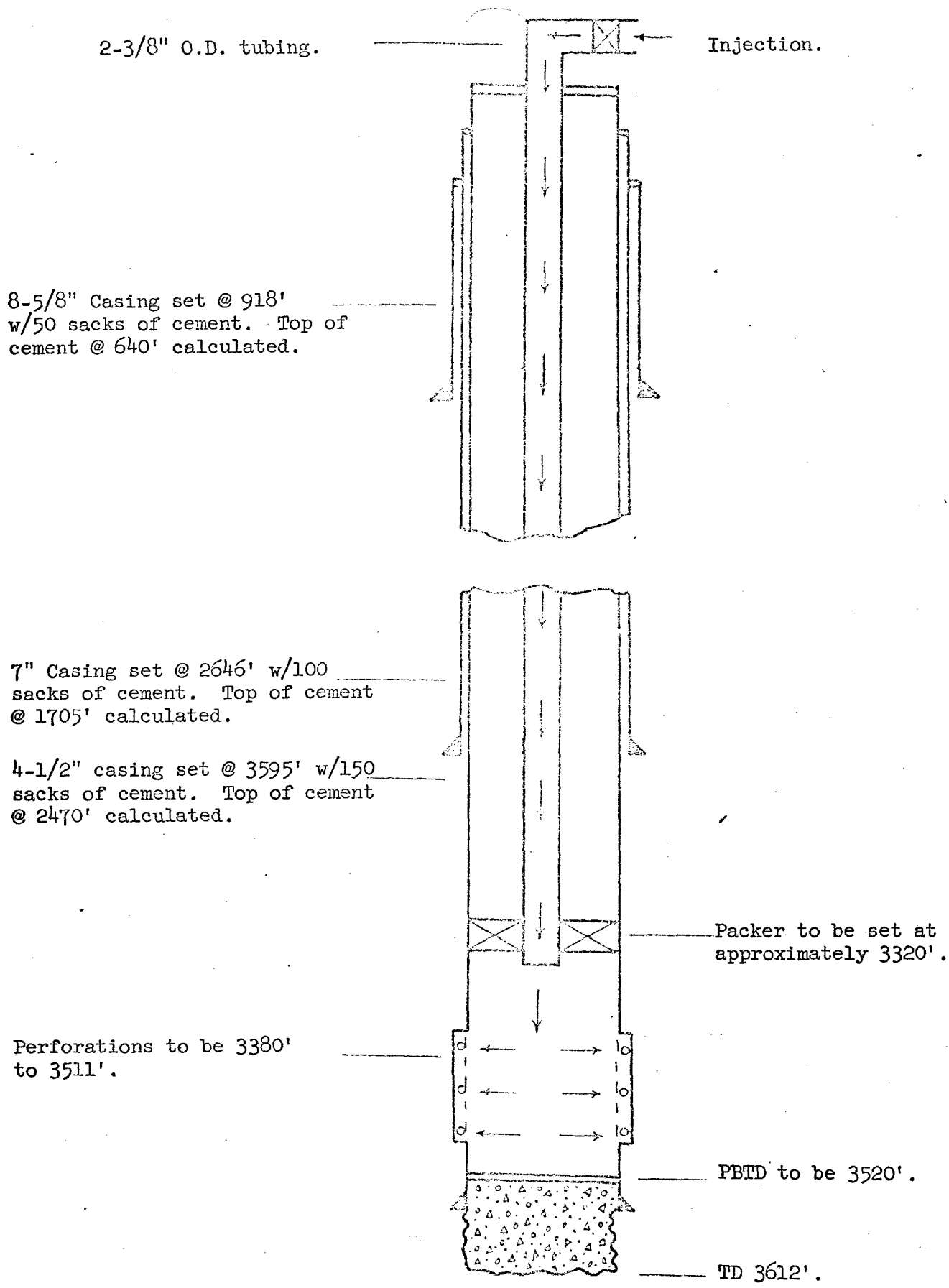
8-5/8" Casing set at 944' with 50 sacks of cement. Top of cement @ 670' calculated.

7" Casing set at 2591' with 100 sacks of cement. Top of cement @ 1650' calculated.



Yates open hole interval 2591' to 2675'.

ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST SHUGART UNIT WELL NO. 29  
 (Formerly Hinkle "B" No. 1)  
 330' FSL & 2310' FWL Sec. 34, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO



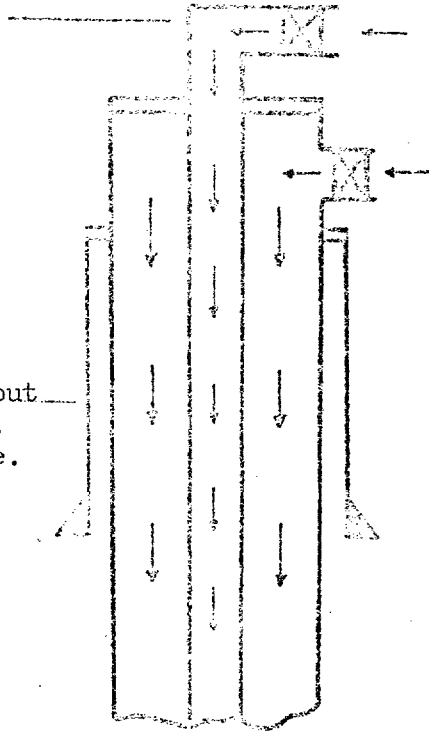
ATLANTIC RICHFIELD COMPANY  
 SCHEMATIC DRAWING  
 EAST STUGART UNIT WELL NO. 32  
 (Well to be drilled)  
 100' FSL & 990' FWL Sec. 35, T-18-S, R-31-E  
 EDDY COUNTY, NEW MEXICO

2-3/8" O.D. Tubing.

Lower zone injection.

Upper zone injection.

8-5/8" Casing to be set at about  
 800' with 400 sacks of cement.  
 Cement calculated to circulate.



Yates perforations to be  
 about 2720' to 2800'.

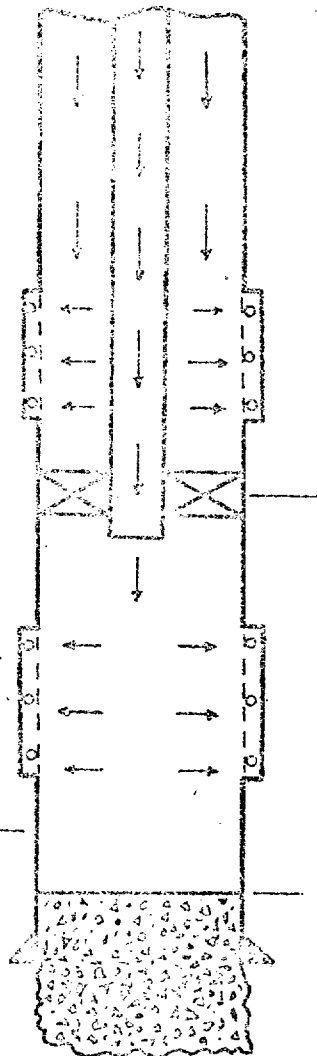
Packer to be set at  
 approximately 2850'.

Queen perforations to be  
 about 3320' to 3880'.

4-1/2" Casing to be set about  
 3925' with 400 sacks of cement.  
 Top of cement to be about 2000'  
 calculated.


PBTD to be about  
 3895'.

T.D. to be about 3930'.



ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 1  
 Formerly Hinkle "B" No. 3  
 Sec. 27, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5

LANE  WELLS		Radioactivity Log	
COMPANY: ROHRMAN & JAUREGIS WELL: HINKLE J-B FIELD: SHUGART LOCATION: SEC. 27, T-18-S, R-31-E COUNTY: EDDY STATE: N.M. PERM. DATUM: MEN VALUO	COMPANY: <u>ROHRMAN &amp; JAUREGIS</u>	Well Location	
	WELL: <u>HINKLE J-B</u>		
	FIELD: <u>SHUGART</u>		
	LOCATION: <u>330' FSL &amp; 330' FSL OF SEC. 27, T-18-S, R-31-E</u>		
	COUNTY: <u>EDDY</u>	STATE: <u>N. MEX.</u>	
	LOG ZERO: <u>CABLE TOOL FLOOR</u> ELEV. <u>3646</u>	DRG. ZERO: <u>CABLE TOOL FLOOR</u> ELEV. <u>3646</u>	PERM. DATUM: <u>C. T. F. IS 1.5' ABOVE G. L.</u> ELEV. <u>    </u>
TYPE OF LOG	GAMMA RAY	N/NEUTRON	
RUN NO.	ONE-WAY	ONE-WAY	
DATE	<u>2-19-58</u>	<u>2-19-58</u>	
TOTAL DEPTH (DRILLER) S. L.	<u>4010</u>	<u>4010</u>	
EFFECTIVE DEPTH (DRILLER)	<u>4010</u>	<u>4010</u>	
TOP OF LOGGED INTERVAL	<u>2100</u>	<u>2100</u>	
BOTTOM OF LOGGED INTERVAL	<u>3223</u>	<u>4005</u>	
TYPE OF FLUID IN HOLE	<u>WATER</u>	<u>WATER</u>	
FLUID LEVEL		<u>3707</u>	
MAXIMUM RECORDED TEMP.		<u>510.3</u>	
SOURCE STRENGTH & TYPE		<u>11.2</u>	
SOURCE SPACING - IN.			
DETECTOR CLASS.	<u>SCINT.</u>	<u>SCINT.</u>	
DETECTOR TYPE	<u>TRM</u>	<u>TRM</u>	
LENGTH OF MEAS. DEVICE - IN.	<u>1</u>	<u>1</u>	
O.D. OF INSTRUMENT - IN.	<u>3 5/8</u>	<u>3 5/8</u>	
TIME CONSTANT - SECONDS	<u>2.0</u>	<u>2.0</u>	
LOGGING SPEED FT./MIN.	<u>30</u>	<u>30</u>	
STATISTICAL VARIATION - IN.	<u>RECORDED</u>	<u>RECORDED</u>	
SENSITIVITY REFERENCE	<u>276 JED</u>	<u>D368</u>	
RECORDED BY	<u>CRNEVIC</u>	<u>CRNEVIC</u>	
WITNESSED BY	<u>WESTALL</u>	<u>WESTALL</u>	
WELL RECORD			
RUN	BITSIZE	CASING WT.-LB.	FROM WELL RECORD FROM LOG
ONE	<u>8 5/8</u>		SURFACE TO 920 SURFACE TO 920
ONE	<u>7</u>	<u>20</u>	SURFACE TO 3268 SURFACE TO 3222
ONE	<u>6</u>		3268 TO 4000 3259 TO 4005
			TO TO
			TO TO
REMARKS OR OTHER DATA			
Reproduced By <b>West Texas Electrical Log Service</b> Dallas 2, Texas			
REFERENCE <b>A7524A</b>			
7 <b>COMPLETION RECORD</b>			
SPUD DATE			
COMP DATE			
DST RECORD			

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 3  
 Formerly Hinkle "A" No. 13  
 Sec. 34, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5

Completion Log

COMPANY: KEENE & SAUNDERS WELL: HINKLE 13 "A" FIELD: SHUGART LOCATION: SEC. 34, T-18-S, R-31-E COUNTY: EDDY STATE: NEW MEXICO	COMPANY: <u>KEENE &amp; SAUNDERS</u> WELL: <u>HINKLE 13 "A"</u> FIELD: <u>SHUGART</u> LOCATION: <u>NE OF NE OF SEC. 34, T-18-S, R-31-E</u> COUNTY: <u>EDDY</u> STATE: <u>N. MEX.</u> LOG ZERO: <u>CABLE TOOL FLOOR</u> ELEV.: DRLG. ZERO: <u>CABLE TOOL FLOOR</u> ELEV.: PERM. DATUM: <u>C. T. F. IS 1.5' ABOVE G. L.</u> ELEV.:	Well Location           364																																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>TYPE OF LOG</td> <td>GAMMA RAY</td> <td>N/NEUTRON</td> </tr> <tr> <td>RUN NO.</td> <td>ONE-NR</td> <td>ONE-NR</td> </tr> <tr> <td>DATE</td> <td>11-1-58</td> <td>11-1-58</td> </tr> <tr> <td>TOTAL DEPTH (DRILLER) STRAIN</td> <td>4117</td> <td>4117</td> </tr> <tr> <td>EFFECTIVE DEPTH (DRILLER)</td> <td>4037</td> <td>4037</td> </tr> <tr> <td>TOP OF LOGGED INTERVAL</td> <td>2100</td> <td>2100</td> </tr> <tr> <td>BOTTOM OF LOGGED INTERVAL</td> <td>4020</td> <td>4022</td> </tr> <tr> <td>TYPE OF FLUID IN HOLE</td> <td>DRY CHECK</td> <td>SURETY</td> </tr> <tr> <td>FLUID LEVEL</td> <td></td> <td>1019</td> </tr> <tr> <td>MAXIMUM RECORDED TEMP.</td> <td></td> <td>51.0</td> </tr> <tr> <td>SOURCE STRENGTH &amp; TYPE</td> <td></td> <td>13.5</td> </tr> <tr> <td>SOURCE SPACING - IN.</td> <td></td> <td>SC174</td> </tr> <tr> <td>DETECTOR CLASS</td> <td>DLG1</td> <td>DLG1</td> </tr> <tr> <td>DETECTOR TYPE</td> <td>L</td> <td>L</td> </tr> <tr> <td>LENGTH OF MEAS. DEVICE - IN.</td> <td>3 5/8</td> <td>3 5/8</td> </tr> <tr> <td>O.D. OF INSTRUMENT - IN.</td> <td>2.0</td> <td>2.0</td> </tr> <tr> <td>TIME CONSTANT - SECONDS</td> <td>30</td> <td>30</td> </tr> <tr> <td>LOGGING SPEED FT./MIN.</td> <td>RECORDED</td> <td>RECORDED</td> </tr> <tr> <td>STATISTICAL VARIATION - IN.</td> <td>27.1 JED</td> <td>17.5</td> </tr> <tr> <td>SENSITIVITY REFERENCE</td> <td>COPELAND</td> <td>COPELAND</td> </tr> <tr> <td>RECORDED BY</td> <td>WESTALL</td> <td>WESTALL</td> </tr> <tr> <td>WITNESSED BY</td> <td></td> <td></td> </tr> </table>			TYPE OF LOG	GAMMA RAY	N/NEUTRON	RUN NO.	ONE-NR	ONE-NR	DATE	11-1-58	11-1-58	TOTAL DEPTH (DRILLER) STRAIN	4117	4117	EFFECTIVE DEPTH (DRILLER)	4037	4037	TOP OF LOGGED INTERVAL	2100	2100	BOTTOM OF LOGGED INTERVAL	4020	4022	TYPE OF FLUID IN HOLE	DRY CHECK	SURETY	FLUID LEVEL		1019	MAXIMUM RECORDED TEMP.		51.0	SOURCE STRENGTH & TYPE		13.5	SOURCE SPACING - IN.		SC174	DETECTOR CLASS	DLG1	DLG1	DETECTOR TYPE	L	L	LENGTH OF MEAS. DEVICE - IN.	3 5/8	3 5/8	O.D. OF INSTRUMENT - IN.	2.0	2.0	TIME CONSTANT - SECONDS	30	30	LOGGING SPEED FT./MIN.	RECORDED	RECORDED	STATISTICAL VARIATION - IN.	27.1 JED	17.5	SENSITIVITY REFERENCE	COPELAND	COPELAND	RECORDED BY	WESTALL	WESTALL	WITNESSED BY		
TYPE OF LOG	GAMMA RAY	N/NEUTRON																																																																		
RUN NO.	ONE-NR	ONE-NR																																																																		
DATE	11-1-58	11-1-58																																																																		
TOTAL DEPTH (DRILLER) STRAIN	4117	4117																																																																		
EFFECTIVE DEPTH (DRILLER)	4037	4037																																																																		
TOP OF LOGGED INTERVAL	2100	2100																																																																		
BOTTOM OF LOGGED INTERVAL	4020	4022																																																																		
TYPE OF FLUID IN HOLE	DRY CHECK	SURETY																																																																		
FLUID LEVEL		1019																																																																		
MAXIMUM RECORDED TEMP.		51.0																																																																		
SOURCE STRENGTH & TYPE		13.5																																																																		
SOURCE SPACING - IN.		SC174																																																																		
DETECTOR CLASS	DLG1	DLG1																																																																		
DETECTOR TYPE	L	L																																																																		
LENGTH OF MEAS. DEVICE - IN.	3 5/8	3 5/8																																																																		
O.D. OF INSTRUMENT - IN.	2.0	2.0																																																																		
TIME CONSTANT - SECONDS	30	30																																																																		
LOGGING SPEED FT./MIN.	RECORDED	RECORDED																																																																		
STATISTICAL VARIATION - IN.	27.1 JED	17.5																																																																		
SENSITIVITY REFERENCE	COPELAND	COPELAND																																																																		
RECORDED BY	WESTALL	WESTALL																																																																		
WITNESSED BY																																																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6">WELL RECORD</th> </tr> <tr> <th>RUN</th> <th>BIT SIZE</th> <th>CASING</th> <th>WT. - LB.</th> <th>FROM WELL RECORD</th> <th>FROM LOG</th> </tr> <tr> <td>ONE</td> <td>10</td> <td>8 5/8</td> <td></td> <td>SURFACE TO 900</td> <td>SURFACE TO</td> </tr> <tr> <td>ONE</td> <td>8</td> <td>7</td> <td>20</td> <td>SURFACE TO 4117</td> <td>SURFACE TO 4022</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TO</td> <td>TO</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TO</td> <td>TO</td> </tr> </table>			WELL RECORD						RUN	BIT SIZE	CASING	WT. - LB.	FROM WELL RECORD	FROM LOG	ONE	10	8 5/8		SURFACE TO 900	SURFACE TO	ONE	8	7	20	SURFACE TO 4117	SURFACE TO 4022					TO	TO					TO	TO																														
WELL RECORD																																																																				
RUN	BIT SIZE	CASING	WT. - LB.	FROM WELL RECORD	FROM LOG																																																															
ONE	10	8 5/8		SURFACE TO 900	SURFACE TO																																																															
ONE	8	7	20	SURFACE TO 4117	SURFACE TO 4022																																																															
				TO	TO																																																															
				TO	TO																																																															
REMARKS OR OTHER DATA * ELEVATION UNAVAILABLE.																																																																				
Reproduced By <b>West Texas Electrical Log Service</b> Dallas 2, Texas  REFERENCE <u>A8268B</u>  6 COMPLETION RECORD.																																																																				
SPUD DATE																																																																				
COMP DATE																																																																				
DST RECORD																																																																				

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 6  
 Formerly Hinkle "A" No. 12  
 Sec. 35, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5

LANE  WELLS COMPANY		Radioactivity Log																															
COMPANY RECORD & SURVEYS WELLS 12-18-A ALTIPLANO SEC. 35, T-18-S, R-31-E COUNTY STATE REF. RECORD	COMPANY. <del>ATLANTIC RICHFIELD COMPANY</del> WELL. HINKLE 12-18-A FIELD. SHUGART LOCATION. SEC. 35, T-18-S, R-31-E COUNTY. EDDY STATE N. MEX. LOG ZERO. CABLE TOOL FLOOR ELEV. * DEPT. ZERO. CABLE TOOL FLOOR ELEV. * PERM. DATUM. C. T. F. IS 2' ABOVE O. L. ELEV. *	Well Location 990 FNL 2310 FWS 3605																															
TYPE OF LOG RUN NO. DATE TOTAL DEPTH (DRILLER) W. L. EFFECTIVE DEPTH (DRILLER) TOP OF LOGGED INTERVAL BOTTOM OF LOGGED INTERVAL TYPE OF FLUID IN HOLE FLUID LEVEL MAXIMUM RECORDED TEMP. SOURCE STRENGTH & TYPE SOURCE SPACING - IN. LENGTH OF MEAS. DEVICE - IN. O.D. OF INSTRUMENT - IN. TIME CONSTANT - SECONDS LOGGING SPEED FT./MIN. STATISTICAL VARIATION - IN. SENSITIVITY REFERENCE DETECTOR CLASS DETECTOR TYPE RECORDED BY WITNESSED BY	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">                             GAUSS HAY                              085-8W                              12-12-58                              4295                              4094                              2100                              4091                              DRY                                4                              3 5/8                              2.0                              30                              RECORDED                              0933                              SCINT.                              HAY                              CRNEKOVIC                              WESTALL &amp;                         </td> <td style="width: 50%;">                             W/NEUTRON                              085-8W                              12-12-58                              4294                              4094                              2100                              4093                              DRY                                SLOD3                              12.5                              4                              3 5/8                              2.0                              30                              RECORDED                              D368                              SCINT.                              DEAL                              CRNEKOVIC                              WELCH                         </td> </tr> </table>	GAUSS HAY 085-8W 12-12-58 4295 4094 2100 4091 DRY  4 3 5/8 2.0 30 RECORDED 0933 SCINT. HAY CRNEKOVIC WESTALL &	W/NEUTRON 085-8W 12-12-58 4294 4094 2100 4093 DRY  SLOD3 12.5 4 3 5/8 2.0 30 RECORDED D368 SCINT. DEAL CRNEKOVIC WELCH																														
GAUSS HAY 085-8W 12-12-58 4295 4094 2100 4091 DRY  4 3 5/8 2.0 30 RECORDED 0933 SCINT. HAY CRNEKOVIC WESTALL &	W/NEUTRON 085-8W 12-12-58 4294 4094 2100 4093 DRY  SLOD3 12.5 4 3 5/8 2.0 30 RECORDED D368 SCINT. DEAL CRNEKOVIC WELCH																																
WELL RECORD																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">RUN</th> <th style="width: 10%;">BIT SIZE</th> <th style="width: 10%;">CASING</th> <th style="width: 10%;">WT.-LB.</th> <th style="width: 10%;">FROM WELL RECORD</th> <th style="width: 10%;">FROM LOG</th> </tr> <tr> <td>ONE</td> <td>10</td> <td>8 5/8</td> <td></td> <td>SURFACE TO 910</td> <td>SURFACE TO</td> </tr> <tr> <td>TWO</td> <td>8</td> <td>7</td> <td>20</td> <td>SURFACE TO 1115</td> <td>SURFACE TO 4094</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TO</td> <td>TO</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TO</td> <td>TO</td> </tr> </table>	RUN	BIT SIZE	CASING	WT.-LB.	FROM WELL RECORD	FROM LOG	ONE	10	8 5/8		SURFACE TO 910	SURFACE TO	TWO	8	7	20	SURFACE TO 1115	SURFACE TO 4094					TO	TO					TO	TO			
RUN	BIT SIZE	CASING	WT.-LB.	FROM WELL RECORD	FROM LOG																												
ONE	10	8 5/8		SURFACE TO 910	SURFACE TO																												
TWO	8	7	20	SURFACE TO 1115	SURFACE TO 4094																												
				TO	TO																												
				TO	TO																												
REMARKS OR OTHER DATA * ELEVATION UNAVAILABLE.																																	

Reproduced By  
**West Texas Electrical Log Service**

Dallas 2, Texas

REFERENCE A8397E

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 15  
 Formerly Hinkle "B" No. 5  
 Sec. 34, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5

<b>LANE WELLS COMPANY</b>		<i>Radioactivity Log</i>	
COMPANY WELL FIELD LOCATION COUNTY STATE	EXHIBIT # 5-B SHUGART SEC. 34, T-18-S EDY, NEW MEXICO NEW MEXICO	COMPANY: <b>ATLANTIC RICHFIELD COMPANY</b> WELL: <b>HINKLE # 5-B</b> FIELD: <b>SHUGART</b> LOCATION: <b>SEC. 34, T-18-S R-31-E</b> COUNTY: <b>EDDY</b> STATE: <b>N.MEX.</b>	Well Location
LOG ZERO C & F DRG. ZERO C & F PERM. DATUM C & F IS 3' ABOVE GL.		ELEV. N.A. ELEV. N.A. ELEV. N.A.	
TYPE OF LOG RUN NO. DATE TOTAL DEPTH - DRILLER EFFECTIVE DEPTH - DRILLER TOP OF LOGGED INTERVAL BOTTOM OF LOGGED INTERVAL TYPE OF FLUID IN HOLE FLUID LEVEL MAXIMUM RECORDED TEMP SOURCE STRENGTH & TYPE SOURCE SPACING - IN LENGTH OF MEAS. DEVICE - IN O.D. OF INSTRUMENT - IN TIME CONSTANT - SECONDS LOGGING SPEED FT./MIN. STATISTICAL VARIATION - IN. SENSITIVITY REFERENCE DETECTOR TYPE DETECTOR GLASS RECORDED BY WITNESSED BY	GAMMA RAY ONE 5-29-59 4494 4494 2500 4480 OIL 2190 - 4.0 3 5/8 1.5 30 RECORDED C-933 D4G1 REED WESTALL	HYDROTRON ONE 5-29-59 4494 4494 2500 4492 OIL 2190 - SIOA3 13.5 4.0 3 5/8 1.5 30 RECORDED D368 D6M1 SCINT. REED WESTALL	
WELL RECORD			
RUN ONE ONE ONE	BIT SIZE 10 8 5	CASING WT.-LB. 8 5/8 6" 4 1/2	FROM WELL RECORD SURF. TO 900 SURF. TO 4075 SURF. TO 4461 TO TO
		9 1/2	FROM LOG TO - SURF. TO SURF. TO 4456 TO TO

Reproduced By  
**West Texas Electrical Log Service**

Dallas 2, Texas

REFERENCE **A9185E**

7 **COMPLETION RECORD**

SPUD DATE

COMP DATE

DST RECORD

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 16  
 Formerly Hinkle "B" No. 6  
 Sec. 34, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5

FILE NO.		COMPANY <i>LANE WELLS</i>	
		<i>Acoustilog</i>	
		WELL <u>HINKLE G - B</u>	
		FIELD <u>SHUGART</u>	
		COUNTY <u>EDDY</u> STATE <u>NEW MEXICO</u>	
		LOCATION: <u>990' FWL, 1650' FSL.</u>	
		SEC <u>34</u> TWP <u>18</u> RGE <u>31</u>	
		Other Services	
		Permanent Datum <u>GROUND LEVEL</u> Elev. _____	
		Log Measured from <u>C. T. F.</u> _____ Ft. Above Permanent Datum	
		Drilling Measured from <u>C. T. F.</u> _____	
		Elevations:	
		KB _____	
		DF _____	
		GL _____	
Date	<u>9-30-59</u>	<u>9-30-59</u>	
Run No.	<u>ONE - G/R</u>	<u>ONE - A/L</u>	
Depth - Driller	<u>3873</u>	<u>3873</u>	
Depth - Logger	<u>3871</u>	<u>3871</u>	
Bottom Logged Interval	<u>3870</u>	<u>3866</u>	
Top Logged Interval	<u>100</u>	<u>2500</u>	
Casing - Driller	<u>8-5/8 890</u>	<u>8-5/8 890</u>	
Casing - Logger	<u>859</u>	<u>859</u>	
Bit Size	<u>8</u>	<u>8</u>	
Type Fluid in Hole	<u>WATER</u>	<u>WATER</u>	
Density and Viscosity			
pH and Fluid Loss			
Source of Sample			
Rm @ Meas. Temp			
Rmf @ Meas. Temp			
Rmc @ Meas. Temp			
Source of Rmf and Rmc			
Rm @ BHT			
Time Since Circ			
Max Rec. Temp. Deg. F.			
Equip. No. and Location	<u>4553 ODESSA</u>		
Recorded By	<u>WALLACE</u>		
Witnessed By	<u>MR. WESTALL</u>		

Reproduced By  
**West Texas Electrical Log Service**

Dallas 2, Texas

REFERENCE **W9342D**

9 **COMPLETION RECORD**

SPUD DATE

COMP DATE



ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 19  
 Formerly Hinkle "A" No. 3  
 Sec. 34, T-18-S, R-31-E, Eddy Co., N.M.

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

LANE WELLS		<i>Gamma Ray</i>		<i>Analysis</i>			
WELL NO.	0313137C						
COMPANY	KEOHANE & PARTNERS						
WELL	HINKLE 3-A						
FIELD	SHUGART						
COUNTY	EDDY		STATE NEW MEXICO				
LOCATION					Other Services		
SEC	34	TWP	18-S	R-31-E	11-E		
Permanent Datum	GROUND LEVEL		Sea		KB		
Log Measured from	GROUND LEVEL		Ft. Above Permanent Datum		DF		
Drilling Measured from	GROUND LEVEL				SI		
Date	11/24/51	Log No.	101784				
Log No.	101784	Log	101784				
Type Log	GAMMA RAY	Log	NEUTRON				
Depth-Down	3470	Depth-Down	3470				
Depth-Upper	3470	Depth-Upper	3407				
Bottom Logged Interval	3304	Bottom Logged Interval	3405				
Top Logged Interval	2500	Top Logged Interval	2500				
Type Fluid in Hole	OIL & WATER		OIL & WATER				
Sealant Type Cl.							
Density Lb./Gal.							
Level							
Max. Rec. Temp. Deg. F							
Log. Run Time	1 1/2 HOURS		1 1/2 HOURS				
Recorded By	COPELAND		COPELAND				
Witnessed By	MR. WESTALL		MR. WESTALL				
Core Record							
No.	BY	From	To	Run	Wet	From	To
1				4 1/2"	9 1/2"	SURFACE	3407

3328  
16505

Reproduced By  
 West Texas Electrical Log Service  
 Dallas 2, Texas



REFERENCE A 278:

COMPLETION RECORD

SPUD DATE

COMP DATE

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 23  
 Formerly Hinkle "B" No. 7  
 Sec. 35, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5



COMPANY ~~Atlantic Richfield~~ *Open to*  
 WELL HINKLE NO 7-B *X*  
 FIELD SHUGART  
 COUNTY EDDY STATE NEW MEXICO  
 LOCATION  
 SEC 35 TWP 18-S RGE 31-E

Permanent Datum GROUND LEVEL ..... Elev. .....  
 Measured from C, T, P, ..... Fr Above Permanent Datum .....  
 Log Measured from C, T, P, .....  
 Elevations KB ..... DF ..... Cl. ....

No.	6-22-60	6-22-60
Log	WELLS RAY	NEUTRON
Driller	4104	4104
Logger	4094	4094
Open Logged Interval	3025	3025
Logged Interval	2500	2500
Fluid in Hole	OIL	OIL
Swab Ppm Cl		
Swab Lb. Gal.		
Vel		
Rec Temp Deg. F		
Rig Time		
Recorded By	COPELAND	COPELAND
Checked By	WESTALL & MORFITT	

Bore Hole Record			Casing Record			
Bit	From	To	Size	Wgt	From	To
10	SURFACE	850	6 5/8"	20	SURFACE	850
8	850	3510	7"	20	SURFACE	3510
6 1/4	3510	4104	4 1/2"	9 1/2"	SURFACE	3095

Reproduced By  
*West Texas Electrical Log Service*  
 Dallas 2, Texas

REFERENCE A9986D

7 COMPLETION RECORD


PUD DATE \_\_\_\_\_

OMP DATE \_\_\_\_\_

ST RECORD \_\_\_\_\_

ATLANTIC RICHFIELD COMPANY  
 EAST SHUGART UNIT  
 LOG OF  
 EAST SHUGART UNIT WELL NO. 29  
 Formerly Hinkle "B" No. 1  
 Sec. 34, T-18-S, R-31-E, Eddy Co., N.M.

EXHIBIT NO. 5



**LANE WELLS**

*Radioactivity  
Log*

---

COMPANY: Atlantic Richfield Co.

WELL: Hinkle No. 1-B

FIELD: SHUGART

LOCATION: SE. OF SW. 1/4 SEC. 34, T-18-S, R-31-E

COUNTY: EDDY STATE: N.M.

LOG ZERO: CABLE TOOL FLUOR ELEV. 5

DRUG ZERO: CABLE TOOL FLUOR ELEV. 5

PERM. DATUM: Sea Level ELEV. 5

Well Location

---

TYPE OF LOG	DATE	TIME	BY
TYPE OF LOG	DATE	TIME	BY
RUN NO.	DATE	TIME	BY
TOTAL DEPTH (DRILLER)	DATE	TIME	BY
EFFECTIVE DEPTH (DRILLER)	DATE	TIME	BY
TOP OF LOGGED INTERVAL	DATE	TIME	BY
BOTTOM OF LOGGED INTERVAL	DATE	TIME	BY
TYPE OF FLUID IN HOLE	DATE	TIME	BY
FLUID LEVEL	DATE	TIME	BY
MAXIMUM RECORDED TEMP	DATE	TIME	BY
SOURCE STRENGTH & TYPE	DATE	TIME	BY
SOURCE SPACING - IN.	DATE	TIME	BY
DETECTOR CLASS	DATE	TIME	BY
DETECTOR TYPE	DATE	TIME	BY
LENGTH OF MEAS. DEVICES - IN.	DATE	TIME	BY
O.D. OF INSTRUMENT - IN.	DATE	TIME	BY
TIME CONSTANT - SECONDS	DATE	TIME	BY
LOGGING SPEED FT./MIN.	DATE	TIME	BY
STATISTICAL VARIATION - IN.	DATE	TIME	BY
SENSITIVITY REFERENCE	DATE	TIME	BY
RECORDED BY	DATE	TIME	BY
WITNESSED BY	DATE	TIME	BY

---

WELL RECORD				FROM WELL RECORD		FROM LOG	
RUN	BIT SIZE	CASING WT.-LB.	FROM	TO	RUN	BIT SIZE	CASING WT.-LB.
ONE	6	7	2.5	SURFACE TO 2250	ONE	6	7
TWO	4 1/2	2.2	2.2	SURFACE TO 3600	TWO	4 1/2	2.2
				TO			
				TO			
				TO			

Reproduced By  
**West Texas Electrical Log Service**

Dallas 2, Texas

REFERENCE **A9027D**

6 **COMPLETION RECORD**

SPUD DATE \_\_\_\_\_

COMP DATE \_\_\_\_\_

DST RECORD \_\_\_\_\_

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

AUG 15 1967

Atlantic-Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. W. P. Tomlinson

Gentlemen:

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 2  
CASE NO. 4137 & 4138

Your application of June 20, filed with the Oil and Gas Supervisor, Roswell, New Mexico, requests the designation of the East Shugart unit embracing 1359.40 acres, more or less, Eddy County, New Mexico, as logically subject to operations under the unitization provisions of the Mineral Leasing Act as amended. The proposed unit area is comprised of 1319.40 acres (97.06 percent) of Federal land and 40 acres (2.94 percent) of State of New Mexico land.

Unitization is for the purpose of conducting secondary recovery operations by water flooding and will be limited to the Yates, Seven Rivers, Queen, and Grayburg formations, as defined in Section 2(b) of the unit agreement. The area has been developed by 35 wells completed in the formations to be unitized. Participation in unitized substances is based 50 percent on producing rate and 50 percent on remaining primary reserves for Phase I, and 95 percent on ultimate primary reserves and 5 percent on surface acres for Phase II. You estimate that the proposed water flood project will result in the recovery of 2,870,000 barrels of oil over and above that recoverable by primary methods.

The land outlined on your plat marked "Exhibit A, East Shugart Unit, Eddy County, New Mexico" is acceptable as a logical unit area for secondary recovery operations. Your proposed form of unit agreement which modifies the standard Federal form (1961 reprint) to the extent necessary to cover conditions incidental to secondary recovery operations in a producing unit, will be acceptable if further modified as marked in colored pencil and/or by attached riders. One copy of the marked form is returned herewith and the remaining copies are retained for distribution to appropriate offices of the Geological Survey.

In the absence of any type of land requiring special provisions or any objections not now apparent, a duly executed agreement conformed to the marked copy and approved by the appropriate officials of the State of New Mexico will be approved if submitted in approvable status within a reasonable period of time. However, the right is reserved to deny approval of any executed agreement that, in our opinion, does not have the full commitment of sufficient lands to afford effective control of secondary recovery operations.

Please include the latest status of all lands in the executed agreement when it is submitted for final approval. The format of the sample exhibits attached to the 1961 reprint of the standard form should be followed closely in preparation of Exhibits A and B.

Inasmuch as the proposed unit area contains State of New Mexico lands, please contact the Commissioner of Public Lands, Santa Fe, New Mexico, before soliciting joinders regardless of prior contacts with, or clearance from the State.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Arthur A. Bohner".

Acting Director

**BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION**

ON EXHIBIT NO. 7  
CASE NO. 4137 & 4138

INITIAL PLAN OF DEVELOPMENT  
EAST SHUGART UNIT

The East Shugart Unit consists of some 1,359.40 acres in Eddy County, New Mexico. (See attached Unit plat.) The area is contained in portions of Sections 27, 34, 35, 36, Township 18 South, Range 31 East and Section 3, Township 19 South, Range 31 East. In the Unit Area Texaco chose not to participate with their two tracts consisting of 120 acres. Therefore, the remaining 1,239.40 acres is to be developed for waterflooding.

The zones to be flooded are the Yates, Seven Rivers and Queen. Attached is a cross-section (Fig. 2) showing the relative position of the zones. The Yates is found at about 2700', the Seven Rivers at about 3300' (shown as Upper Queen "1" on cross-section) and the Queen at about 3400'. The bottom interval in the Queen to be flooded is found at about 3900'. In all, some nine separate zones are to be flooded in the three formations.

The trap in this area of the Shugart Pool is primarily stratigraphic in nature in all three formations with the productive limits being determined by sand pinchouts. The only exception being that the southern limits of production for the two lower Yates zones in this area are controlled by the presence of an aquifer. The producing mechanism for all zones has been solution gas drive with no appreciable water production occurring during the primary phase.

There are now within the participating unit boundary, 26 active producing wells, one shut-in well and four injectors. The wells are presently producing some 164 BOPD for an average of 63 BOPD per producing well. The cumulative production for the participating area is some 2,330,000 barrels with estimated remaining primary reserves of 490,000 barrels.

The existing four injectors were converted in May, 1966 and with unitization it is planned to have a total of 11 injectors. The wells will form essentially two large perimeter type patterns as shown in Figure No. 1. Those patterns include the drilling of one additional well to be located 100' FSL and 990' FWL in Section 35 to be used as an injector. It is planned to inject separately into the Yates and inject together into the Seven Rivers Queen. In the wells that have 7" casing we plan to run two strings of 2-3/8" O.D. tubing with dual packers (Fig. 3) to separate the two intervals. In the wells with smaller casing we plan to inject down the annulus into the Yates and down tubing into the Seven Rivers Queen with a packer set between the Yates and Seven Rivers Queen zones (Fig. 4). Listed below are the 11 wells that will be injectors.

<u>Well</u>	<u>Location</u>
East Shugart Unit Well No. 1	SE/4 SE/4 Section 27
East Shugart Unit Well No. 3	NE/4 NE/4 Section 34
East Shugart Unit Well No. 6	NE/4 NW/4 Section 35
East Shugart Unit Well No. 15	SW/4 NW/4 Section 34

<u>Well</u>	<u>Location</u>
East Shugart Unit Well No. 16	NW/4 SW/4 Section 34
East Shugart Unit Well No. 19	NE/4 SE/4 Section 34
East Shugart Unit Well No. 22	NW/4 SE/4 Section 35
East Shugart Unit Well No. 23	SW/4 SE/4 Section 35
East Shugart Unit Well No. 28	SW/4 SE/4 Section 34
East Shugart Unit Well No. 29	SE/4 SW/4 Section 34
East Shugart Unit Well No. 32	SW/4 SW/4 Section 35

Approximately 7000 BWPD will be injected in the 11 injection wells. The supply water will be purchased from Double Eagle Corporation and facilities for produced water gathering and re-injection will be constructed. The water will be treated to assure a minimum amount of corrosion and frequent checks will be made to insure that control is maintained. It is estimated that an additional 2.8 MMBO will be recovered due to waterflooding and the project will have a 13 year life.

Atlantic Richfield Company, as operator of the East Shugart Unit, will act prudently to preserve all rights of the mineral owners and to effectively and efficiently recover the reserves in the Unit Area. The company will meet all economical offset obligations and act as to prevent undue waste.

CC 81818  
Case 4137

EAST SHUGART UNIT AGREEMENT

EDDY COUNTY, NEW MEXICO

THIS AGREEMENT entered into as of the 1st day of January, 1969, by and between the parties subscribing, ratifying or consenting hereto, and herein referred to as "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. Sec. 181 et seq, authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with others in collectively adopting and operating a co-operative 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. 7-11-39 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 interests of the State of New Mexico; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Sec. 7-11-41 N.M. Statutes 1953 Annotated) to amend, with the approval of the lessee, any oil and gas lease embracing State lands so that the length of the term of said lease may coincide with the terms of such unitized development and operation of State lands, and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by an Act of the Legislature (Article 3, Chapter 65, Vol. 9, Part 2, 1953 Statutes) to approve this agreement and the conservation provisions hereof, and

WHEREAS, the parties hereto hold sufficient interests in the East Shugart Unit Area covering the land hereinafter described to give reasonably



effective control of operations therein, and

WHEREAS, it is the purpose of the parties hereto to 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 State of New Mexico and privately owned 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 of New Mexico are hereby accepted and made a part of this agreement.

2. DEFINITIONS. For the purpose of this agreement, the following terms and expressions as used herein shall mean:

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

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

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

(d) "Secretary" is defined as the Secretary of the Interior of the United States of America.

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

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

(g) "Unitized Formation" shall mean that subsurface portion of the unit area commonly known as the Yates, Seven Rivers, Queen, and Grayburg formations the top of which is found at 2312 feet on the Lane Wells radioactivity log dated July 1, 1957 for the Atlantic Richfield Hinkle "A" No. 6 well located 2310' FNL and 330' FEL Section 34, T-18-S, R-31-E, and the bottom of which is a point 2,000 feet below the point at 2,312 feet on the said log, such measurement being made from the derrick floor.

(h) "Unitized Substances" is defined as and shall mean all oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquids or liquefiable hydrocarbons within or produced from the Unitized Formation.

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

(j) "Working Interest Owner" is defined as and shall mean any party hereto owning a Working Interest, including a carried working interest owner, holding an interest in Unitized Substances by virtue of a lease, operating agreement, fee title or otherwise, which interest is chargeable with and obligated to pay or bear, either in cash or out of production, or otherwise, all or a portion of the cost of drilling, developing, operating and producing the Unitized Substances from the Unitized Formation.

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

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

(m) "Unit Operating Agreement" is defined as and shall mean any agreement or agreements (whether one or more) entered into (separately or collectively) by and between the Unit Operator and the Working Interest Owners as provided in Section 8, infra, and shall be styled "Unit Operating Agreement, East Shugart Unit, Eddy County, New Mexico."

(n) "Paying Quantities" is defined as production of Unitized Substances in quantities sufficient to pay for the cost of producing same from wells on the unitized land.

(o) "Phase I" is defined as that period of time that Unitized Substances are produced from the unit area from and after the effective date of this agreement until 7:00 a.m. the first day of the calendar month ensuing after 667,317 barrels of oil minus the gross oil production from May 1, 1966 to the effective date of this agreement have been produced from the Unitized Formation. For the purposes of this definition the Operator's Monthly Report, Form C-115, filed with the New Mexico Oil Conservation Commission shall be deemed the controlling evidence of the production of 667,317 barrels of oil after May 1, 1966. Phase I is predicted upon 100% commitment of the unit area and shall be subject to corrections to coincide with Phase I of the unitized portion of the reservoir in the event of the non-commitment of any tract.

(p) "Phase II" is defined as the remainder of the term of this agreement after the expiration of Phase I.

(q) "Unit Operator" means the Working Interest Owner designated by Working Interest Owners under the Unit Operating Agreement to develop and operate the Unitized Formation, acting as operator and not as a Working Interest Owner.

(r) "Tract" means each parcel of land described as such and given a Tract number in Exhibit "A".

(s) "Tract Surface Acres" is defined as the number of surface acres of such tract within the Unit Area.

(t) "Unit Area Surface Acres" is defined as the total of the Tract Surface Acres of all tracts within the Unit Area that are committed to this agreement.

(u) "Tract Current Oil Rate" is defined as the total number of barrels of oil produced from the Unitized Formation under such tract during the period from January 1, 1966 to April 30, 1966, inclusively, as reported to the Commission.

(v) "Unit Area Current Oil Rate" is defined as the total of the Tract Current Oil Rate of all tracts within the Unit Area that are committed to this agreement.

(w) "Tract Future Primary Oil Reserves" is defined as the estimated number of barrels of primary oil to be produced from the Unitized Formation from such tract beginning May 1, 1966.

(x) "Unit Area Future Primary Oil Reserves" is defined as the total of the Tract Future Primary Oil Reserves of all tracts within the Unit Area that are committed to this agreement.

(y) "Tract Ultimate Primary Oil Recovery" is defined as the ultimate number of barrels of oil recovered or estimated to be recovered from the Unitized Formation from such tract.

(z) "Unit Area Ultimate Primary Oil Recovery" is defined as the total of the Tract Ultimate Primary Oil Recovery of all tracts within the Unit Area that are committed to this agreement.

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

New Mexico Principal Meridian, New Mexico  
Eddy County, New Mexico

Township 18 South, Range 31 East

Section 27:	SE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00 Acres
Section 34:	E $\frac{1}{2}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$	480.00 Acres
Section 35:	W $\frac{1}{2}$ , NE $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$	560.00 Acres
Section 36:	SW $\frac{1}{4}$ NW $\frac{1}{4}$	40.00 Acres

Township 19 South, Range 31 East

Section 3:	Lot 2, Lot 3, SW $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$	239.40 Acres
------------	---	--------------

Containing 1,359.40 acres, more or less.

Exhibit "A" attached hereto is a map showing, to the extent known to the Unit Operator, the unit area and the boundaries and identity of tracts and leases in said unit area. Exhibit "B" attached hereto is a schedule showing, to the extent known to the Unit Operator, the acreage comprising each tract, the percentage of ownership of each Working Interest Owner in each tract, the ownership of the Royalty and Record Title interest in each tract, and the percentage of participation each tract has 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 render such revision necessary, and at least two copies of such revision shall be filed with the Commissioner, and not less than six copies thereof shall be filed with the Supervisor.

The above described unit area may, when practicable, be expanded to include therein any additional tract or tracts regarded as reasonably necessary or advisable for the purposes of this agreement to conform with the purposes of this agreement. Such expansion shall be effected in the following manner:

(a) The Working Interest Owner or Owners of a tract or tracts desiring to bring such tract or tracts into this unit, shall file an application therefor with Unit Operator requesting such admission.

(b) Unit Operator shall circulate a notice to each Working Interest Owner of the proposed expansion, setting out the basis for admission, the unit participation to be assigned to such tract or tracts, and other pertinent data. After negotiation (at Working Interest Owners' meeting or otherwise), if 85 per cent of the Working Interest Owners (on the basis of unit participation for Phase II) have agreed to such tract or tracts being brought into the unit, then Unit Operator shall after preliminary concurrence by the Commissioner and the Director:

(1) Prepare a notice of proposed expansion describing the contemplated changes in the boundaries of the unit area, the reason therefor, the basis for admission of the additional tract or tracts, the unit participation to be assigned thereto and the proposed effective date thereof, preferably the first day of a month subsequent to the date of notice, and

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

(3) File for approval, upon the expiration of said thirty (30) day period as set out in (2) immediately above, with the Commissioner and the Director the following: (a) comprehensive statement as to mailing such notice of expansion; (b) sufficient copies of an application for such expansion; and (c) sufficient copies of an instrument containing the appropriate joinders in compliance with the participation requirements of Section 12, infra.

The expansion shall, after due consideration of all pertinent information and upon approval by the Commissioner and the Director, become effective as of the date prescribed in the notice thereof or on such other date as set by the Commissioner and the Director in the order or instrument approving such expansion. The revised Tract Participation of the respective tracts included within the Unit Area prior to such enlargement shall remain in the same ratio one to another.

4. UNITIZED LAND AND UNITIZED SUBSTANCES. All lands committed to this agreement as to the formation defined under "Unitized Formation" shall

constitute land referred to herein as "Unitized Land" or "land subject to this agreement." All oil and gas in or produced from said Unitized Formation of the "Unitized Land" are unitized under the terms of this agreement and herein are called "Unitized Substances." Surface rights of ingress and egress shall be maintained for the benefit of the unit.

Nothing herein shall be construed to unitize, pool or in any way affect the oil, gas and other minerals contained in or that may be produced from any formation other than the Unitized Formation.

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

6. RESIGNATION OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of six months after notice of intention to resign has been served by Unit Operator on all Working Interest Owners, the Commissioner and the Director, and until all wells then drilled hereunder are placed in a satisfactory condition for suspension or abandonment whichever is required by the Supervisor and Commissioner, 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.

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.

In all instances of resignation, 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 thirty (30) days before such resignation becomes effective, appoint a common agent to represent them in any action to be taken hereunder.

The resignation 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 of Unit Operator becoming effective, such Unit Operator shall deliver possession of all equipment, books and records, materials, appurtenances and any other assets used in conducting the unit operations and owned by the Working Interest Owners (including any and all data and information which it might have gained or assembled by reason of its operation of the unit area) to the new duly qualified successor Unit Operator or to the owners thereof if no such new Unit Operator is elected, to be used for the purpose of conducting unit operations hereunder. Nothing herein contained shall be construed as authorizing removal of any material, equipment and appurtenances needed for the preservation of any wells.

7. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender its resignation as Unit Operator as hereinabove provided, or a change of Unit Operator is negotiated by Working Interest Owners, the owners of the working interests, voting according to their respective Phase II participating interests in all unitized land, shall by majority vote select a successor Unit Operator. Provided, that, if a majority or in excess thereof 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 Owner shall be required to select a new Unit Operator. Such selection shall not become effective until:

(a) the Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and

(b) the selection shall have been filed with the Supervisor and approved by the Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Director and Commissioner at their election may declare this unit agreement terminated.

8. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. Costs and expenses incurred by Unit Operator in conducting unit operations hereunder shall be paid, apportioned among and borne by the Working Interest Owners

in accordance with the Unit Operating Agreement. 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 the 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 the Unit Agreement and the Unit Operating Agreement this Unit Agreement shall prevail. Two true copies of any Unit Operating Agreement executed pursuant to this section shall be filed with the Commissioner and three true copies thereof shall be filed with the Supervisor prior to approval of this agreement.

9. 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 his capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

10. PLAN OF OPERATIONS. It is recognized and agreed by the parties hereto that the land subject to this agreement is reasonably proved to be productive of Unitized Substances in paying quantities and that the object and purpose of this agreement is to formulate and to put into effect a pressure maintenance and secondary recovery project in order to effect additional recovery of Unitized Substances, prevent waste and conserve natural resources.

The parties hereto agree that the Unit Operator may, subject to the consent and approval of a plan of operation by the Working Interest Owners, the Supervisor, and the Commissioner, inject into the Unitized Formation, through any well or wells completed therein, brine, water, air, gas, oil, liquefied petroleum gas, and any other substance or a combination of any of said substances, whether produced from the Unit Area or not, and that the location of input wells and the rate of injection therein and the rate of production shall be governed by standards of good geologic and petroleum engineering practices and conservation methods. After commencement of pressure maintenance and secondary recovery operations, Unit Operator shall furnish the Commissioner and the Supervisor monthly injection and production reports for each well in the unit. The Working Interest Owners, the Supervisor, and the Commissioner shall be furnished periodical reports on the progress of the plan of operation and any revisions or changes thereto; provided, however, that any major revisions of the plan of operation involving a basic deviation from the initial plan of operation shall be subject to the consent and approval of the Working Interest Owners, the Supervisor, and the Commissioner.

The initial plan of operation shall be filed with the Supervisor and the Commissioner concurrently with the filing of this Unit Agreement for final approval. Said initial plan of operation and all revisions thereof shall be as complete and adequate as the Supervisor and the Commissioner may determine to be necessary for timely operation consistent herewith. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation.

Notwithstanding anything to the contrary herein contained, the Unit Operator shall commence pressure maintenance and secondary recovery operations on the unit area within six (6) months after the effective date of this agreement, or any extension thereof approved by the Commissioner and the Director, or this agreement shall terminate automatically, in which latter event Unit Operator shall notify all interested parties. After such operations are commenced, Unit Operator shall carry on such operations as would a reasonably prudent operator under the same or similar circumstances.

11. TRACT PARTICIPATION. The last page of Exhibit "B" attached hereto shows the percentage of participation allocated to each tract in the unit



area during Phase I and during Phase II, as defined in subsection (o) and (p) specifically of Section 2 hereof. The formula as used for the calculations of such percentages of participation are as follows:

(a) Phase I participation of each tract, beginning at 7:00 a.m. on the effective date hereof and until 7:00 a.m. on the first day of the month next following the date when cumulative oil production from all of the tracts described in the original Exhibit "B" from the Unitized Formation subsequent to 7:00 a.m. May 1, 1966 equals 667,317 barrels, shall be equal to fifty per cent (50%) of the ratio of the tract current oil rate of production of Unitized Substances from each tract to the total unit area current oil rate of production of Unitized Substances from all such tracts plus fifty per cent (50%) of the ratio of the tract future primary oil reserves of each tract to the unit area future primary oil reserves of all such tracts.

(b) Phase II participation of each tract beginning at 7:00 a.m. on the first day of the month following the date when the 667,317 barrels referred to above shall have been produced, shall be equal to ninety-five per cent (95%) of the ratio of the tract ultimate Primary oil recovery from each of such tracts, to the total unit area ultimate primary oil recovery of all such tracts plus five per cent (5%) of the ratio of the tract surface acres of each tract to the total unit area surface acres of all such tracts.

(c) Within sixty (60) days after the requirements for commencement of Phase II have been met, the Operator will notify the Oil and Gas Department of the New Mexico State Land Office of such conversion to Phase II.

The percentages of participation set forth opposite each tract on the last page of Exhibit "B" were calculated on the basis of 100% tract commitment. If the Unit Agreement is approved with less than 100% tract commitment, said percentages of participation shall be revised to reflect the commitment status as of the effective date hereof, and thereafter, as needed, pursuant to Section 13 (Allocation of Unitized Substances).

12. TRACTS QUALIFIED FOR UNIT PARTICIPATION. As the objective of this unit agreement is to have lands in the unit area operated and entitled to participation under the terms hereof, it is agreed that, notwithstanding anything else herein, no joinder shall be considered a commitment to this unit agreement unless the tract involved is qualified under this section.

On and after the effective date hereof the tracts within the unit area which shall be entitled to participation (as provided in Section 11 hereof) in the production of Unitized Substances therefrom shall be those tracts within the unit area and more particularly described in said Exhibit "B" that are qualified as follows (the Record Interest shall supplant the royalty interest as to Federal land for the purposes of this section):

(a) Each and all of those tracts as to which Working Interest Owners owning 100% of the working interest in said tract and royalty owners owning

100% of the royalty interest in said tract have subscribed, ratified or consented to this agreement; and

(b) Each and all of those tracts as to which Working Interest Owners owning not less than 95% of the working interest therein and royalty owners owning not less than 75% of the royalty interest therein have executed this agreement, and in which the Working Interest Owners in said tract who have executed this agreement have agreed to indemnify and hold harmless all other parties hereto, in a manner satisfactory to 85% of the Working Interest Owners qualified under (a) against any and all claims and demands that may be made by the nonjoining Working Interest Owners or royalty owners, or both, on account of the commitment and joinder of such tract to the unit agreement, and operation thereof under such conditions on the basis herein provided, and as to which 85% of the Working Interest Owners qualified under (a) exclusive of the Working Interest Owner submitting such tract, have approved the commitment of such tract to this unit agreement.

If, on the effective date of this agreement, there is any tract or tracts which have not been committed to or made subject to this agreement by qualifying as above provided, then such tract or tracts shall not be entitled to participate hereunder. Unit Operator shall, when submitting this agreement for final approval by the Commissioner and the Director, or as soon thereafter as practical, file therewith a schedule of those tracts which have been committed and made subject to this agreement and are entitled to participate in the production from the unit area hereunder. Said schedule shall set forth opposite each such committed tract the lease number and assignment number, the owner of record of the lease, and the percentage of participation of such tract which shall be computed according to the participation formula set out in Section 11 (Tract Participation) above. This schedule of participation shall be a part of Exhibit "B" and upon approval thereof by the Commissioner and the Supervisor shall become a part of this agreement and shall govern the allocation of production of Unitized Substances until the effective date of a new schedule approved by the Commissioner and the Supervisor.

13. ALLOCATION OF UNITIZED SUBSTANCES. All Unitized Substances produced and saved (less, save and except any part of such Unitized Substances used in conformity with good operating practices on unitized land for drilling, operating, camp and other production or development purposes and for pressure maintenance or unavoidable loss) shall be apportioned among and allocated to the committed tracts within the unit area in accordance with the respective tract participation then effective hereunder during the respective periods such Unitized Substances were produced, as set forth in the schedule of participation in Exhibit "B". The amount of Unitized Substances so

allocated to each tract, and only that amount, (regardless of whether it be more or less than the amount of the actual production of Unitized Substances from the well or wells, if any, on such tract) shall, for all intents, uses and purposes be deemed to have been produced from such tract.

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

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

If the working interest and the royalty interest in any tract are divided with respect to separate parcels or portions of such tract and owned severally by different persons, the percentage participation assigned to such tract shall, in the absence of a recordable instrument executed by all owners and furnished to Unit Operator fixing the division of ownership, be divided among such parcels or portions in proportion to the number of surface acres in each.

The Unitized Substances allocated to each tract shall be delivered in kind to the respective Working Interest Owners and parties entitled thereto by virtue of the ownership of oil and gas rights therein or by purchase from such owners. Each Working Interest Owner and the parties entitled thereto shall have the continuing right to receive such production in kind at a common point within the unit area and to sell or dispose of the same as it sees fit. Each such party shall have the right to construct, maintain and operate all necessary facilities for that purpose on unitized land, provided the same are so constructed, maintained and operated as not to interfere with operations carried on pursuant hereto. Subject to Section 14 hereof, any extra expenditure incurred by Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the party receiving

the same in kind. In the event any party hereto shall fail to take or otherwise adequately dispose of its proportionate share of the production from the unit area currently as and when produced, then so long as such conditions continue, Unit Operator, for the account and at the expense of such party and in order to avoid curtailing the operation of the unit area, may sell or otherwise dispose of such production to itself or others on a day-to-day basis at not less than the prevailing market price in the area for like production, and the account of such party shall be charged therewith as having received such production. The net proceeds, if any, of the unitized substances so disposed of by Unit Operator shall be paid to the party entitled thereto.

Any party receiving in kind or separately disposing of all or any part of the Unitized Substances allocated to any tract, or receiving the proceeds therefrom if the same is sold or purchased by Unit Operator, shall be responsible for the payment of all royalty on the lease or leases and tracts contributed by it and received into the unit, and each such party shall hold each other party hereto harmless against all claims, demands and causes of action for such royalty on the lease or leases and tracts contributed by it and received into the unitized land.

If, after the effective date of this agreement there is any tract or tracts that are subsequently committed hereto as provided in Section 3 (Unit Area) hereof, or any tract or tracts within the unit area not committed hereto as of the effective date hereof but which are subsequently committed hereto under the provisions of Section 31 (Nonjoinder and Subsequent Joinder), or if any tract is excluded from the unit area as provided for in Section 28 (Loss of Title), the schedule of participation as shown in Exhibit "B", subject to Section 11 (Tract Participation) or Section 31 (Nonjoinder and Subsequent Joinder), whichever is appropriate, shall be revised by the Unit Operator and distributed to the Working Interest Owners, the Commissioner and the Supervisor to show the new percentages of participation of all the then effectively committed tracts; and the revised schedule, upon approval by the Commissioner and the Supervisor, shall govern all the allocation of production from and after the effective date thereof until the effective date of a new schedule approved by the Commissioner and the Supervisor.

Unit Operator may use as much of the Unitized Substances as it may reasonably deem necessary for the operation and development of the unit area, including but not limited to the injection of Unitized Substances into the formation.

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

If gas obtained from lands not subject to this agreement is introduced into the Unitized Formation, for use in repressuring, stimulation of production or increasing ultimate recovery in conformity with a plan approved pursuant to Section 10 (Plan of Operations), a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the Unitized Formation, Royalty free as to dry gas but not as to the products extracted therefrom; provided such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor and the Commissioner; and provided further that such right of withdrawal shall terminate as of the effective date of termination of the Unit Agreement. If liquefied petroleum gases, or any other substance, obtained from lands or formations not subject to this agreement be injected into the Unitized Formation for the purpose of increasing ultimate recovery, which shall be in conformance with a plan first approved by the Supervisor and the Commissioner, part or all of such liquefied petroleum gases, or such other substance, may be withdrawn Royalty free pursuant to such conditions and formulas as may be prescribed or

approved by the Supervisor and the Commissioner; and provided further that such right of withdrawal shall terminate as of the effective date of termination of the Unit Agreement.

All royalty due the State of New Mexico and the other royalty owners hereunder shall be computed and paid on the basis of all Unitized Substances allocated to the respective tract or tracts committed hereto, in lieu of actual production from such tract or tracts.

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 rate 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, such average production shall be determined in accordance with the operating regulations as though the unitized lands were a single consolidated lease.

Each royalty owner (other than the State of New Mexico and the United States of America) that executes this agreement represents and warrants that it is the owner of a royalty interest in a tract or tracts within the unit area as its interest appears in Exhibit "B" attached hereto. If any royalty interest in a tract or tracts should be lost by title failure or otherwise in whole or in part, during the term of this agreement, then the royalty interest of the party representing himself to be the owner thereof shall be reduced proportionately and the interest of all parties shall be adjusted accordingly.

15. RENTAL SETTLEMENT. Rentals or minimum royalties due on leases committed hereto shall be paid by Working Interest Owners responsible therefor under existing contracts, laws and regulations, provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental or minimum royalty in lieu thereof, due under their leases. Rental for lands of the State of New Mexico subject to this agreement shall be paid at the rate specified in the respective leases from the State of New Mexico. Rental or minimum royalty for lands of the United States of America subject to this agreement shall be paid at the rate specified in the respective leases from

the United States of America, unless rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary or his duly authorized representative.

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 Federal and State laws and regulations.

17. DRAINAGE. The Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from unitized land by wells on land not subject to this agreement.

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 operations 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 and the Commissioner, respectively, shall and by their approval hereof, do 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.

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 hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part or separately owned tract subject to this agreement, regardless of whether there is any development of any particular part or tract of the unit area, notwithstanding anything to the contrary in any lease, operating agreement or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.

(b) Drilling, producing or secondary recovery operations performed hereunder upon any tract of unitized lands shall be accepted and deemed to be performed upon and for the benefit of each and every tract of unitized land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on land therein embraced.

(c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Commissioner and the Supervisor or their duly authorized representatives, shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every tract of unitized land.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil and gas which by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such term so provided therein, so that it shall be continued in full force and effect for so long as such land remains committed hereto.

(e) The segregation of any Federal lease committed to this agreement is governed by the following provisions in the fourth paragraph of Section 17(j) of said Act of February 25, 1920, as amended by the Act of September 2, 1960 (74 Stat. 781-784): "Any (Federal) lease heretofore or hereafter committed to any such plan (unit) 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."

(f) Any lease embracing lands of the State of New Mexico having only a portion of its land committed hereto shall be segregated as to that portion committed and that not committed, and the term of such lease shall apply separately to such segregated portions commencing as of the effective date thereof. Provided, however, that notwithstanding any of the provisions of this agreement to the contrary, such lease 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, or has heretofore been, discovered in paying quantities on some part of the lands embraced in such lease committed to this agreement or, so long as a portion of the Unitized Substances produced from the unit area is, under the terms of this agreement, allocated to the portion of the lands covered by such lease committed to this agreement, or, at any time during the term hereof, as to any lease that is then valid and subsisting and upon which the lessee or the Unit Operator is then engaged in bona fide drilling, reworking, or secondary recovery operations on any part of the lands embraced in such lease, then the same as to all lands embraced therein shall remain in full force and effect so long as such operations are 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. MATHEMATICAL ERRORS. It is hereby agreed by all parties to this agreement that Unit Operator is empowered to correct any mathematical errors which might exist in the pertinent exhibits to this agreement upon approval of the Commissioner, the Supervisor and the Working Interest Owners.

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



be binding upon the Working Interest Owner responsible therefor until the first day of the calendar month after said Working Interest Owner is furnished with the original or acceptable photostatic or certified copy of the recorded instrument of transfer.

21. EFFECTIVE DATE AND TERM. This agreement shall become effective upon approval by the Director and the Commissioner or their duly authorized representatives as of 7:00 a.m. of the first day of the month next following the date of approval by the Director, provided:

This agreement and the unit operating agreement have been executed or ratified by Working Interest Owners owning a combined unit participation during Phase II of at least 90% and the execution and ratification of this agreement by royalty owners owning a combined interest of at least 75% of the royalty interest as to fee land and record title interest as to State and Federal lands in said unit area.

If this unit agreement has not been filed for final approval on or before September 1, 1969, it shall ipso facto expire on said date (hereinafter called "expiration date") and thereafter be of no further force or effect, unless prior thereto this agreement has been executed or ratified by Working Interest Owners owning a combined unit participation during Phase II of at least eighty-five per cent (85%), and the Working Interest Owners owning a combined unit participation during Phase II of at least eighty-five per cent (85%) committed to this agreement have agreed to extend said expiration date for a period not to exceed six (6) months (hereinafter called "extended expiration date"). If said expiration date is so extended and execution, ratification and filing for final approval are not accomplished on or before said extended expiration date, this agreement shall ipso facto expire on said extended expiration date and thereafter be of no further force or effect. For the purpose of this section, ownership shall be computed on the basis of unit participation as determined from Exhibit "B" attached hereto.

Unit Operator shall, within thirty (30) days after the effective date of this agreement, file for record a certificate to the effect that this agreement has become effective according to its terms and stating further the effective date and the location of the governmental agency offices where copies of this agreement are filed.

The term of this agreement shall be for and during the time that Unitized Substances can be produced in paying quantities from the unit area and as long thereafter as drilling, reworking or other operations (including

secondary recovery operations) are prosecuted thereon without cessation of more than ninety (90) consecutive days.

This agreement may be terminated at any time for any other reason with the approval of the Commissioner and the Director by Working Interest Owners owning eighty-five per cent (85%) unit participation during Phase II. Notice of any such termination shall be given by Unit Operator to all parties hereto.

Upon termination of this agreement, unit operations shall cease, and thereafter the parties hereto shall be governed by the terms and provisions of the leases and contracts affecting the separate tracts.

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

22. RATE OF PROSPECTING, DEVELOPMENT AND PRODUCTION. All production and the disposal thereof shall be in conformity with allocations and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State statute. The Director and the Commissioner are hereby vested with authority to alter or modify from time to time at their discretion the quantity and rate of production under this agreement when such quantity and rate is not fixed pursuant to Federal and State law or does not conform to any statewide 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; provided, further that no such alteration or modification shall be effective as to any land of the State of New Mexico as to the rate of prospecting and developing

in the absence of the specific written approval thereof by the Commissioner and as to any lands of the State of New Mexico or privately owned lands subject to this agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

Powers vested in this section shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than 15 days from notice.

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

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

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

26. 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 United States or of the State of New Mexico or rules or regulations issued thereunder in any way affecting such party, or as a waiver by

any such party of any right beyond his or its authority to waive.

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

28. LOSS OF TITLE. In the event title to any tract of unitized land shall fail so as to render the tract inoperable under this agreement and the true owner cannot be induced to join this unit agreement, such tract shall be automatically regarded as not committed hereto and there shall be such re-adjustment of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title as to any royalty, working interest or other interest subject hereto, payment or delivery on account thereof may be withheld without liability or interest until the dispute is finally settled; provided, that as to State or Federal land or leases, no payments of funds due the State of New Mexico or the United States of America shall be withheld, but such funds shall be deposited as directed by the Commissioner or the Supervisor (as the case may be), to be held as un-earned 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.

29. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the Working Interest Owners, nor any of them, shall be subject to any forfeiture, termination or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provisions thereof to the extent that the said Unit Operator or the Working Interest Owners, or any of them, are hindered, delayed or prevented from complying therewith by reason of failure of the Unit Operator to obtain, in the exercise

of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained. The parties hereto and the Commission agree that all powers and authority vested in the Commission in and by any provisions of this agreement are vested in the 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.

30. BORDER AGREEMENTS. Subject to the approval of the Supervisor and the Commissioner, the Unit Operator, with concurrence of at least one other Working Interest Owner whose unit participation totals at least two per cent (2%), based upon the percentages of participation during Phase II, may enter into a border protection agreement or agreements with the Working Interest Owners of adjacent lands along the boundaries of the unit area with respect to the operations in the border area for the maximum ultimate recovery, conservation purposes and proper protection of the parties and interests.

31. NONJOINDER AND SUBSEQUENT JOINDER. If the owner of any substantial interest in a tract within the unit area fails or refuses to subscribe, ratify or consent in writing to this agreement, the Working Interest Owner in that tract who has executed or ratified this agreement may withdraw said tract from this agreement by written notice to the Director, the Commissioner and Unit Operator prior to the effective date of this agreement. Joinder by any Royalty Owner, at any time, must be accompanied by appropriate joinder of the corresponding Working Interest Owner in order for the interest of such Royalty Owner to be regarded as effectively committed. Joinder to the Unit Agreement by a Working Interest Owner, at any time, must be accompanied by appropriate joinder to the Unit Operating Agreement in order for such interest to be regarded as effectively committed to this unit agreement.

Any oil or gas interest in the lands in the unit area not committed hereto prior to submission of this agreement to the Commissioner and the Director for final approval may thereafter be committed hereto upon compliance

with the applicable provisions of this section and of Section 12 (Tracts Qualified for Unit Participation) hereof, at any time up to the effective date hereof and for a period to and including three (3) months thereafter, on the same basis of participation as provided in Section 11 (Tract Participation) by the owner or owners thereof subscribing, ratifying, or consenting in writing to this agreement and, if the interest is a working interest, by the owner of such interest subscribing also to the Unit Operating Agreement.

It is understood and agreed, however, that from and after three (3) months from the effective date hereof the right of subsequent joinder as provided in this section shall be subject to such requirements or approval and on such basis as may be agreed upon by eighty-five per cent (85%) of the Working Interest Owners (based upon the percentage of participation during Phase II) and approval by the Supervisor and Commissioner. Such subsequent joinder by a Working Interest Owner must be evidenced by his execution or ratification of this agreement and the Unit Operating Agreement. Such subsequent joinder by a royalty owner must be evidenced by his execution, ratification or consent of this agreement and must be consented to in writing by the Working Interest Owner responsible for the payment of any benefits that may accrue hereunder in behalf of such royalty owner. Except as may be otherwise herein provided, subsequent joinder to this agreement shall be effective at 7:00 o'clock a.m. as of the first day of the month following the filing with the Commissioner and the Supervisor of duly executed counterparts of any and all documents necessary to establish effective commitment of any tract or interest to this agreement, unless objection to such joinder by the Commissioner or the Director is duly made within sixty (60) days after such filing.

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, or any operations conducted hereunder shall create or be deemed to create a partnership or association between the parties hereto or any of them.

33. LIMITATION OF APPROVALS. Notwithstanding anything herein contained to the contrary, if no federal lands are committed to this agreement, then no consents or approvals provided herein shall be required of the Department, the Secretary, the Director, or the Supervisor; and it shall not

be necessary to file any instrument hereunder with said officers or agencies unless and until federal lands are so committed to this agreement; likewise, if no state lands are committed to this agreement, then no consents or approvals provided herein shall be required of the Commissioner, and it shall not be necessary to file any instrument hereunder with said officer unless and until state lands are so committed to this agreement.

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

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

DATE: APRIL 22, 1969

ATLANTIC RICHFIELD COMPANY

BY: J. J. Smith  
Attorney-in-Fact

Address: P. O. Box 1978  
Roswell, New Mexico

UNIT OPERATOR AND WORKING INTEREST OWNER

WORKING INTEREST OWNERS

ATTEST:

[Signature]

Date: April 14, 1969

CITIES SERVICE OIL COMPANY

BY: [Signature]  
VICE-PRESIDENT

Address: BARTLESVILLE, OKLAHOMA

ATTEST:

\_\_\_\_\_

Date: \_\_\_\_\_

TEXACO, INC.

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

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

STATE OF NEW MEXICO )  
 ) ss.  
COUNTY OF CHAVES )

The foregoing instrument was acknowledged before me this 22<sup>nd</sup> day  
of APRIL, 1969, by S. L. Smith, Attorney-in-Fact of Atlantic  
Richfield Company, a Pennsylvania corporation, on behalf of said corporation.

My Commission Expires:

July 14, 1971

Barbara L. McGeer  
Notary Public

STATE OF Oklahoma )  
 ) ss.  
COUNTY OF Washington )

The foregoing instrument was acknowledged before me this 14 day  
of April, 1969, by S. L. Kastner,

Delaware VICE PRESIDENT of Cities Service Oil Company, a  
corporation, on behalf of said corporation.

My Commission Expires:

10-27-69

Jelma Nelson  
Notary Public

STATE OF \_\_\_\_\_ )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

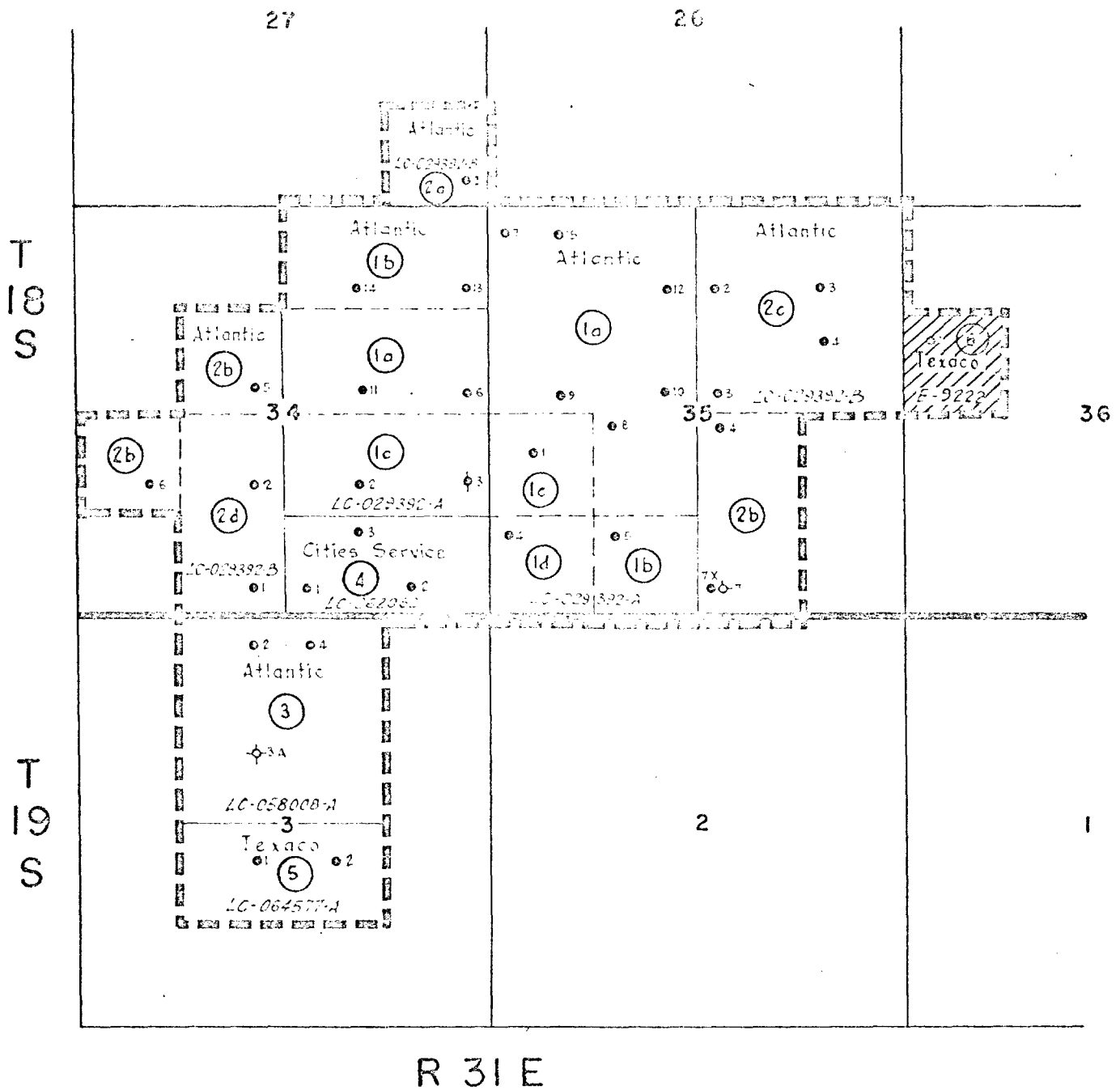
The foregoing instrument was acknowledged before me this \_\_\_\_\_ day  
of \_\_\_\_\_, 19\_\_\_\_, by \_\_\_\_\_,  
\_\_\_\_\_, of Texaco, Inc., a \_\_\_\_\_  
corporation, on behalf of said corporation.

My Commission Expires:




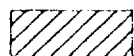
\_\_\_\_\_

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





LEGEND

-  Unit Area
-  Tract Number
-  Federal Land
-  State Land

EAST SHUGART UNIT  
EDDY COUNTY, NEW MEXICO

EXHIBIT "A"

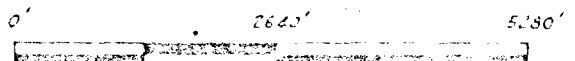


EXHIBIT "B" TO UNIT AGREEMENT  
 EAST SHUGART UNIT  
 EDDY COUNTY, NEW MEXICO

Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty and Ownership Percentage	Lessee of Record	Overriding Royalty Owner and Percentage		Working Interest Owner and Percentage	Percent Participation of Tract in Unit	
							Percentage			Phase I
1a	T-18-3, R-31-E Sec. 34: S/2NE/4 Sec. 35: NW/4, NE/4SW/4	280.00	LC-029392-A 12-1-59	U.S.A. 12.5%	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Selma E. Andrews c/o Trust Dept. Box 241, Dallas 21, Texas .2685 Albuquerque Nat'l. Bank, Trustee under the last will and testament of F. A. Andrews, deceased .2315 Neil B. Watson as Guardian of the Estate of M. E. Baish .500 Elizabeth Coulthard 4.4375 S. W. Lodewick .5625 Ethel Lewis McGuire .5000 Kenneth McIntosh .5000 Ralph A. Shugart .5000 Sue Saunders Graham (OP) 4.0000 S. J. Iverson (OP) 7.5000 Iversons, Inc. (OP) 1.5000 Dorothy C. Iverson (OP) c/o Daniel, Daniel, Emnis & Co., Tulsa, Oklahoma 1.5000		Atlantic Richfield Co. 100.00%	17.3879	17.1844

Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty Ownership and Percentage	Lessee of Record	Overriding Royalty Owner and Percentage	Working Interest Owner and Percentage	Percent Participation of Tract in Unit Phase I	Phase II
1b	T-18-S, R-31-E Sec. 34: N/2NE/4 Sec. 35: SE/4SW/4	120.00	IC-029392-A 12-1-59	U.S.A. 12.5%	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Selma E. Andrews c/o Trust Dept Box 241, Dallas 21, Texas .2685 Albuquerque Nat'l. Bank, Trustee under the last will and testament of F. A. Andrews, deceased .2315 Neil B. Watson as Guardian of the Estate of M. E. Baish .5000 Elizabeth Coulthard 4.4375 Neil Hill Welch Gillespie 3.1250 Marjorie Nell Welch Hickey .6250 S. W. Lodewick .5625 Ethel Lewis McGuire .5000 Kenneth McIntosh .5000 Ralph A. Shugart .5000 Robert Hill Welch 6250	Atlantic Richfield Co. 100.00%	11.7073	8.9490
						Jewell D. Iverson (OP) 1.5000 B. M. Keohane (OP) 12.0000 Elyse Saunders Patterson (OP) 4.0000 Sally Saunders Toles (OP) 4.0000 V. S. Welch (OP) 12.0000			

<u>Tract No.</u>	<u>Description of Land</u>	<u>No. of Acres</u>	<u>Serial No. &amp; Date of Lease</u>	<u>Basic Royalty Ownership and Percentage</u>	<u>Lessee of Record</u>	<u>Overriding Royalty Owner and Percentage</u>	<u>Working Interest Owner and Percentage</u>	<u>P</u>
1c	T-18-S, R-31-E Sec. 34: N/2SE/4 Sec. 35: NW/4SW/4	120.00	LC-029392-A 12-1-59	U.S.A. Schedule "C"	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Selma E. Andrews c/o Trust Dept. Box 241, Dallas 21, Texas .2685 Albuquerque Nat'l. Bank, Trustee under the last will and testament of F. A. Andrews, deceased .2315 Neil B. Watson as Guardian of the Estate of M. E. Balsh .500 Elizabeth Coulthard 4.4375	Atlantic Richfield Co. 100.00%	6
					Van Phillip Welch, Jr. .6250 Sue Saunders Graham (OP) 3.7500 S. J. Iverson (OP) 7.0312 Iversons, Inc. (OP) 1.4053 Dorothy C. Iverson (OP) c/o Daniel, Daniel, Ennis & Co., Tulsa, Oklahoma 1.4062 Jewell D. Iverson (OP) 1.4053 B. M. Keohane (OP) 11.2500 Elyse Saunders Patterson (OP) 3.7500 Sally Saunders Toles (OP) 3.7500 V. S. Welch (OP) 11.2500			

<u>Tract No.</u>	<u>Description of Land</u>	<u>No. of Acres</u>	<u>Serial No. &amp; Date of Lease</u>	<u>Basic Royalty Ownership and Percentage</u>	<u>Lessee of Record</u>	<u>Overriding Royalty Owner and Percentage</u>	<u>Working Interest Owner and Percentage</u>	<u>Percent of Tract Phase I</u>
1d	T-18-S, R-31-E Sec. 35: SW/4SW/4	40.00	LC-029392-A 12-1-59	U.S.A. "C" Schedule "C"	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Selma E. Andrews c/o Trust Dept. Box 241, Dallas 21, Texas .2685 Albuquerque Nat'l. Bank, Trustee under the last will and testament of F. A. Andrews, deceased .2315	Atlantic Richfield Co. 100.00%	6.4514
						S. W. Iodewick .5625 Ethel Lewis McGuire .5000 Kenneth McIntosh .5000 Ralph A. Shugart .5000 Sue Saunders Graham (OP) 4.0000 S. J. Iverson (OP) 7.5000 Iversons, Inc. (OP) 1.5000 Dorothy C. Iverson (OP) c/o Daniel, Daniel, Etnis & Co., Tulsa, Oklahoma 1.5000 Jewell D. Iverson (OP) 1.5000 B. M. Keohane (OP) 12.0000 Elyse Saunders Patterson (OP) 4.0000 Sally Saunders Toles (OP) 4.0000 V. S. Welch (OP) 12.0000		

<u>Tract No.</u>	<u>Description of Land</u>	<u>No. of Acres</u>	<u>Serial No. &amp; Date of Lease</u>	<u>Basic Royalty Ownership and Percentage</u>	<u>Lessee of Record</u>	<u>Overriding Royalty Owner and Percentage</u>	<u>Working Interest Owner and Percentage</u>	<u>Percent Participation of Tract in Unit Phase I</u>	<u>Phase II</u>
					Neil B. Watson as Guardian of the Estate of M. E. Baish				
					.5000				
					Elizabeth Coulthard				
					4.4375				
					Nell Hill Welch Gillespie				
					3.1250				
					Marjorie Nell Welch Hickey				
					.6250				
					S. W. Lodewick				
					.5625				
					Ethel Lewis McGuire				
					.5000				
					Kenneth McIntosh				
					.5000				
					Ralph A. Shugart				
					.5000				
					Robert Hill Welch				
					.6250				
					Van Philip Welch, Jr.				
					.6250				
					Sue Saunders Graham (OP)				
					3.7500				
					S. J. Iverson (OP)				
					7.0312				
					Iversons, Inc. (OP)				
					1.4063				
					Dorothy C. Iverson (OP)				
					c/o Daniel, Daniel Ennis & Co., Tulsa, Oklahoma				
					1.4062				
					Jewell D. Iverson (OP)				
					1.4063				
					B. M. Keohane (OP)				
					11.2500				
					Elyse Saunders Patterson (OP)				
					3.7500				

Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty and Ownership Percentage	Lessee of Record	Overriding Royalty Owner and Percentage		Working Interest Owner and Percentage		Percent Participation of Tract in Unit	
										Phase I	Phase II
2a	T-18-S, R-31-E Sec. 27: SE/4SE/4	40.00	LC-029392-B 11-1-61	U.S.A. 12.5%	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Sue Saunders Graham (OP) 4.3750 S. J. Iverson (OP) 8.2032 Iversons, Inc. (OP) 1.6406 Dorothy C. Iverson (OP) c/o Daniel, Daniel Emnis & Co., Tulsa, Oklahoma 1.6406 Jewell D. Iverson (OP) 1.6405 B. M. Keohane (OP) 13.1250 Elyse Saunders Patterson (OP) 4.3750 Sally Saunders Toles (OP) 4.3750 V. S. Welch (OP) 13.1250	Atlantic Richfield Co. 100.00%	4.1080 2.5140			
2b	T-18-S, R-31-E Sec. 34: SE/4NW/4 NW/4SW/4 Sec. 35: W/2SE/4	160.00	LC-029392-B 11-1-61	U.S.A. 12.5%	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Well Hill Welch Gillespie 3.1250 Marjorie Nell Welch Hickey .6250 Robert Hill Welch .6250 Van Philip Welch, Jr. .6250 Sue Saunders Graham (OP) 4.1250	Atlantic Richfield Co. 100.00%	11.8146 6.9179			

<u>Tract No.</u>	<u>Description of Land</u>	<u>No. of Acres</u>	<u>Serial No. &amp; Date of Lease</u>	<u>Basic Royalty Ownership and Percentage</u>	<u>Lessees of Record</u>	<u>Overriding Royalty Owner and Percentage</u>	<u>Working Interest Own and Percentage</u>
2c	T-18-S, R-31-E Sec. 35: NE/4	160.00	LC-029392-B 11-1-61	U.S.A. 12.5%	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Neil Hill Welch Gillespie 3.1250 Van Phillip Welch, Jr. .6250 Marjorie Nell Welch Hickey Robert Hill Welch .6250 Atlantic Richfield Co. 7.5000 Phoebe Shelton (OP) 15.5859 W. T. Haldeman (OP) 2.2266 Vivian Tidwell (OP) 2.2265 Charles R. Martin (OP) 2.2266 Homer Wedig (OP) 2.2265	Atlantic Richfield Co 100.00%
					S. J. Iverson (OP) 7.7343 Iversons, Inc. (OP) 1.5469 Dorothy C. Iverson (OP) c/o Daniel, Daniel Emnis & Co., Tulsa, Oklahoma 1.5469 Jewell D. Iverson (OP) 1.5469 B. M. Keohane (OP) 12.3750 Elyse Saunders Patterson (OP) 4.1250 Sally Saunders Toles (OP) 4.1250 V. S. Welch (OP) 12.3750		



Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty Ownership and Percentage	Lessee of Record	Overriding Royalty Owner and Percentage		Working Interest Owner and Percentage	Percent Participation of Tract in Unit	
						Phase I	Phase II			
24	T-18-S, R-31-E Sec. 34: E/2SW/4	80.00	LC-029392-B 11-1-61	U.S.A. Schedule "D"	B. M. Keohane Sue Saunders Graham Sally Saunders Toles Marjorie Well Welch Elyse Saunders Patterson V. S. Welch Jewell D. Iverson Dorothy C. Iverson Iversons, Inc.	Well Hill Gillespie 3.1250 Atlantic Richfield Co. 100.00%	2.8603	5.3525		
					Sue Saunders Graham (OP) S. J. Iverson (OP) 7.7343 Iversons, Inc. (OP) 1.5469 Dorothy C. Iverson (OP) c/o Daniel, Daniel, Ennis & Co., Tulsa, Oklahoma 1.5469 Jewell D. Iverson (OP) 1.5469 B. M. Keohane (OP) 12.3750 Elyse Saunders Patterson (OP) 4.1250 Sally Saunders Toles (OP) 4.1250					
					Robert Hill Welch Van Phillip Welch, Jr. .6250 Sue Saunders Graham (OP) 4.1250 S. J. Iverson (OP) 7.7343 Iversons, Inc. (OP) 1.5469 Dorothy C. Iverson (OP) c/o Daniel, Daniel, Ennis & Co., Tulsa, Oklahoma 1.5469 Jewell D. Iverson (OP) 1.5469 B. M. Keohane (OP) 12.3750 Elyse Saunders Patterson (OP) 4.1250 Sally Saunders Toles (OP) 4.1250					
					Mills Talmage (OP) 2.2266 Bert H. Murphy (OP) .6250 Thomas F. Welch (OP) .6250 Harold C. Porter (OP) .6250 V. S. Welch (OP), Attorney-in-Fact for Van Phillip Welch, Jr. and Robert Hill Welch 8.9063					

Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty Ownership and Percentage	Lessee of Record	Overriding Royalty Owner and Percentage	Working Interest Owner and Percentage	Percent Participation of Tract in Unit Phase I	Phase II
3	T-19-S, R-31-E Sec. 3: Lots 2,3, SW/4NE/4, SE/4NW/4	159.40	LC-058008-A 1-1-59	U.S.A. 12.5%	Sue Saunders Graham Keohane, Inc. Sally Saunders Toles Elyse Saunders Patterson Virginia Lee Saunders Mary Lee Saunders Woodlan Perry Saunders	V. S. Welch (OP) 12.3750  Selma E. Andrews c/o Trust Dept., Box 241, Dallas 21, Texas .5370 Albuquerque Nat'l. Bank, Trustee under the last will and testament of F. A. Andrews, deceased .4530 Neil B. Watson, as Guardian of the Estate of M. E. Baish .6250 James Warren Day 3.0000 Charles J. Grayson .2500 Ernest A. Hanson 1.0000 Virginia Simon 1.0000 J. K. Wallingford .6250 Sue Saunders Graham (OP) 5.8333 Keohane, Inc. (OP) 20.0000 Elyse Saunders Patterson (OP) 5.8333 Virginia Lee Saunders (OP) 1.5625 Mary Lee Saunders (OP) .4688 Woodlan Perry Saunders (OP) .4688 Sally Saunders Toles (OP) 5.8333	Atlantic Richfield Co. 100.00%	13.5206	17.7529

Tract No.	Description of Land	No. of Acres	Serial No. & Date of Lease	Basic Royalty Ownership and Percentage	Lessee of Record	Overriding Royalty Owner and Percentage	Working Interest Owner and Percentage	Percent Participation of Tract in Unit Phase I	Phase II
4	T-18-S, R-31-E Sec. 34: S/2SE/4	80.00	IC-062082 12-1-59	U.S.A. 12.5%	Cities Service Oil Company	Albuquerque Nat'l. Cities Service Oil Co. Trust Frank A. Andrews .002315 Selma E. Andrews Agency .002685 Elizabeth Coulthard .044375 El Paso Nat'l. Bank, Tr. U/W & Est. M. E. Baish .005000 S. W. Lodewick .005625 Ethel Lewis McGuire .005000 Kenneth McIntosh .005000 Mercury Oil Company .052500 R. A. Shugart .005000	100.00%	11.0081	14.6946
5	T-19-S, R-31-E Sec. 3: NW/4SE/4 NE/4SW/4	80.00	IC-064577-A 2-1-48	U.S.A. 12.5%	Texaco, Inc.	Beulah Irene Hanson and Ernest A. Hanson 1.5000 Olen F. Featherstone 1.5000	Texaco, Inc. 100.00%	1.6206	1.1118
Eleven Federal Tracts		(1319.40)						(98.2640)	(99.0419)
6	T-18-S, R-31-E Sec. 36: SW/4NW/4	40.00	E-92222 7-19-55	State of New Mexico 12.5%	Texaco, Inc.	None	Texaco, Inc. 100.00%	1.7360	0.9581
One State of New Mexico Tract		(40.00)						(1.7360)	(0.9581)
Total of 12 tracts containing 1,359.40 acres in unit area.								100.0000	100.0000

EXHIBIT "B" SUMMARY

	<u>Phase I</u>	<u>Phase II</u>
Atlantic Richfield Company	85.6353	83.2355
Cities Service Oil Company	11.0031	14.6946
Texaco, Inc.	<u>3.3566</u>	<u>2.0699</u>
	100.0000	100.0000