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REPORTS

DATE:

1987

VACUUM FIELD
LEA COUNTY, NEW MEXICO

CONTINGENCY PLAN
FOR
SUBSURFACE ENVIRONMENT PROTECTION

INJECTION PROJECT OPERATORS:

ARCO OIL AND GAS COMPANY
MOBIL PRODUCING TEXAS AND NEW MEXICO
PHILLIPS PETROLEUM COMPANY
STANDARD OIL PRODUCTION COMPANY
TEXACO, INC

December, 1987

December, 1987

**VACUUM FIELD
LEA COUNTY, NEW MEXICO**

CONTINGENCY PLAN FOR SUBSURFACE ENVIRONMENT PROTECTION

PREFACE

To protect the subsurface environment of the Vacuum Field from possible degradation caused by pressured water in the Salado formation, the water injection project operators in the field plan to monitor the integrity of the Ogallala formation water. This monitoring program will promptly identify subsurface problems.

Geological investigations, as well as NMOCD regulated well completion techniques, give evidence that there is minimal likelihood of contamination of the Ogallala formation by the water in the Salado. However, in the unlikely event that the pressured water escapes from the Salado formation, the plan also lays out active steps to confine the problem area, to identify and rectify the cause, and for restoration of the area.

December, 1987

**VACUUM FIELD
LEA COUNTY, NEW MEXICO**

CONTINGENCY PLAN FOR SUBSURFACE ENVIRONMENT PROTECTION

I. MONITOR

- A. Sample and analyze all active and accessible fresh water wells to obtain a base chloride content reference.

Attachment No. 1 is a list of the fresh water wells in the Vacuum Field.

Attachment No. 3 is a field plat showing the approximate location of these wells.

- B. Quarterly sample and analyze fresh water wells (Attachment No. 2).

1. Wells will be produced prior to sampling to insure a representative sample is obtained.
2. Analysis will be performed by an independent lab or chemical company.

- C. Conduct monthly surface pressure checks of monitor wells completed in the Salado Section.

- D. Report drilling activity quarterly, specifically as to the existence or nonexistence of waterflows and their shut-in surface pressure.

- E. All data to be submitted to the technical committee for compilation and comparison. A quarterly report will be sent to the Hobbs District Supervisor of the OCD and the Management Committee members.

December, 1987

**VACUUM FIELD
LEA COUNTY, NEW MEXICO**

CONTINGENCY PLAN FOR SUBSURFACE ENVIRONMENT PROTECTION

II. ACTION

If a fresh water sample shows an abnormal increase in chlorides, the following actions are to be taken:

- A. Notify OCD and all Field Project Operators.
- B. Begin producing contaminated water at maximum rate and retest for verification.
- C. Sample and shut in all uncontaminated offset fresh water wells.
- D. Reduce surface fluid injection pressures on all injection wells within a half-mile radius to Q psi.
- E. Begin testing the areal extent of the contamination and searching for the source.

Options available:

- 1. Perforate existing nearby wellbores opposite Ogallala.
- 2. Drill test wells.
- F. Identify source and repair or eliminate.
- G. Deplete area of contaminated water:
 - 1. Produce to surface with following disposal options:
 - a. Existing disposal wells and systems.
 - b. Current injection projects.
 - c. Perforate existing wellbores in the lower San Andres for additional disposal capacity.
 - 2. Subsurface depletion and disposal by simultaneous completions in common wellbores of the Ogallala, Santa Rosa, Dewey Lake and/or Salado with the lower San Andres disposal zone.
- H. Increase fresh water well sampling frequency in and around the contaminated area.

December, 1987

VACUUM FIELD INJECTION PROJECT OPERATORS

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2. J. A. Nicholson
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December, 1987

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December, 1987

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Fresh Water Wells
Vacuum Field
Lea County, New Mexico

12/87

Well Description	Approximate Well Location			
Texaco VGSAU Supply Well #1	1380'	FNL & 1980'	FEL	Sec 02-18S-34E
Texaco VGSAU Supply Well #2	1120'	FNL & 1520'	FEL	Sec 02-18S-34E
Texaco VGSAU Supply Well #3	1100'	FNL & 210'	FWL	Sec 01-18S-34E
Texaco VGSAU Supply Well #4	700'	FSL & 1500'	FWL	Sec 02-18S-34E
Texaco CVU Supply Well #1	400'	FSL & 400'	FWL	Sec 30-17S-35E
Texaco CVU Supply Well #2	330'	FNL & 1980'	FWL	Sec 06-18S-35E
Texaco CVU Supply Well #3	10'	FNL & 160'	FWL	Sec 06-18S-35E
Texaco Buckeye Office Well	330'	FNL & 1980'	FEL	Sec 01-18S-34E
Texaco Gas Plant Water Well	500'	FSL & 1900'	FEL	Sec 36-17S-34E
Buckeye Store Water Well	800'	FSL & 300'	FEL	Sec 25-17S-34E
Forklift Ent. Buckeye Station	940'	FNL & 380'	FWL	Sec 30-17S-35E
Ranch Windmill	1980'	FNL & 2180'	FEL	Sec 06-18S-35E
Ranch Windmill	200'	FNL & 2640'	FWL	Sec 12-18S-34E
N. M. Potash Corp. Well #1	1320'	FSL & 1520'	FWL	Sec 36-17S-34E
N. M. Potash Corp. Well #5	660'	FSL & 1680'	FEL	Sec 34-17S-34E
N. M. Potash Corp. Well #6	2400'	FNL & 1550'	FWL	Sec 27-17S-34E
N. M. Potash Corp. Well #7	660'	FSL & 2180'	FWL	Sec 22-17S-34E
N. M. Potash Corp. Well #8	1320'	FSL & 400'	FWL	Sec 31-17S-35E
Amax Water Well	2500'	FNL & 1150'	FEL	Sec 28-17S-34E
Western AG Minerals Well #1	660'	FSL & 700'	FWL	Sec 21-17S-34E
Western AG Minerals Well #4	1980'	FSL & 300'	FEL	Sec 21-17S-34E
Western AG Minerals Well #5	1700'	FNL & 2300'	FWL	Sec 22-17S-34E
Western AG Minerals Well #6	2550'	FSL & 1220'	FWL	Sec 22-17S-34E
Western AG Minerals Well #7	400'	FSL & 2400'	FEL	Sec 21-17S-34E
Natl. Potash Water Well #7	1650'	FSL & 2600'	FWL	Sec 09-18S-35E
Natl. Potash Water Well #2	550'	FSL & 2050'	FEL	Sec 11-18S-34E
Ranch Windmill	2550'	FSL & 1250'	FEL	Sec 15-17S-34E
Western AG Minerals Well #9	200'	FNL & 330'	FEL	Sec 22-17S-34E
NVAU #101	10'	FSL & 330'	FWL	Sec 11-17S-34E
NVAU #100	2000'	FSL & 2100'	FEL	Sec 14-17S-34E
BS #179	700'	FSL & 1320'	FEL	Sec 14-17S-34E
BS #94	2550'	FNL & 2550'	FEL	Sec 14-17S-34E
Ranch Windmill	300'	FSL & 1600'	FEL	Sec 22-17S-34E
Amax #7	800'	FNL & 1850'	FEL	Sec 27-17S-34E
Amax #6	900'	FNL & 450'	FWL	Sec 26-17S-34E
Mobil Office Water Well	700'	FNL & 2640'	FWL	Sec 25-17S-34E
N. M. Potash Water Well #9	330'	FSL & 330'	FEL	Sec 27-17S-34E
*No Name, No Pump	450'	FNL & 2250'	FEL	Sec 24-17S-34E
Ranch Windmill	660'	FSL & 2100'	FWL	Sec 07-17S-35E
*No Name, No Pump	600'	FSL & 2300'	FEL	Sec 23-17S-34E
*Ranch Windmill	2310'	FSL & 760'	FWL	Sec 32-17S-35E
*Ranch Well	2310'	FSL & 560'	FWL	Sec 32-17S-35E
*Ranch Well	1090'	FNL & 1650'	FWL	Sec 32-17S-34E
*Ranch Well	890'	FSL & 990'	FWL	Sec 32-17S-34E

Well Description	Approximate Well Location			
Lee Plant Supply Well #1	75'	FSL & 2425'	FEL	Sec 30-17S-35E
*Lee Plant Supply Well #2	75'	FSL & 1930'	FEL	Sec 30-17S-35E
Lee Plant Supply Well #3	825'	FNL & 2310'	FEL	Sec 31-17S-35E
Lee Plant Supply Well #4	1280'	FNL & 1320'	FWL	Sec 31-17S-35E
*Lee Plant Monitor Well #1	260'	FSL & 1668'	FEL	Sec 30-17S-35E
*Lee Plant Monitor Well #2	75'	FSL & 1426'	FEL	Sec 30-17S-35E
*Lee Plant Monitor Well #3	79'	FNL & 1542'	FEL	Sec 31-17S-35E
*Lee Plant Monitor Well #4	53'	FNL & 1647'	FEL	Sec 31-17S-35E
Hale Mable Supply Well #SO-1	150'	FSL & 2065'	FWL	Sec 31-16S-35E
Hale Mable Supply Well #SO-2	2240'	FSL & 2180'	FEL	Sec 35-17S-34E
Ranch Windmill	1100'	FNL & 1400'	FWL	Sec 33-17S-35E
Ranch Windmill	450'	FSL & 1550'	FWL	Sec 23-17S-35E
EVGSAU Supply Well #2721-SO4	550'	FSL & 1850'	FWL	Sec 27-17S-35E
*EVGSAU Supply Well #2941-SO5	1900'	FSL & 1900'	FWL	Sec 29-17S-35E
EVGSAU Supply Well #3366-SO6	2100'	FNL & 550'	FWL	Sec 33-17S-35E
EVGSAU Supply Well #3202-S07	600'	FSL & 1650'	FEL	Sec 32-17S-35E
EVGSAU Supply Well #2060-S01	1886'	FSL & 2083'	FEL	Sec 20-17S-35E
EVGSAU Supply Well #2865-S02	1900'	FNL & 600'	FWL	Sec 28-17S-35E
*Mobil Supply Well #S08	300'	FNL & 1900'	FEL	Sec 05-18S-35E
*Mobil Supply Well #S09	2300'	FNL & 700'	FEL	Sec 24-17S-34E
Ranch Windmill	2300'	FNL & 1300'	FEL	Sec 22-17S-35E
*Ranch Windmill	1980'	FNL & 660'	FEL	Sec 21-17S-35E
Ranch Windmill	300'	FSL & 2100'	FWL	Sec 18-17S-35E
*Water Well	2100'	FNL & 660'	FWL	Sec 20-17S-35E
Chevron Doghouse	500'	FNL & 660'	FWL	Sec 32-17S-35E
Exxon Doghouse	500'	FNL & 2400'	FEL	Sec 32-17S-35E
Ranch Windmill	2640'	FNL & 2640'	FWL	Sec 16-18S-35E

*Inactive well

Map Symbols: Active Well o

Inactive Well +

ATTACHMENT NO. 2

Fresh Water Wells
Vacuum Field
Lea County, New Mexico

12/87

Well Description	1987 4th Qtr	Chloride Content - PPM			
		1988			
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Texaco VGSAU Supply Well #1	173				
Texaco VGSAU Supply Well #2					
Texaco VGSAU Supply Well #3	145				
Texaco VGSAU Supply Well #4	42				
Texaco CVU Supply Well #1					
Texaco CVU Supply Well #2	99				
Texaco CVU Supply Well #3					
Texaco Buckeye Office Well	183				
Texaco Gas Plant Water Well					
Buckeye Store Water Well	71				
Forklift Ent. Buckeye Station	1580				
Ranch Windmill	40				
Ranch Windmill	36				
N.M. Potash Corp. Well #1					
N. M. Potash Corp. Well #5	103				
N. M. Potash Corp. Well #6	47				
N. M. Potash Corp. Well #7	45				
N. M. Potash Corp. Well #8	277				
Amax Water Well	83				
Western AG Minerals Well #1	93				
Western AG Minerals Well #4	48				
Western AG Minerals Well #5					
Western AG Minerals Well #6	51				
Western AG Minerals Well #7	46				
Natl. Potash Water Well #7	244				
Natl. Potash Water Well #2					
Ranch Windmill					
Western AG Minerals Well #9	62				
NVAU #101	152				
NVAU #100	100				
BS #179	64				
BS #94	88				
Ranch Windmill	39				
Amax #7	57				
Amax #6	53				
Mobil Office Water Well	45				
N. M. Potash Water Well #9	47				
*No Name, No Pump					
Ranch Windmill	38				
*No Name, No Pump					
*Ranch Windmill					
*Ranch Well					
*Ranch Well					
*Ranch Well					

*added for
land use
well no
sample in 1988*

Well Description	Chloride Content - PPM				
	1987 4th Qtr	1988			
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lee Plant Supply Well #1	79				
*Lee Plant Supply Well #2					
Lee Plant Supply Well #3	250				
Lee Plant Supply Well #4	190				
*Lee Plant Monitor Well #1	113				
*Lee Plant Monitor Well #2	248				
*Lee Plant Monitor Well #3	85				
*Lee Plant Monitor Well #4	99				
Hale Mable Supply Well #SO-1	43				
Hale Mable Supply Well #SO-2	71				
Ranch Windmill	47				
Ranch Windmill	38				
EVGSAU Supply Well #2721-SO4	115				
*EVGSAU Supply Well #2941-SO5					
EVGSAU Supply Well #3366-SO6	59				
EVGSAU Supply Well #3202-S07	59				
EVGSAU Supply Well #2060-S01	78				
EVGSAU Supply Well #2865-S02	61				
*Mobil Supply Well #S08					
*Mobil Supply Well #S09					
Ranch Windmill	54				
*Ranch Windmill					
Ranch Windmill	42				
*Water Well					
Chevron Doghouse					
Exxon Doghouse					
Ranch Windmill	27				

*Inactive well



