

UIC - _____1_____

**UIC PRIMACY
(Class II Wells)**

DATE: _____1982_____



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OFFICE OF THE SECRETARY

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

September 3, 1981

POST OFFICE BOX 2770
113 WASHINGTON AVENUE
SANTA FE, NEW MEXICO 87501
(505) 827-2471

Ms. Frances Phillips
Acting Regional Administrator (6A)
United States Environmental Protection Agency
Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Ms. Phillips:

Enclosed herein is the State of New Mexico's Application for State Primacy Status over Class II Underground Injection Wells as provided by Part C, Section 1425 of the Safe Drinking Water Act, Public Law 93-523 as amended.

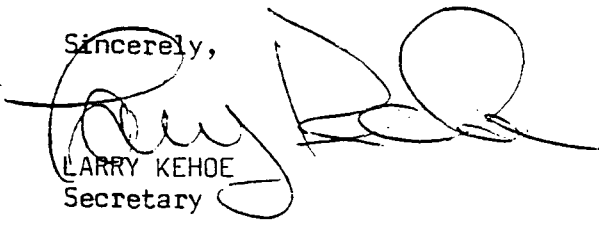
This application constitutes a complete State submission under Section 1425 and includes all the following elements:

- a. Letter from the Governor
- b. Program Description
- c. Statement of Legal Authority *(with new pages 6-7)*
- d. Copies of Pertinent Statutes and Regulations
- e. Copies of Pertinent State Forms
- f. A signed copy of a Memorandum of Agreement *(with addendum = 1)*

The Oil Conservation Division of this Department will continue to regulate injection activities associated with oil and gas production after primacy status has been granted. We look forward to continued association with the EPA in carrying out the critical task of protecting New Mexico's fresh underground water from pollution.

Thank you for your consideration of this application.

Sincerely,


LARRY KEHOE
Secretary

LK/pc



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

November 6, 1981

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Dick Whittington, Regional Administrator
USEPA Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Whittington:

Based upon Headquarters Comments dated November 3, 1981, on New Mexico's Primacy Application, the Division hereby submits the following clarification, point by point.

Issues

- (1) The legal certificate has been revised to satisfy the expressed concerns and is attached hereto. Please insert pages numbers 6 and 7 in place of those originally submitted September 15, 1981. Page 8 should now be deleted.
- (2) The Division is not requesting primary enforcement authority over Indian lands in New Mexico. The Division is agreeable to discussing an MOA with EPA Region VI concerning Indian lands.
- (3) The Division aquifer exemption program as agreed to in the MOA with Region VI meets the requirements of the Section 1425 guidance and 40 CFR Part 146.04. This issue evidently arises concerning the aquifer exemption discussion in the program description. I reiterate here that aquifer exemptions subsequent to program approval will be sent to EPA. Forty-five days will be provided for disapproval by the Administrator of any such exemption. Any such disapproval shall include the reasons therefor.
- (4) That the words higher quality as used in Rule 701 D 3 anticipate injection of naturally occurring produced brines which have TDS and major constituent levels less than the native fluids with no additives in the injected stream.
- (5) The word "variances" used as in the heading at "10" on page 26 of the application was used erroneously and should have stated "exemptions." The word(s) Variance(s), wherever found throughout the primacy application should be amended to read exemption(s).

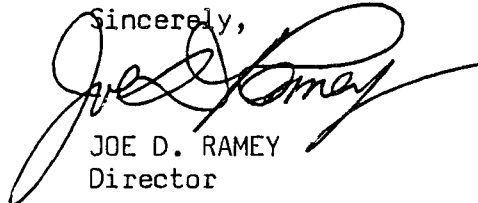
Page 2
Letter to Dick Whittington
November 6, 1981

The end result of the exception process will be to permit non-standard activities, equipment, or processes which recognize unusual or unique conditions without endangering underground sources of drinking water.

The Division will accept the clarification in the two foregoing paragraphs in a revised MOA.


- (6) The primacy application fully discusses the manner in which the Division and the Geological Survey cooperate in UIC permitting and subsequent activities. In deferral, the requirements, actions, or policies which prevail are those which may be considered more rigorous, or equivalent but different, and which in a given situation will result in accomplishment of the common goal of protection of USDWS to an equal or greater degree.
- (7) For purposes of preventing endangerment to underground sources of drinking water under this program, the term "fresh water" and the term "USDW", as previously defined in the MOA, are equivalent.

Sincerely,



JOE D. RAMEY
Director

As to legal content:



W. PERRY PEARCE
Assistant Attorney General



STATE OF NEW MEXICO

OFFICE OF THE GOVERNOR

SANTA FE

87503

BRUCE KING
GOVERNOR

September 3, 1981

Ms. Frances Phillips
Acting Regional Administrator (6A)
United States Environmental Protection Agency
Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Ms. Phillips:

Herewith is transmitted the State of New Mexico's official request for approval of its primacy application for the operation of a Class II Underground Injection Control Program as authorized by Part C, Section 1425 of the Safe Drinking Water Act, Public Law 93-523 as amended.

This application contains all those elements required by the United States Environmental Protection Agency and the Act and hereby affirms the State of New Mexico's willingness to carry out the program described herein through the Oil Conservation Division of the New Mexico Energy and Minerals Department which by this letter is so designated as the jurisdictional agency to implement such program of regulation.

The Oil Conservation Division (OCD) has the statutory authority, available expert personnel and the fiscal capabilities necessary to carry out such a program of regulation of those wells in New Mexico which inject fluids for the purposes of enhanced recovery of oil or gas, the storage of hydrocarbons and the disposal of fluids brought to the surface in connection with the production of oil and gas.

A similar program has been carried out by the OCD under State law for many years. During the three years since the beginning of the federal UIC Program, the State program has been enhanced to the degree that we feel completely confident in the OCD's ability to effectively protect the State's vital fresh ground water from pollution by oil and gas related fluid injection processes.

Page 2
Letter to Ms. Frances Phillips
September 3, 1981

I do hereby request that the State of New Mexico be granted primacy over the Class II Underground Injection Control Program provided for in Section 1425 of the Safe Drinking Water Act.

I confidently await a favorable decision allowing New Mexico this primary enforcement authority status.

Sincerely,

A handwritten signature in cursive script that reads "Bruce King".

BRUCE KING
Governor

BK/lk

CLASS II DEMONSTRATION

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MEMORANDUM OF AGREEMENT	
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STATEMENT OF LEGAL AUTHORITY	
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OCD INJECTION RELATED FORMS	
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RULES, REGULATIONS AND STATUTES	
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NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

UNDERGROUND INJECTION CONTROL
PROGRAM

CLASS II DEMONSTRATION

Submitted to:

U. S. ENVIRONMENTAL PROTECTION AGENCY

September 15, 1981

PROGRAM DESCRIPTION

a. Program structure, coverage and scope.

1. Background

The New Mexico Oil Conservation Commission was created in 1935.

The Act creating the Commission gave it three broad areas of responsibility:

1. The prevention of waste of oil and natural gas.
2. The protection of correlative rights.
3. The protection of fresh water.

To protect fresh water, current regulations prohibit injection into any aquifer containing ground water with a total dissolved solids concentration of 10,000 mg/l or less which is not an exempted aquifer.

Subsurface injection of fluids began in New Mexico almost thirty years ago with the injection of produced salt water back into oil producing zones. The Commission regulated these operations from their beginning.

In a 1977 state government reorganization, the duties of the Commission were transferred to the Oil Conservation Division (OCD) which was created as part of the new Energy and Minerals Department. The Commission, whose members are the Oil Conservation Division Director, the State Geologist, and the State Land Commissioner, continues to hear oil and gas cases on appeal, or in the first instance if they are judged to be of sufficient importance. The Oil Conservation Division now regulates all oil, gas, CO₂ and geothermal drilling, production, injection, storage, transportation, treating, refining, and associated waste disposal operations throughout the state.

2. OCD Organization

The OCD includes a central administrative office in Santa Fe and four District offices. Districts I and II encompass the producing counties in the southeast where most injection takes place. District III includes the producing

counties in the northwest. District IV, which includes most of the remaining counties, has its headquarters at the main office in Santa Fe. (See Exhibit I - District Map.) Sixty people are employed by the OCD in its four offices, (See Exhibit II - Table of Organization for a listing of employees' distribution between offices and for job titles.)

Complete well records for each District are maintained at the District offices and well records for the entire state are located in Santa Fe. The data processing section in Santa Fe compiles the drilling, production, injection, disposal, transportation, and processing data submitted by operators and refiners and publishes extensive summaries of oil and gas activities, including injection.

The Division budget for the state fiscal year which began July 1, 1981 is \$1,884,800 which includes a projected \$157,000 in federal UIC funds.

3. Class II Injection Wells

Injection in connection with oil and gas operations is taking place at present in the San Juan Basin in the northwest quadrant of the state (District III) and in the Permian Basin in the southeast quadrant (Districts I and II). There are no Class II injection wells in District IV at the present time.

At the beginning of 1981 there were 3,586 active Class II wells included in secondary recovery and pressure maintenance projects. Of these wells, 3,209 are located in the southeast and 377 in the northwest. Salt water and fresh water are the primary fluids injected. Some treated effluent from municipal sewage plants is also injected. Natural gas is injected to maintain pressure in some wells and large scale injection of CO₂ for tertiary recovery is anticipated in a few years.

Other Class II wells included, in January, 247 active salt water disposal wells in the southeast and 16 in the northwest. In addition, there are 19 LPG storage wells located in the southeast.

The waterflood and pressure maintenance injection well inventory for the UIC program has been completed through 1979. Listed in the inventory are 395 active and inactive or abandoned water flood and pressure maintenance projects which include 3680 injection wells and 4436 active producing wells. Injection volumes for 1979 totalled 226,034,524 barrels of water and 16,838,675 mcf. of gas. Injection volumes for salt water disposal wells in 1980 totalled 138,662,464 barrels.

4. Statutory Authority for the UIC Program

Primary authority for the regulation of Class II wells is vested in the Division by the Oil and Gas Act (Section 70-2-1 through 70-2-36, New Mexico Statutes Annotated, 1978 Compilation). Many of the provisions of the Act refer to the prevention of waste of oil and gas. In many cases, however, their enforcement also serves to protect underground sources of drinking water. As outlined in the Statement of Legal Authority, a number of provisions of Section 70-2-12 confer specific authority for regulating the construction and operation of injection wells and the protection of ground water. Section 70-2-11 (A) authorizes the Division to "make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereon." Under this provision, after public notice and hearing the Division has adopted Rules for the construction and operation of injection wells.

The Rules contained in Section I - SECONDARY RECOVERY, PRESSURE MAINTENANCE, SALT WATER DISPOSAL, AND UNDERGROUND STORAGE specify the requirements for obtaining permits to inject, casing and cementing requirements, operation and maintenance, testing and monitoring, plugging and abandonment, and reporting requirements.

Rule 701. A. PERMIT FOR INJECTION REQUIRED specifies that "The injection of gas, air, water, or any other medium into any reservoir for the purpose of maintaining reservoir pressure or for the purpose of secondary or other enhanced

recovery or for storage or the injection of water into any formation for the purpose of water disposal shall be permitted only by order of the Division after notice and hearing, unless otherwise provided herein."

Other Rules Sections entitled MISCELLANEOUS RULES, DRILLING, ABANDONMENT AND PLUGGING OF WELLS, REPORTS, RULES ON PROCEDURE, AND RULES ON ADMINISTRATION contain Rules which are applicable to both production and injection wells.

Specific rules are referred to in appropriate sections of this description.

5. UIC Program

Under Division Rule 701-A, permits for new secondary recovery and pressure maintenance projects are granted by Division Order only after public notice and hearing. Most salt water disposal wells are also approved after a hearing. Exceptions to the hearing requirement for water flood expansions, some salt water disposal wells, and storage wells are spelled out in 701-B through G. Administrative approval without a hearing can be granted if the proposed wells meet the requirements of these sections.

Before injection can be started in any well, a mechanical integrity test of the well must be conducted. Division Field Inspectors witness most such tests.

Operators of injection wells are required to keep accurate records and file monthly reports of the volume of fluids injected and injection pressures. Operators of LPG storage wells file annual reports.

Yearly bradenhead tests are currently conducted on almost all injection wells to assure their continuing mechanical integrity. Field Inspectors witness these tests in most cases. Wells found to be defective must be repaired by the operators or plugged under Division supervision.

When drinking water wells become contaminated by salt water or other contaminants, test wells are drilled and water samples analyzed to determine the contamination source. To date such studies have indicated that a defective injection well was the probable cause of contamination in only one instance.

When Rule violations or violations of the Orders permitting injection operations are encountered, Field Inspectors and District Supervisors contact the operator(s) directly or by letter and require that the necessary repairs or changes in procedures be made. The Division Director will contact the operator(s) in cases of serious or persistent violations. Legal action seeking fines may be taken by the Director against operators for repeated or serious violations.

Each District submits a monthly report of its UIC activities to the Santa Fe office. The reports list the number of wells inspected, the types of tests conducted, the number and types of problems encountered, and the enforcement actions taken. These reports are summarized in semi-annual reports to EPA.

Most Division staff members devote some, or in some cases, most of their time to UIC activities. In FY 80, twenty-seven of the thirty-one employees in Santa Fe devoted an average of 15.17 per cent of their time to UIC work. In the three District offices, twenty-six of the twenty-seven employees devoted an average of 23.65 per cent of their time to UIC work. The higher percentage in the Districts reflects the large amount of time spent by Field Inspectors inspecting and testing injection and related production wells.

Program Description

b. Permitting Process

1. Application and Hearing Requirements

Prior to beginning injection, all injection wells and injection projects must receive a permit to inject by an order of the Division. Such orders (permits) are issued by the Director after public notice and hearing or by administrative procedure as specified in Rule 701., as follows:

RULE 701. INJECTION OF FLUIDS INTO RESERVOIRS

A. Permit for Injection Required

The injection of gas, liquefied petroleum gas, air, water, or any other medium into any reservoir for the purpose of maintaining reservoir pressure or for the purpose of secondary or other enhanced recovery or for storage or the injection of water into any formation for the purpose of water disposal shall be permitted only by order of the Division after notice and hearing, unless otherwise provided herein.

B. Method of Making Application

1. Applications for authority for the injection of gas, liquefied petroleum gas, air, water or any other medium into any formation for any reason, including but not necessarily limited to the establishment of or the expansion of water flood projects, enhanced recovery projects, pressure maintenance projects, and salt water disposal, shall be by submittal of Division Form C-108 complete with all attachments.
2. The applicant shall furnish, by certified or registered mail, a copy of the application to the owner of the surface of the land on which each injection or disposal well is to be located and to each leasehold operator within one-half mile of the well.

3. Administrative Approval

If the application is for administrative approval rather than for a hearing, it must also be accompanied by a copy of a legal publication published by the applicant in a newspaper of general circulation in the county in which the proposed injection well is located. (The details required in such legal notice are listed on Side 2 of Form C-108.)

No application for administrative approval may be approved until 15 days following receipt by the Division of Form C-108 complete with all attachments including evidence of mailing as required under paragraph 2 above and proof of publication as required by paragraph 3 above.

If no objection is received within said 15-day period, and a hearing is not otherwise required, the application may be approved administratively.

C. Hearings

If a written objection to any application for administrative approval of an injection well is filed within 15 days after receipt of a complete application, or if a hearing is required by these rules or deemed advisable by the Division Director, the application shall be set for hearing and notice thereof given by the Division.

D. Salt Water Disposal Wells

1. The Division Director shall have authority to grant an exception to the requirements of Rule 701-A for water disposal wells only, without notice and hearing, when the waters to be disposed of are mineralized to such a degree as to be unfit for domestic, stock, irrigation, or other general use, and when said waters are to be disposed of into a formation older than Iriassic (Lea County only) which is nonproductive of oil or gas within a radius of two miles from the proposed injection well, and provided no objections are received pursuant to Rule 701-B(3).
2. Disposal will not be permitted into zones containing waters having total dissolved solids concentrations of 10,000 mg/l or less except after notice and hearing, provided however, that the Division may establish exempted aquifers for such zones wherein such injection may be approved administratively.
3. Notwithstanding the provisions of paragraph 2. above, the Division Director may authorize disposal into such zones if the waters to be disposed of are of higher quality than the native water in the disposal zone.

E. Pressure Maintenance Projects

1. Pressure maintenance projects are defined as those projects in which fluids are injected into the producing horizon in an effort to build up and/or maintain the reservoir pressure in an area which has not reached the advanced or "stripper" state of depletion.
2. All applications for establishment of pressure maintenance projects shall be set for hearing. The project area and the allowable formula for any pressure maintenance project shall be fixed by the Division on an individual basis after notice and hearing.
3. Pressure maintenance projects may be expanded and additional wells placed on injection only upon authority from the Division after notice and hearing or by administrative approval.

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for the conversion to injection of additional wells within a project area provided that any such well is necessary to develop or maintain efficient pressure maintenance within such project and provided that no objections are received pursuant to Rule 701-B(3).

F. Water Flood Projects

1. Water flood projects are defined as those projects in which water is injected into a producing horizon in sufficient quantities and under sufficient pressure to stimulate the production of oil from other wells in the area, and shall be limited to those areas in which the wells have reached an advanced state of depletion and are regarded as what is commonly referred to as "stripper" wells.
2. All applications for establishment of water flood projects shall be set for hearing.

The project area of a water flood project shall comprise the proration units owned or operated by a given operator upon which injection wells are located plus all proration units owned or operated by the same operator which directly or diagonally offset the injection tracts and have producing wells completed on them in the same formation; provided however, that additional proration units not directly nor diagonally offsetting an injection tract may be included in the project area if, after notice and hearing, it has been established that such additional units have wells completed thereon which have experienced a substantial response to water injection.

3. The allowable assigned to wells in a water flood project area shall be equal to the ability of the wells to produce and shall not be subject to the depth bracket allowable for the pool nor to the market demand percentage factor.

Nothing herein contained shall be construed as prohibiting the assignment of special allowables to wells in buffer zones after notice and hearing. Special allowables may also be assigned in the limited instances where it is established at a hearing that it is imperative for the protection of correlative rights to do so.

4. Water flood projects may be expanded and additional wells placed on injection only upon authority from the Division after notice and hearing or by administrative approval.

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for conversion to injection of additional wells provided that any such well is necessary to develop or maintain thorough and efficient waterflood injection for any authorized project and provided that no objections are received pursuant to Rule 701-B(3).

G. Storage Wells

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for the underground storage of liquafied petroleum gas or liquid hydrocarbons in secure caverns within massive salt beds, and provided no objections are received pursuant to Rule 701-B(3).

In addition to the filing requirements of Rule 701-B, the applicant for approval of a storage well under this rule shall file the following:

1. With the Division Director:
 - (a) A plugging bond in accordance with the provisions of Rule 101;
2. With the appropriate district office of the Division in TRIPLICATE:
 - (a) Form C-101, Application for Permit to drill, Deepen, or Plug Back;
 - (b) Form C-102, Well Location and Acreage Dedication Plat; and
 - (c) Form C-105, Well Completion or Recompletion Report and Log.

As indicated in Rule 701.B. above, all applicants for permits to inject must submit Division Form C-108, complete with all attachments, signed by the applicant or his responsible employee, and indicate whether or not the application qualifies for administrative approval in the judgement of the applicant. Information on each well proposed for injection, as well as information on all other wells in the one-half mile area of review, and proof of notice and certification, must be submitted on Form C-108, which follows:

Program Description - follows p. 8

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: _____
Address: _____
Contact party: _____ Phone: _____
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☐ no
If yes, give the Division order number authorizing the project _____.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: _____ Title: _____
- Signature: _____ Date: _____
- If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Under the provisions of Rule 701.C. through 701.G., the Director may grant an exception to the hearing requirement of 701.A. if he considers it advisable to do so and no objection is received within fifteen days. Under these Rules, if an application is judged to be complete and no objections are received during the fifteen day waiting period, the Director may issue an administrative order approving or denying the applicant a permit to inject.

If the application does not qualify under the Rules for administrative approval, or if an objection is received, the case is set for hearing under the provisions of Rules in Section N, as follows:

N - RULES ON PROCEDURE

RULE 1201. NECESSITY FOR HEARING

Except as provided in some general rule herein, before any rule, regulation or order, including revocation, changes, renewal or extension thereof, shall be made by the Division, a public hearing before the Commission or a legally appointed Division Examiner shall be held at such time and place as may be prescribed by the Division.

RULE 1202. EMERGENCY ORDERS

Notwithstanding any other provision of these rules, in case an emergency is found to exist by the Division, which, in its judgment, requires the making of a rule, regulation, or order without a hearing having first been had or concluded, such emergency rule, regulation, or order when made by the Division shall have the same validity as if a hearing with respect to the same had been held before the Division after due notice. Such emergency rule, regulation, or order shall remain in force no longer than 15 days from its effective date, and in any event, it shall expire when the rule, regulation, or order made after due notice and hearing with respect to the subject matter of such emergency rule, regulation, or order becomes effective.

RULE 1203. METHOD OF INITIATING A HEARING

The Division upon its own motion, the Attorney General on behalf of the State, and any operator or producer, or any other person having a property interest may institute proceedings for a hearing. If the hearing is sought by the Division it shall be on motion of the Division and if by any other person it shall be by application. The application shall be in triplicate and shall state (1) the name of the applicant, (2) the name or general description of the common source or sources of supply or the area affected by the order sought, (3) briefly the general nature of the order, rule, or regulation sought, and (4) any other matter required by a particular rule or rules, or order of the Division. The application shall be signed by the person seeking the hearing or by his attorney.

When conditions are such as to require verbal application to place a matter for hearing on a given docket, the Division will accept such verbal application in order to meet publishing deadlines. However, if written application, filed in accordance with the procedures outlined above, has not been received by the Division's Santa Fe office at least ten days before the date of the hearing, the case will be dismissed.

RULE 1204. METHOD OF GIVING LEGAL NOTICE FOR HEARING

Notice of each hearing before the Commission and notice of each hearing before a Division Examiner shall be given by personal service on the person affected or by publication once in a newspaper of general circulation published at Santa Fe, New Mexico, and once in a newspaper of general circulation published in the county or each of the counties, if there be more than one, in which any land, oil, or gas, or other property which may be affected is situated.

RULE 1205. CONTENTS OF NOTICE OF HEARING

Such notice shall be issued in the name of "The State of New Mexico" and shall be signed by the Director of the Division, and the seal of the Commission shall be impressed thereon.

The notice shall specify whether the case is set for hearing before the Commission or before a Division Examiner and shall state the number and style of the case and the time and place of hearing and shall briefly state the general nature of the order or orders, rule or rules, regulation or regulations to be promulgated or effected. The notice shall also state the name of the petitioner or applicant, if any, and unless the contemplated order, rule, or regulation is intended to apply to and affect the entire state, it shall specify or generally describe the common source or sources of supply which may be affected by such order, rule, or regulation.

RULE 1206. PERSONAL SERVICE OF NOTICE

Personal service of the notice of hearing may be made by any agent of the Division or by any person over the age of 18 years in the same manner as is provided by law for the service of summons in civil actions in the district courts of this state. Such service shall be complete at the time of such personal service or on the date of publication, as the case may be. Proof of service shall be by the affidavit of the person making personal service or of the publisher of the newspaper in which publication is had. Service of the notice shall be made at least 10 days before the hearing.

RULE 1207. PREPARATION OF NOTICES

After a motion or application is filed with the Division the notice or notices required shall be prepared by the Division and service and publication thereof shall be taken care of by the Division without cost to the applicant.

RULE 1208. FILING PLEADINGS: COPY DELIVERED TO ADVERSE PARTY OR PARTIES

When any party to a hearing files any pleading, plea, or motion of any character (other than application for hearing) which is not by law or by these rules required to be served upon the adverse party or parties, he shall at the same time either deliver or mail to the adverse party or parties who have entered their appearance therein, or their respective attorneys of record, a copy of such pleading, plea, or motion. For the purposes of these rules, an appearance of any interested party shall be made either by letter addressed to the Division or in person at any proceeding before the Commission or before an Examiner, with notice of such appearance to the parties from whom such pleadings, pleas, or motions are desired.

RULE 1209. CONTINUANCE OF HEARING WITHOUT NEW SERVICE

Any hearing before the Commission or an Examiner held after due notice may be continued by the person presiding at such hearing to a specified time and place without the necessity of notice of the same being again served or published. In the event of any continuance, a statement thereof shall be made in the record of the hearing which is continued.

RULE 1210. CONDUCT OF HEARINGS

Hearings before the Commission or Examiner shall be conducted without rigid formality. A transcript of testimony shall be taken and preserved as a part of the permanent record of the Division. Any person testifying in response to a subpoena issued by the Commission or any member thereof, or the authorized representative of the Division Director, and any person seeking to testify in support of an application or motion or in opposition thereto shall be required to do so under oath. However, relevant unsworn comments and observations by any interested party will be designated as such and included in the record. Comments and observations by representatives of operators' committees, the United States Geological Survey, the United States Bureau of Mines, the New Mexico Bureau of Mines, and other competent persons are welcomed. Any Examiner legally appointed by the Division Director may conduct such hearings as may be referred to such Examiner by the Director.

RULE 1211. POWER TO REQUIRE ATTENDANCE OF WITNESSES AND PRODUCTION OF EVIDENCE

The Commission or any member thereof, or the authorized representative of the Division Director has statutory power to subpoena witnesses and to require the production of books, papers, and records in any proceeding before the Commission or Division. A subpoena will be issued for attendance at a hearing upon the written request of any person interested in the subject matter of the hearing. In case of the failure of a person to comply with the subpoena issued, an attachment of the person may be issued by the district court of any district in the state, and such court has powers to punish for contempt. Any person found guilty of swearing falsely at any hearing may be punished for contempt.

RULE 1212. RULES OF EVIDENCE

Full opportunity shall be afforded all interested parties at a hearing to present evidence and to cross-examine witnesses. In general, the rules of evidence applicable in a trial before a court without a jury shall be applicable, provided that such rules may be relaxed, where, by so doing, the ends of justice will be better served. No order shall be made which is not supported by competent legal evidence.

RULE 1213. EXAMINERS' QUALIFICATIONS AND APPOINTMENT

The Division Director shall, by ex parte order, designate and appoint not more than four individuals to be examiners. Each Examiner so appointed shall be a member of the staff of the Division, but no Examiner need be a full time employee of the Division. The Director may, by ex parte order, designate and appoint a successor to any person whose status as an Examiner is terminated for any reason. Each individual designated and appointed as an Examiner must have at least six years practical experience as a geologist, petroleum engineer or licensed lawyer, or at least two years of such experience and a college degree in geology, engineering, or law; provided however, that nothing herein contained shall prevent any member of the Commission from being designated as, or serving as, an Examiner.

RULE 1214. REFERRAL OF CASES TO EXAMINERS

The Division Director may refer any matter or proceeding to any legally designated and appointed Examiner for hearing in accordance with these rules. The Examiner appointed to hear any specific case shall be designated by name.

RULE 1215. EXAMINER'S POWER AND AUTHORITY

The Division Director may, by ex parte order, limit the powers and duties of the Examiner in any particular case to such issues or to the performance of such acts as the Director deems expedient; however, subject only to such limitations as may be ordered by the Director, the Examiner to whom any matter or proceedings is referred under these rules shall have full authority to hold hearings on such matter or proceeding in accordance with and pursuant to these rules. The Examiner shall have the power to regulate all proceedings before him and to perform all acts and take all measures necessary or proper for the efficient and orderly conduct of such hearing, including the swearing of witnesses, receiving of testimony and exhibits offered in evidence subject to such objections as may be imposed, and shall cause a complete record of the proceedings to be made and transcribed and shall certify same to the Director as hereinafter provided.

RULE 1216. HEARINGS WHICH MUST BE HELD BEFORE COMMISSION

Notwithstanding any other provisions of these rules, the hearing on any matter shall be held before the Commission (1) if it is a hearing de novo, or (2) if the Division Director in his discretion desires the Commission to hear the matter.

RULE 1217. EXAMINER'S MANNER OF CONDUCTING HEARING

An Examiner conducting a hearing under these rules shall conduct himself as a disinterested umpire.

RULE 1218. REPORT AND RECOMMENDATIONS, EXAMINER'S HEARINGS

Upon the conclusion of any hearing before an Examiner, the Examiner shall promptly consider the proceedings in such hearing, and based upon the record of such hearing the Examiner shall prepare his written report and recommendations for the disposition of the matter of proceeding by the Division. Such report and recommendations shall either be accompanied by a proposed order or shall be in the form of a proposed order, and shall be submitted to the Division Director with the certified record of the hearing.

RULE 1219. DISPOSITION OF CASES HEARD BY EXAMINERS

After receipt of the report and recommendations of the Examiner, the Division Director shall enter the Division's order disposing of the matter or proceeding.

RULE 1220. DE NOVO HEARING BEFORE COMMISSION

When any order has been entered by the Division pursuant to any hearing held by an Examiner, any party adversely affected by such order shall have the right to have such matter or proceeding heard de novo before the Commission, provided that within 30 days from the date such order is rendered such party files with the Division a written application for such hearing before the Commission. If such application is filed, the matter or proceeding shall be set for hearing before the Commission at the first available hearing date following the expiration of fifteen days from the date such application is filed with the Division. Any person affected by the order or decision rendered by the Commission after hearing before the Commission may apply for rehearing pursuant to and in accordance with the provisions of Rule 1222 and said Rule 1222 together with the law applicable to rehearing and appeals in matters and proceedings before the Commission shall thereafter apply to such matter or proceeding.

RULE 1221. NOTICE OF COMMISSION AND DIVISION ORDERS

Within ten days after any order, including any order granting or refusing rehearing, or order following rehearing, has been rendered, a copy of such order shall be mailed by the Division to each person or his attorney of record who has entered his appearance of record in the matter of proceeding pursuant to which such order is rendered.

RULE 1222. REHEARINGS

Within 20 days after entry of any order or decision of the Commission any person affected thereby may file with the Division an application for rehearing in respect of any matter determined by such order or decision, setting forth the respect in which such order or decision is believed to be erroneous. The Commission shall grant or refuse any such application in whole or in part within 10 days after the same is filed and failure to act thereon within such period shall be deemed a refusal thereof and a final disposition of such application. In the event the rehearing is granted, the Commission may enter such new order or decision after rehearing as may be required under the circumstances.

RULE 1223. CHANGES IN FORMS AND REPORTS

Any change in the forms and reports or rules relating to such forms and reports shall be made only by order of the Commission or Division issued after due notice and hearing.

As stated in Rule 1206, above, notice of hearing, including notice when an administrative application is set for hearing, must be given by personal service or by publication in a newspaper at least ten days before the hearing. In point of fact, all notices for hearing are published in newspapers, and Division instructions to newspapers result in publication of hearing notices, at least twelve days prior to hearings. If this notice should prove insufficient for study of the case and preparation for the hearing, a request for a continuance to a date at least two weeks following the scheduled date will be honored by the Division when such request is made by any affected party.

As stated in Rule 701 and above, applications which qualify for administrative approval under the Rules and which are submitted with the proper proof of mailing and publication (*) can be approved by Administrative Order of the Division fifteen days following receipt of the application unless a written objection has been received. An example of such an Order approving a salt water disposal well is attached as Exhibit III.

As specified in Rule 701.C. above, if a written objection is received within the fifteen day waiting period, such application will not be approved administratively but will be set for hearing. Also, if the Division, in evaluating the application, decides that there are significant issues or concerns relative to the proposed injection which could better be resolved at a public hearing, the application will be set for hearing.

Under Rule 1203 above, hearings may be initiated by "The Division upon its own motion, the Attorney General on behalf of the State, and any operator or producer, or any other person having a property interest...". The Division in adopting this rule has provided the broadest appropriate right to initiate proceedings. The broad mandate of the New Mexico Attorney General, as set forth in Section 8-5-2, NMSA, 1978, states in part:

...the Attorney General shall:

...

J. Appear before local, state and federal courts and regulatory officers, agencies and bodies, to represent and to be heard on behalf of the state when, in his judgement, the public interest of the state requires such action or when requested to do so by the governor; ...

This general power coupled with the specific responsibilities of the Division and the individual self-interests of the producers, operators and other holders of property interests assures that all affected interests can be adequately protected.

As indicated above, Division Rules require that all applications, whether for administrative approval or approval after notice and hearing, must be advertised in newspapers for the information of all interested parties and the general public. An example of such an advertisement placed by the Division prior to a hearing is included as Exhibit IV.

Verbal applications are accepted if the applicant wishes the case to appear on a specific docket for which there is insufficient time to send a completed application to the Santa Fe office prior to the publishing deadline. However, if verbal application is made, Rule 1203 requires that written application be received at least 10 days prior to the hearing or the case will be dismissed. All notice requirements are the same for applications whether made verbally or in writing.

Approximately thirteen days prior to a hearing, a docket describing all cases to be considered is mailed to a list of interested persons. Anyone so desiring is placed on the docket mailing list. An example of a hearing docket is included as Exhibit V.

Following a Division Hearing, the Director issues an order approving or denying the application as specified in Rules 1218. and 1219. above. If the case has

been heard before the Oil Conservation Commission, the Commission will direct the preparation and issuance of an order of approval or denial.

Orders approving applications commonly contain injection pressure restrictions, reporting requirements, tubing and packer requirements for newly drilled injection wells, or other special requirements governing the construction and operation of the well or project. An example of such an order approving a pressure maintenance project is attached as Exhibit VI. Orders denying applications include the findings which resulted in the denial. One recent such Order denying a salt water disposal application is attached as Exhibit VII.

No exceptions are permitted under the Rules to the requirements of Rule 701.B for making application to inject. All complete applications are disposed of by issuance of an administrative order or an order of the Division after notice and hearing. Thus, no injection can take place until a permit to inject has been issued in the form of an administrative order or an order of the Division following a hearing.

In all cases the burden of proof that the proposed injection will not endanger USDW's is upon the operator and not upon the Division or the Director.

A flow chart of the permitting process is included as Exhibit VIII.

2. Construction Requirements

When an Order approving an injection well or project has been issued, the operator submits his plans for the drilling of any required new well or wells on Form C-101 - APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK to the appropriate District office for approval. Form C-102 - WELL LOCATION AND ACREAGE DEDICATION PLAT must also be filed. A description of all proposed operations must be given. Well construction details must meet the requirements of appropriate Rules in Section C - DRILLING and Section I - SECONDARY RECOVERY, ENHANCED RECOVERY, PRESSURE MAINTENANCE, SALT WATER DISPOSAL, AND UNDERGROUND STORAGE. In particular, Rule 106. requires the following:

RULE 106. SEALING OFF STRATA

- (a) During the drilling of any oil well, gas well, injection well, or any other service well, all oil, gas, and water strata above the producing and/or injection horizon shall be sealed or separated in order to prevent their contents from passing into other strata.
- (b) All fresh waters and waters of present or probable value for domestic, commercial, or stock purposes shall be confined to their respective strata and shall be adequately protected by methods approved by the Division. Special precautions by methods satisfactory to the Division shall be taken in drilling and abandoning wells to guard against any loss of artesian water from the strata in which it occurs, and the contamination of artesian water by objectionable water, oil, or gas.
- (c) All water shall be shut off and excluded from the various oil and gas bearing strata which are penetrated. Water shut-offs shall ordinarily be made by cementing casing.

In addition, Paragraph (a) of Rule 107. CASING AND TUBING REQUIREMENTS specifies in part that "Any well drilled for oil or natural gas or for injection shall be equipped with such surface and intermediate casing string and cement as may be necessary to effectively seal off and isolate all water, oil, and gas-bearing strata and other strata encountered in the well down to the casing point....".

In addition, Rule 702. CASING AND CEMENTING OF INJECTION WELLS requires that "Wells used for injection of gas, air, water, or any other medium, into any formation shall be cased with safe and adequate casing or tubing so as to prevent leakage and such casing or tubing shall be so set and cemented to prevent the movement of formation or injected fluid from the injection zone into any other zone or to the surface around the outside of any casing string."

A surety bond to cover the proper plugging and abandonment of the well must have been submitted to the Division and approved, as required by Rule 101, as follows:

RULE 101. PLUGGING BOND

(a) Any person, firm, corporation, or association who has drilled or acquired, is drilling, or proposes to drill or acquire any oil, gas, or service well on privately owned or state owned lands within this state shall furnish to the Division, and obtain approval thereof, a surety bond running to the State of New Mexico, in a form prescribed by the Division, and conditioned that the well be plugged and abandoned in compliance with the rules and regulations of the Division. Such bond may be a one-well plugging bond or a blanket plugging bond. All bonds shall be executed by a responsible surety company authorized to do business in the State of New Mexico.

(b) Blanket plugging bonds shall be in the amount of fifty thousand dollars (\$50,000) conditioned as above provided, covering all oil, gas, or service wells drilled, acquired or operated in this state by the principal on the bond.

One-well plugging bonds shall be in the amounts stated below in accordance with the depth and location of the well:

Chaves, Eddy, Lea, McKinley, Rio Arriba, Roosevelt, Sandoval, and San Juan Counties, New Mexico:

<u>Projected Depth of Proposed Well or Actual Depth of Existing Well</u>	<u>Amount of Bond</u>
Less than 5,000 feet	\$ 5,000
5,000 feet to 10,000 feet	\$ 7,500
More than 10,000 feet	\$10,000

All Other Counties in the State:

<u>Projected Depth of Proposed Well or Actual Depth of Existing Well</u>	<u>Amount of Bond</u>
Less than 5,000 feet	\$ 7,500
5,000 feet to 10,000 feet	\$10,000
More than 10,000 feet	\$12,500

Revised plans for an actively drilling well may be approved by the appropriate District Office of the Division for drilling as much as 500 feet deeper than the normal maximum depth allowed on the well's bond. Any well to be drilled more than 500 feet deeper than the normal depth bracket must be covered by a new bond in the amount prescribed for the deeper depth bracket.

The bond requirement for any intentionally deviated well shall be determined by the well's measured depth, and not its true vertical depth.

(c) Any bond required by this rule is a plugging bond, not a drilling bond, and shall endure until any well drilled or acquired under such bond has been plugged and abandoned and such plugging and abandonment has been approved by the Division, or has been covered by another bond approved by the Division.

(d) Transfer of a property does not of itself release a bond. In the event of transfer of ownership of a well, the appropriate form, C-103 or C-104, properly executed, shall be filed with the District Office of the Division in accordance with Rule 1103 or Rule 1104 by the new owner of the well. The District Office may approve the transfer providing that a new one-well bond covering the well, or a request that the well be covered by the new owners's blanket bond, has been approved by the Santa Fe office of the Division.

Upon approval of the bond and the Form C-103 or C-104, the transferor is released of plugging responsibility for the well, and upon request, the original bond will be released. No blanket bond will be released, however, until all wells covered by the bond have been plugged and abandoned or transferred in accordance with the provisions of this rule.

(e) All bonds shall be filed with the Santa Fe office of the Division, and approval of such bonds, as well as releases thereof, obtained from said office.

(f) All bonds required by these rules shall be conditioned for well plugging and location cleanup only, and not to secure payment for damages to livestock, range, water, crops, tangible improvements, nor any other purpose.

The District Supervisors review the applications and approve them if they meet the Rule requirements for ground water protection and other requirements. Orders approving injection projects now require the operators to notify the District Supervisor when injection well completion operations are taking place so that inspections can be made by District Field Inspectors if deemed necessary to assure compliance with the permit and appropriate rules and regulations.

If the approved injection wells are to be converted producing wells, the operator files a description of his conversion plans on Form C-103. SUNDRY NOTICES AND REPORTS ON WELLS. District Supervisors must approve these plans in the same manner as for new wells.

When work has been completed on both new and converted wells, operators must file a Form C-103 describing exactly what was done and when it was completed.

Rule 704. TESTING AND MONITORING requires in part that "Prior to commencement of injection, wells shall be tested to assure the initial integrity of the casing and the tubing and packer, if used, including pressure testing of the casing-tubing annulus". The operator must advise the Division of the date and time of the test so that it may be witnessed by a Field Inspector.

Rule 705. COMMENCEMENT, DISCONTINUANCE, AND ABANDONMENT OF INJECTION OPERATIONS requires in part that "Immediately upon the commencement of injection operations in any well, the operator shall notify the Division of the date such operation began."

3. Wells on Federal Land

Injection projects and individual injection wells are approved by the Division in the above manner regardless of whether or not the well or wells are to be located on federal land. However, when the Division has issued an order for wells on federal land, operators file intentions to drill or convert wells to injection with the U. S. Geological Survey instead of the Division District Offices. Applications are made on federal forms which are comparable to the

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state's C-101 and C-103; USGS Form 9-331C. APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK (submitted with Division Form C-102. WELL LOCATION AND ACREAGE DEDICATION PLAT); USGS Form 9-330. WELL COMPLETION OR RECOMPLETION REPORT AND LOG.

Rule 4. describes the Division's relationship to the USGS for purposes of regulating well drilling on federal land, as follows:

Rule 4. UNITED STATES GOVERNMENT LEASES

The Division recognizes that all persons drilling on United States Government land shall comply with the United States government regulations. Such persons shall also comply with all applicable state rules and regulations which are not in conflict therewith. Copies of "Application for Permit to Drill, Deepen or Plug Back," (USGS Form No. 9-331C), "Sundry Notices and Reports on Wells," (USGS Form No. 9-331), and "Well Completion or Recompletion Report and Log." (USGS Form No. 9-330), for wells on U. S. Government land shall be furnished by the Division.

Copies of the approved applications and subsequent reports are supplied to the Division by the USGS and these become part of that well file maintained for each injection and production well. The Division inspects well construction procedures for federal wells in the same manner that it does for all other wells.

The Division and the USGS work closely to maintain uniform practices for the regulation of all oil and gas and injection activities for wells throughout the state regardless of land type.

Although the USGS does not require operators to supply a specific well plugging bond, the Division has the authority and funds to plug wells on federal lands if operators cannot be located or cannot be made to do so. The Oil and Gas Reclamation Fund was established by the Oil and Gas Act to provide funds for plugging all wells which cannot be plugged otherwise by operators or by the utilization of bonds.

Section 70-2-38, New Mexico Statutes Annotated, 1978 Compilation, as amended in 1981 by Senate Bill 162, provides in part as follows:

- "A. The Oil and gas reclamation fund shall be administered by the Oil Conservation Division. Expenditures from the fund may be used by the director of the division for the purpose of employing the necessary personnel to survey abandoned wells and to prepare plans for the plugging of abandoned wells which have not been plugged or which have been improperly plugged. The director, as funds become available in the oil and gas reclamation fund, shall reclaim and

properly plug, all abandoned wells in accordance with the provisions of the Oil and Gas Act and the rules and regulations promulgated thereunder. The division may order wells plugged on federal lands on which there are no bonds running to the benefit of the state in the same manner and in accordance with the same procedures as with wells drilled on state and fee land, including utilizing funds from the oil and gas reclamation fund to pay the cost of such plugging.

The reclamation fund is now large enough to provide funds for all required well plugging under this provision of the law for the foreseeable future.

Historically, there is no evidence of any Class II Injection Well ever being operated directly by an agency of the federal government. The traditional pattern has been the granting of oil and gas exploration and production leases to private operators by the federal government. The leaseholders then carry out, or contract to have carried out, all necessary activities, including injection, under the regulatory supervision of both the USGS and the Division. There is no indication that this pattern will vary in the future.

4. Operating Requirements

Injection wells must be maintained and operated as prescribed in the applicable authorizing order and according to the requirements of Rule 703, as follows:

RULE 703. OPERATION AND MAINTENANCE

Injection wells shall be equipped, operated, monitored, and maintained to facilitate periodic testing and to assure continued mechanical integrity which will result in no significant leak in the tubular goods and packing materials used and no significant fluid movement through vertical channels adjacent to the well bore.

Injection projects, including injection wells and producing wells and all related surface facilities shall be operated and maintained at all times in such a manner as will confine the injected fluids to the interval or intervals approved and prevent surface damage or pollution resulting from leaks, breaks, or spills.

Failure of any injection well, producing well, or surface facility, which failure may endanger underground sources of drinking water, shall be reported under the "Immediate Notification" procedure of Rule 116.

Injection well or producing well failures requiring casing repair or cementing are to be reported to the Division prior to commencement of workover operations.

Injection wells or projects which have exhibited failure to confine injected fluids to the authorized injection zone or zones may be subject to restriction of injection volume and pressure, or shut-in, until the failure has been identified and corrected.

In addition to the notice requirements of Rule 703, immediate notification of any major injection well leaks is required under Rule 116 which reads in part:

IMMEDIATE NOTIFICATION. "Immediate Notification" shall be as soon as possible after discovery and shall be either in person or by telephone to the district office of the Division district in which the incident occurs, or if the incident occurs after normal business hours, to the District Supervisor, the Oil and Gas Inspector, or the Deputy Oil and Gas Inspector. A complete written report ("Subsequent Notification") of the incident shall also be submitted in duplicate to the appropriate district office of the Division within ten days after discovery of the incident.

When operators notify the Division of well failures which may endanger underground sources of drinking water, the Division will require tests of such wells to determine the cause of the failure and will order the operator to make the necessary repairs. Depending upon the cause of the problem the operator may be requested to shut-in the well or wells. If necessary, an emergency order requiring that specified wells be shut-in may be issued under the provisions of Rule 1202, included above. Should an operator decline to abide by Division requests or orders, a court injunction can be obtained denying permission for further injection, requiring that the well be shut-in or granting other relief. No such actions have been required to date as operators have complied with Division requests for corrective action.

When additional work is planned on a well, or there is to be any significant change in its status, Form C-103. SUNDRY NOTICES AND REPORTS ON WELLS must be filed in advance with the District Supervisor and Division approval obtained prior to commencing the work. A report of the work's completion must also be filed on Form C-103 as specified in Rule 1103, as follows:

RULE 1103. SUNDRY NOTICES AND REPORTS ON WELLS (Form C-103)

Form C-103 is a dual purpose form to be filed with the appropriate District Office of the Division to obtain Division approval prior to commencing certain operations and also to report various completed operations.

A. Form C-103 as a Notice of Intention

Form C-103 shall be filed in TRIPLICATE by the operator and approval obtained from the Division prior to:

- (1) Effecting a change of plans from those previously approved on Form C-101 or Form C-103.
- (2) Altering a drilling well's casing program or pulling casing or otherwise altering an existing well's casing installation.
- (3) Temporarily abandoning a well.
- (4) Plugging and abandoning a well.
- (5) Performing remedial work on a well which, when completed, will affect the original status of the well. (This shall include making new perforations in existing wells or squeezing old perforations in existing wells, but is not applicable to new wells in the process of being completed nor to old wells being deepened or plugged back to another zone when such re-completion has been authorized by an approved Form C-101, Application for Permit to Drill, Deepen, or Plug Back, nor to acidizing, fracturing, or cleaning out previously completed wells, nor to installing artificial lift equipment.)

In the case of well plugging operations, the Notice of Intention shall include a detailed statement of the proposed work, including plans for shooting and pulling casing, plans for mudding, including weight of mud, plans for cementing, including number of sacks of cement and depths of plugs, and the time and date of the proposed plugging operations. If not previously filed, a complete log of the well on Form C-105 (See Rule 1105) shall accompany the Notice of Intention to plug the well; the bond will not be released until this is complied with.

B. Form C-103 as a Subsequent Report

Form C-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form C-103 is to be used in reporting such completed operations as:

- (1) Commencement of drilling operations
- (2) Casing and cement test
- (3) Altering a well's casing installation
- (4) Temporary abandonment
- (5) Plug and Abandon
- (6) Plugging back or deepening
- (7) Remedial work
- (8) Installation of artificial lifting equipment
- (9) Change in ownership of a drilling well
- (10) Such other operations which affect the original status of the well but which are not specifically covered herein.

Information to be entered on Form C-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form C-103 in TRIPLICATE. Such report shall indicate the hour and the date the well was spudded.

Program Description

Rule 1103 (cont'd.)

(2) Report of Results of Test of Casing and Cement Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in TRIPLICATE on Form C-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 107. The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in TRIPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any and status of surface and downhole equipment, and any other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form C-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other pertinent information. (See Rules 201-204 regarding plugging operations.)

No plugging report will be approved by the Division until the pits have been filled and the location levelled and cleared of junk. It shall be the responsibility of the operator to contact the appropriate District Office of the Division when the location has been so restored in order to arrange for an inspection of the plugged well and the location by a Division representative.

(5) Report of Remedial Work

A report of remedial work performed on a well shall be filed by the operator of the well within 30 days following completion of such work. Said report shall be filed in QUADRUPLICATE on Form C-103 and shall present a detailed account of the work done and the manner in which such work was performed; the daily production of oil, gas, and water both prior to and after the remedial operation; the size and depth of shots; the quantity of sand, crude, chemical or other materials employed in the operation, and any other pertinent information. Among the remedial work to be reported on Form C-103 are the following:

- (a) Report on shooting, fluid fracturing or chemical treatment of a previously completed well
- (b) Report on squeeze job
- (c) Report on setting of liner or packer
- (d) Report of installation of pumping equipment or gas lift facilities
- (e) Report of any other remedial operations which are not specifically covered herein.

(6) Report on Deepening or Plugging Back

A report of deepening or plugging back shall be filed by the operator of the well within 30 days following completion of such operations on any well. Said report shall be filed in QUADRUPLICATE on Form C-103 and shall present a detailed account of the work done and the manner in which such work was performed. If the well is recompleted in the same pool, it shall also report the daily production of oil, gas, and water both prior to and after recompletion. If the well is recompleted in another pool, Form C-104 must also be filed in accordance with Rule 1104.

(7) Report of Change in Ownership of a Drilling Well

A report of change of ownership shall be filed by the new owner of any drilling well within ten days following actual transfer of ownership. Said report shall be filed in TRIPLICATE on Form C-103 and shall include the name and address of both the new owner and the previous owner, the effective date of the change of ownership, and any other pertinent information. No change in the ownership of a drilling well will be approved by the Division unless the new owner has an approved bond in accordance with Rule 101. (Form C-104 shall be used to report transfer of ownership of a completed well; see Rule 1104.)

(8) Other Reports on Wells

Reports on any other operations which affect the original status of the well but which are not specifically covered herein shall be submitted to the Division on Form C-103, in TRIPLICATE, by the operator of the well within ten days following the completion of such operation.

5. Transfer of Permits

Advance notification and approval by the Division of a transfer of ownership of any injection well is required by Rule 708, as follows:

Rule 708. TRANSFER OF AUTHORITY TO INJECT

Authority to inject granted under any order of the Division is not transferable except upon approval of the Division. Approval of transfer of authority to inject may be obtained by filing Form C-104 in accordance with Rule 1104 (5).

The Division may require a demonstration of mechanical integrity prior to authorizing transfer of authority to inject.

Rule 1104. (5) requires the filing of Form C-104 as follows:

- (5) Form C-104 with Sections I, II, III, and VI, completely filled out in QUINTUPLICATE by the operator of the well in the event there is a change of ownership of any producing well, injection well, or disposal well, or a change of transporter (oil, condensate, casinghead gas, or dry gas), a change in pool designation, lease name, or well number, or any other pertinent change in condition of any such well. When filing Form C-104 for change in ownership, the new operator shall file the form in the above manner, and shall give the name and address of the previous as well as the present operator. The Form C-104 will not be approved by the Division unless the new operator has an approved bond in compliance with Rule 101.

A mechanical integrity test is required prior to the transfer of any well which the Division has any reason to believe may not be in a satisfactory operating condition.

6. Modification of Permits.

To modify a permit an operator must submit a Form C-108 as in the case of the original application and must fulfil the Proof of Notice requirements in order to obtain administrative approval for increasing the area of the project, for adding injection wells or for other modifications. If the Division, in evaluating the application, decides that there are issues and concerns which could be better resolved at a public hearing, administrative approval will be denied and the case will be set for hearing if the operator so wishes.

7. Termination of Permits

If significant violations of Orders or Division Rules are discovered, or if changed conditions warrant, the Division, on its own initiative, may set a hearing after public notice to consider whether to rescind an operator's approval for injection.

As discussed in Section 4. above, emergency orders under Rule 1202 may also be issued rescinding injection authority or making other permit modifications. These orders are effective for fifteen days and a public hearing must be scheduled within that period. No such orders have been required to date relative to any injection facility nor have any other hearings been required for purposes of revoking injection permits.

As discussed in d. 5. Cancellation of Authority to Inject, (p.31), Rule 705 automatically terminates the authority to inject after a continuous six-month period of non-injection unless an extension is granted administratively by the Director.

8. Emergency Permits

Under Rule 1202, emergency permits could be issued to permit use of a well for injection purposes for up to fifteen days. While the Division's administrative requirements would be delayed under such a process, the technical requirements would still be observed. In all cases, emergency orders require public notice and hearing within fifteen days and the entry of a new order for any extension (temporary or permanent) of the authority to inject. An example of circumstances which might result in the issuance of such an order are: The failure of an authorized injection well with the threat of a serious loss of production, combined with the availability of a good alternative well for injection. To date no emergency orders authorizing injection have been issued.

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9. Inspection and Entry. Recordkeeping and Reports.

The Division's authority to make physical inspections of injection facilities and to require the keeping of records and making of reports for purposes of assuring that permit conditions are met, and Rules are being followed, is contained in Section 70-2-12 New Mexico Statutes Annotated, 1978 Compilation. Paragraph A of this section says in part, "Included in the power given to the division is the authority to collect data; to make investigations and inspections; to examine properties, leases, papers, books and records;....to provide for the keeping of records and making of reports and for the checking of the accuracy thereof;....". Rules have been adopted after public notice and hearing which specify reporting, record keeping and inspection requirements. These Rules are included and discussed in appropriate sections of this Description.

10. Variances from Programmatic Requirements.

Operators may apply to the Division for temporary or permanent exemption from requirements for such things as corrective action and injection pressure limitations. In one such case an operator was allowed to postpone cementing off the injection zone in a well offsetting a disposal well so long as he regularly monitored the formation to be sure that no migration of fluids was taking place. Such exemptions can be granted administratively unless the Division considers a public hearing on the request to be necessary.

To receive such an exemption the operator must present evidence that the requested variance will not result in ground water contamination through the migration of injection or formation fluids. Such evidence or tests may include but not be limited to:

- (1) Running of cement bond log (s) across suspect intervals;
- (2) Reexamination of well records and identification of erroneous original data; and
- (3) perforating and squeezing attempts that reveal higher cement tops than originally inferred.

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Further, the operator may request waiver of the corrective action requirements on individual wells for reasons such as risk to the well to be corrected (permanent production loss), inability to physically reenter an old well, location of the well at the extreme margins of the area of review, or hydrologic conditions in the area. Such requests are considered on a case by case basis and exceptions are normally accompanied by requirements for more frequent monitoring in the area, including water quality or hydrologic conditions (noise logging opposite the injection interval or completion and use of monitor wells). Such exceptions are usually given only as a last resort after all reasonable efforts have been made to take corrective action. Further, field inspectors may authorize minor deviations in the field under provisions of Rule 1303. Again protection of water and other resources is given paramount consideration when such deviations are given. (Example: relocation of a plug in a well based on field findings or conditions).

c. Operation of Rules

As stated in b. (p.15), "no injection can take place until a permit to inject has been issued in the form of an administrative order or an order of the Division following a hearing". All injection wells, whether in a new project or an expansion of an old one, must be individually listed and applied for on Form C-108 and must be included in an order (permit) approving the application to inject prior to beginning injection. Thus, no approval by rule is possible under Division Rules.

d. Technical Requirements

1. General

The technical requirements for drilling or converting and for maintaining and operating injection wells are contained in both Division Rules and in the provisions of the Division Orders which authorize specific injection projects and wells.

The general requirement that all injection wells must be maintained and operated to assure continued mechanical integrity and in such a manner as to confine injected fluids to the approved intervals is contained in Rule 703, as follows:

RULE 703. OPERATION AND MAINTENANCE

Injection wells shall be equipped, operated, monitored, and maintained to facilitate periodic testing and to assure continued mechanical integrity which will result in no significant leak in the tubular goods and packing materials used and no significant fluid movement through vertical channels adjacent to the well bore.

Injection projects, including injection wells and producing wells and all related surface facilities shall be operated and maintained at all times in such a manner as will confine the injected fluids to the interval or intervals approved and prevent surface damage or pollution resulting from leaks, breaks, or spills.

Failure of any injection well, producing well, or surface facility, which failure may endanger underground sources of drinking water, shall be reported under the "Immediate Notification" procedure of Rule 116.

Injection well or producing well failures requiring casing repair or cementing are to be reported to the Division prior to commencement of workover operations.

Injection wells or projects which have exhibited failure to confine injected fluids to the authorized injection zone or zones may be subject to restriction of injection volume and pressure, or shut-in, until the failure has been identified and corrected.

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Sealing off of strata while drilling is mandated in Rule 106 (See b. 2. Construction Requirements). Casing and Cementing requirements for injection wells are contained in Rules 107 and 702 (see b.2. Construction Requirements). Form C-108 APPLICATION FOR AUTHORIZATION TO INJECT requires applicants for disposal wells to "make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water". (see b.1. Permitting Process for complete Form C-108).

The information provided on Form C-108 is examined at the public hearing and no well or project will be approved after hearing unless the Division Examiner and Division Director are satisfied that the proposed methods of construction and operation meet the above requirements.

2. Area of Review

Form C-108 requires the following attachments relative to the area of review:

- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

The information is examined to determine which wells, if any, in the area of review may be cemented or plugged in such a manner as to permit the possible escape of fluid from the injection zone. When such wells are identified, the Order authorizing the project after notice and hearing specifies that corrective action must be taken on these wells prior to commencing injection. Corrective action may include that proposed by the applicant or that required by the Division.

In lieu of remedial work, operators may conduct tests or present other evidence to the District Supervisor prior to beginning injection to prove that remedial work on specific wells is not required to confine injected fluids in the approved zone.

3. Mechanical Integrity

To assure the initial mechanical integrity of any injection well as defined in Rule 703, an initial test is required under Rule 704, as follows:

"Prior to commencement of injection, wells shall be tested to assure the initial integrity of the casing and the tubing and packer, if used, including pressure testing of the casing-tubing annulus."

Field inspectors witness most such tests and operators report the results on Form C-103. SUNDRY NOTICES AND REPORTS ON WELLS.

Whenever additional tests are deemed necessary to assure that the injected fluids will be confined to the approved zones, the Division requires operators to conduct tracer surveys, noise logs, temperature surveys or other tests on injection wells and other wells in the area of review.

As specified in Rule 703, whenever injection wells exhibit failure to confine injected fluids to the authorized injection zones they may be ordered shut-in until the reason for the failure has been identified and corrected.

Periodic pressure tests of all injection wells are required as discussed in Section e. Monitoring, Inspection, Reporting.

The extensive well test program conducted by the Division since 1975 assures the mechanical integrity of existing wells. This program is discussed extensively in our annual reports to EPA and demonstrates that essentially every injection well in the State will have been tested at least once and witnessed by a Division inspector by the end of this year. Such process includes a review of casing and cementing records.

4. Injection Pressure

Maximum injection pressures are specified in Division Orders authorizing

Program Description

injection. Pressures are limited to a maximum which will not initiate new fractures or propagate existing ones in the confining zone, and will not cause the movement of the fluids into an underground source of drinking water. The Division has established as a general rule a maximum safe surface pressure of 0.2 psi per foot of depth to the top of the injection zone. Operators may seek administrative approval of higher injection pressures by submitting step rate test results, or data from instantaneous shut-in after fracture, which show that the confining strata has a fracture gradient which will support a higher pressure.

Older projects may or may not be subject to pressure limits. The Division's periodic test program has identified projects which should have either pressure or volume restrictions and the same are in place. (See Exhibit IX for a discussion of the effectiveness of the existing state program relating to such projects.)

5. Cancellation of Injection Authority

Rule 705. B. 1. specifies that "Whenever there is a continuous six-month period of non-injection into any injection project, storage project, salt water disposal well, or special purpose injection well, such project or well shall be considered abandoned, and the authority for injection shall automatically terminate ipso facto." Rule 705. B. 2. permits the Division Director, for good cause, to grant an administrative extension or extensions of the authority to inject as an exception to 705. B. 1. Normally such extensions are made prior to the expiration of the six-month period of non-injection. In cases where the lapse has been short, the Director, after reviewing the circumstances, may authorize an extension without a hearing after the six-month period has expired. In other cases where the integrity of the wells may be in question, a new application and hearing would be required and a new order authorizing injection could be issued.

6. Plugging and Abandonment

Rule 101 (included in b.2. Construction Requirements) requires that operators submit to the Division a plugging bond running to the State of New Mexico

prior to the drilling or aquisition of any wells on state or private land. The bond is not released until the well or wells have been properly plugged and the well area has been cleaned up.

Rules 201 - 204, Section D - ABANDONMENT AND PLUGGING OF WELLS, contain the requirements for plugging and abandonment and temporary abandonment, as follows:

D - ABANDONMENT AND PLUGGING OF WELLS

RULE 201. NOTICE

Notice of intention to plug must be filed with the Division by the owner or his agent prior to the commencement of plugging operations on Form C-103, Sundry Notices and Reports on Wells, which notice shall state the name and location of the well and the name of the operator. In the case of a newly completed dry hole, the operator may commence plugging by securing the approval of the Division as to the method of plugging and the time plugging operations are to begin. He shall, however, file the regular notification form.

RULE 202. PLUGGING AND ABANDONMENT

A. PLUGGING

Before any well is abandoned, it shall be plugged in a manner which will permanently confine all oil, gas, and water in the separate strata originally containing them. This operation shall be accomplished by the use of mud-laden fluid, cement and plugs, used singly or in combination as may be approved by the Division. The exact location of abandoned wells shall be shown by a steel marker at least four inches in diameter set in concrete, and extending at least four feet above mean ground level. The name and number of the well and its location (unit letter, section, township, and range) shall be welded, stamped, or otherwise permanently engraved into the metal of the marker. Seismic, core or other exploratory holes drilled to or below sands containing fresh water shall be plugged and abandoned in accordance with the applicable provisions recited above. Permanent markers are not required on seismic holes.

Within thirty days following the completion of plugging operations on any well, a record of the work done shall be filed with the Division in TRIPLICATE, on Form C-103. Such report shall be filed by the owner of the well and shall include the date the plugging operations were begun along with the date the work was completed; a detailed account of the manner in which the work was performed; the depths and lengths of the various plugs set; the nature and quantities of materials employed in plugging operations; the amount, size and depth of all casing left in the hole and the weight of mud employed in plugging the well and any other pertinent information. No plugging report submitted on Form C-103 shall be approved by the Division unless such report specifically states that pits have been filled and the location levelled and cleared of junk. The filing of Form C-105, Well Completion or Recompletion Report and Log is also necessary to obtain Division approval of a plugging report.

It shall be the responsibility of the owner of the plugged well to contact the appropriate District Office of the Division to arrange for an inspection of the plugged well and the location by a Division representative.

B. TEMPORARY ABANDONMENT

No well in this state shall be temporarily abandoned for a period in excess of six months unless a permit for such temporary abandonment has been approved by the Division. Such permit shall be for a period not to exceed one year and shall be requested from the appropriate District Office of the Division by filing Form C-103 in triplicate. No such permit shall be approved unless evidence is furnished that the condition of the well is such as to prevent damage to the producing zone, migration of hydrocarbons or water, the contamination of fresh water or other natural resources, or the leakage of any substance at the surface.

The District Supervisor of the appropriate District Office of the Division shall have authority to grant one extension to the permit for temporary abandonment. Such extension shall not exceed one year and shall be requested in the same manner as the original permit for temporary abandonment. No extension shall be approved unless good cause therefor is shown, and evidence is furnished that the continued condition of the well is as described above.

Upon expiration of the permit for temporary abandonment and any extension thereto, the well shall be put to beneficial use or shall be permanently plugged and abandoned, unless it can be shown to the Division after notice and hearing that good cause exists why the well should not be plugged and abandoned, and a further extension to the temporary abandonment permit should be issued. Prior to issuing such "further extension," the Division may at its option require the operator of the well to post with the Division a one-well plugging bond for the well, in an amount determined by the Division to be satisfactory to meet the particular requirements of the well.

(Rule 202.B cont'd.)

The Division Director shall have the authority to waive the above requirement for notice and hearing and grant further extension to a permit for temporary abandonment in the case of:

- (1) a remote and unconnected commercial gas well or a presently non-commercial gas well which may reasonably be expected to be commercial within the foreseeable future; or
- (2) a well in an oil pool in which secondary recovery operations have, by actual performance, been shown to be commercially feasible, and which well may, with reasonable certainty, be expected to be included in a bona fide secondary recovery project within the foreseeable future.

Prior to issuing such further extension, the Division Director may at his option require the operator of the well to post with the Division a one-well plugging bond for the well, in an amount determined by the Director to be satisfactory to meet the particular requirements of the well.

No "further extension," whether issued by the Division or by the Division Director, shall be of more than two years duration, but may be renewed if circumstances warrant.

C. DRILLING WELLS

When drilling operations on a well have been suspended for 60 days, the well shall be plugged and abandoned unless a permit for temporary abandonment has been obtained for the well in accordance with Section B above.

RULE 203. WELLS TO BE USED FOR FRESH WATER

When the well to be plugged may safely be used as a fresh water well and such utilization is desired by the landowner, the well need not be filled above sealing plug set below the fresh water formation, provided that written agreement for such use shall be secured from the landowner and filed with the Division.

RULE 204. LIABILITY

The owner of any well drilled for oil or gas or for injection, or any seismic, core or other exploratory hole, whether cased or uncased, shall be responsible for the plugging thereof.

In preparing and submitting a plugging program under 201, operators generally follow Division Guidelines for Plugging Programs. (See Exhibit X). District Supervisors utilize the Guidelines to judge the adequacy of the proposed program in determining whether to approve it.

Specific requirements for injection well abandonment are contained in Rule 705., as follows:

RULE 705. COMMENCEMENT, DISCONTINUANCE, AND ABANDONMENT OF INJECTION OPERATIONS

The following provisions shall apply to all injection projects, storage projects, salt water disposal wells and special purpose injection wells:

A. Notice of Commencement and Discontinuance

1. Immediately upon the commencement of injection operations in any well, the operator shall notify the Division of the date such operations began.

2. Within 30 days after permanent cessation of gas or liquefied petroleum gas storage operations or within 30 days after discontinuance of injection operations into any other well, the operator shall notify the Division of the date of such discontinuance and the reasons therefor. No injection well may be temporarily abandoned for a period exceeding six months unless the injection interval has been isolated by use of cement or a bridge plug. The Director of the Division may delay the cement or bridge plug requirements above upon a demonstration that there is a continuing need for such a well, that the well exhibits mechanical integrity, and that continued temporary abandonment will not endanger underground sources of drinking water.
3. Before any injection well is plugged, the operator shall obtain approval for the well's plugging program from the appropriate District Office of the Division in the same manner as when plugging oil and gas wells or dry holes.

B. Abandonment of Injection Operations

1. Whenever there is a continuous six-month period of non-injection into any injection project, storage project, salt water disposal well, or special purpose injection well, such project or well shall be considered abandoned, and the authority for injection shall automatically terminate ipso facto.
2. For good cause shown, the Division Director may grant an administrative extension or extensions of injection authority as an exception to Paragraph 1. above.

If wells have been temporarily abandoned or have defects which cannot be corrected and the Division judges that they may become a threat to underground sources of drinking water, the Division requests the operator to plug such wells. If the operator does not carry out the plugging within a reasonable time, or if the operator is not known, as in the case of very old abandoned wells, the Division will set a forced plugging case for public hearing. Following the issuance of a plugging order resulting from such hearing, the Division will contract to have the well plugged. In the case of bonded wells, the insurance company issuing the bond will pay the plugging costs. In the case of any wells for which there is no bond, plugging costs are paid from the Division's Oil and Gas Reclamation Fund.

Program Description

Sections 70-2-37 and 70-2-38, New Mexico Statutes Annotated, 1978

Compilation, provide for the operation of the Oil and Gas Reclamation Fund,
as follows:

70-2-37 OIL AND GAS RECLAMATION FUND CREATED--DISPOSITION OF FUND.--There is hereby created the "oil and gas reclamation fund". All funds in the oil and gas reclamation fund and the earnings therefrom are appropriated to the energy and minerals department for use by the oil conservation division in carrying out the provisions of the Oil and Gas Act.

70-2-38 OIL AND GAS RECLAMATION FUND ADMINISTERED--PLUGGING WELLS ON FEDERAL LAND--RIGHT OF IDENTIFICATION--ANNUAL REPORT--CONTRACTORS SELLING EQUIPMENT FOR SALVAGE.--

A. The oil and gas reclamation fund shall be administered by the oil conservation division. The director of the division shall cause to be prepared plans for the plugging of abandoned wells which have not been plugged or which have been improperly plugged. The director, as funds become available in the oil and gas reclamation fund, shall reclaim, and properly plug, all abandoned wells in accordance with the provisions of the Oil and Gas Act, and the rules and regulations promulgated thereunder. The division may order wells plugged on federal lands on which there are no bonds running to the benefit of the state in the same manner and in accordance with the same procedures as with wells drilled on state and fee land, including utilizing funds from the oil and gas reclamation fund to pay the cost of such plugging. When the costs of plugging a well drilled on federal mineral leases are paid from the oil and gas reclamation fund, the division is authorized to bring a suit against the operator or the owner of the minerals under the tract, or both, in the district court of the county in which the well is located for indemnification for all costs incurred by the division in plugging said well. Any funds collected pursuant to a judgment in a suit for indemnification brought under the Oil and Gas Act shall be deposited in the oil and gas reclamation fund.

B. The director shall make an annual report to the secretary of energy and minerals, the governor and the legislature on the use of the oil and gas reclamation fund.

C. All contracts for well plugging shall be entered into in accordance with the provisions of the Public Purchases Act. Any contractor employed by the division to plug a well is authorized to sell for salvage the equipment and material which is removed from the well in plugging it.

Operators of wells on federal land submit plugging programs for approval to the USGS. Copies of the approved program are supplied to the Division by the USGS. In preparing plugging programs for federal wells, operators again generally follow the Division Guidelines. At times the Division has prescribed plugging programs deemed necessary to protect ground water regardless of the land type.

For further discussion of well plugging on federal land, see b.3. Wells on Federal Land.

e. Monitoring, Inspection, Reporting.

1. Well inspection and testing.

All newly drilled or converted injection wells must be pressure tested for mechanical integrity prior to commencing injection and at least once every five years thereafter. Rule 704 states these requirements, as follows:

RULE 704. TESTING AND MONITORING

A. Testing

Prior to commencement of injection, wells shall be tested to assure the initial integrity of the casing and the tubing and packer, if used, including pressure testing of the casing-tubing annulus.

At least once every five years thereafter, injection wells shall be tested to assure their continued mechanical integrity. Tests demonstrating continued mechanical integrity shall include the following:

- (a) measurement of annular pressures in wells injecting at positive pressures under a packer or a balanced-fluid seal;
- (b) pressure testing of the casing-tubing annulus for wells injecting under vacuum conditions; and,
- (c) such other tests which are demonstrably effective and which may be approved for use by the Division.

Notwithstanding the test procedures outlined above, the Division may require more comprehensive testing of the injection wells when deemed advisable, including the use of tracer surveys, noise logs, temperature logs, or other test procedures or devices.

In addition, the Division may order special tests to be conducted prior to the expiration of five years if conditions are believed to so warrant. Any such special test which demonstrates continued mechanical integrity of a well shall be considered the equivalent of an initial test for test scheduling purposes, and the regular 5-year testing schedule shall be applicable thereafter.

The injection well operator shall advise the Division of the date and time any initial, 5-year, or special tests are to be commenced in order that such tests may be witnessed.

B. Monitoring

Injection wells shall be so equipped that the injection pressure and annular pressure may be determined at the wellhead and the injected volume may be determined at least monthly.

Injection wells used for storage shall be so equipped that both injected and produced volumes may be determined at any time.

At least twenty-five percent of these pressure tests are witnessed by District Field Inspectors. Inspectors operate under the authority of the Oil and Gas Act which empowers the Division to "make and enforce rules, regulations, and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereof". Rule 1303. DUTIES AND AUTHORITY OF FIELD PERSONNEL states that oil and gas inspectors and other Division personnel "have the authority and duty to enforce the rules and regulations of the Division".

In the eight counties of District I, II, and III where Class II wells presently exist, ten full-time field inspectors schedule and witness annual pressure tests for mechanical integrity on almost all injection wells and many related production wells. As reported on computerized Field Trip summaries during 1980 fifteen Division staff members spent 7656 hours in 1133 days inspecting 11,935 injection and related producing wells, 298 other injection facilities, and took 71 enforcement actions in the field.

In the few cases where tests are not witnessed, operators are required to file results of the tests with the District offices. In addition to pressure tests, inspectors conduct site inspections to assure that Division Rules are being properly followed.

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When tests indicate that wells are defective, operators are instructed to take corrective action. Operators must submit for advance approval a description of the proposed repairs on Form C-103. SUNDRY NOTICES AND REPORTS ON WELLS. In urgent cases when work should begin immediately, telephone approval can be obtained from the Division prior to submission of Form C-103. A report of the work when it is completed must also be submitted on Form C-103. (See Rule 1103 in b.3 Operating Requirements). District inspectors then schedule and witness followup pressure tests to be certain that the corrective action has been successful.

2. Reports of Breaks, Spills, Leaks, etc.

Rule 116 requires operators to report mechanical failures or downhole problems which might endanger fresh water in the following manner:

RULE 116. NOTIFICATION OF FIRE, BREAKS, LEAKS, SPILLS, AND BLOWOUTS

The Division shall be notified of any fire, break, leak, spill, or blowout occurring at any injection or disposal facility or at any oil or gas drilling, producing, transporting, or processing facility in the State of New Mexico by the person operating or controlling such facility.

"Facility," for the purpose of this rule, shall include any oil or gas well, any injection or disposal well, and any drilling or workover well; any pipe line through which crude oil, condensate, casinghead or natural gas, or injection or disposal fluid (gaseous or liquid) is gathered, piped, or transported (including field flow-lines and lead-lines but not including natural gas distribution systems); any receiving tank, holding tank, or storage tank, or receiving and storing receptacle into which crude oil, condensate, injection or disposal fluid, or casinghead or natural gas is produced, received, or stored; any injection or disposal pumping or compression station including related equipment; any processing or refining plant in which crude oil, condensate, or casinghead or natural gas is processed or refined; and any tank or drilling pit or slush pit associated with oil or gas well or injection or disposal well drilling operations or any tank, storage pit, or pond associated with oil or gas production or processing operations or with injection or disposal operations and containing hydrocarbons or hydrocarbon waste or residue, salt water, strong caustics or strong acids, or other deleterious chemicals or harmful contaminants.

Notification of such fire, break, leak, spill, or blowout shall be in accordance with the provisions set forth below:

1. Well Blowouts. Notification of well blowouts and/or fires shall be "immediate notification" described below. ("Well blowout" is defined as being loss of control over and subsequent eruption of any drilling or workover well, or the rupture of the casing, casinghead, or wallhead of any oil or gas well or injection or disposal well, whether active or inactive, accompanied by the sudden emission of fluids, gaseous or liquid, from the well.)

2. "Major" Breaks, Spills, or Leaks. Notification of breaks, spills, or leaks of 25 or more barrels of crude oil or condensate, or 100 barrels or more of salt water, none of which reaches a watercourse or enters a stream or lake; breaks, spills, or leaks in which one or more barrels of crude oil or condensate or 25 barrels or more of salt water does reach a watercourse or enters a stream or lake; and breaks, spills, or leaks of hydrocarbons or hydrocarbon waste or residue, salt water, strong caustics or strong acids, gases, or other deleterious chemicals or harmful contaminants of any magnitude which may with reasonable probability endanger human health or result in substantial damage to property, shall be "immediate notification" described below.

3. "Minor" Breaks, Spills, or Leaks. Notification of breaks, spills, or leaks of 5 barrels or more but less than 25 barrels of crude oil or condensate, or 25 barrels or more but less than 100 barrels of salt water, none of which reaches a watercourse or enters a stream or lake, shall be "subsequent notification" described below.

Program Description

Rule 116 (Cont'd.)

4. Gas Leaks and Gas Line Breaks. Notification of gas leaks from any source or of gas pipe line breaks in which natural or casinghead gas of any quantity has escaped or is escaping which may with reasonable probability endanger human health or result in substantial damage to property shall be "immediate notification" described below. Notification of gas pipe line breaks or leaks in which the loss is estimated to be 1000 or more MCF of natural or casinghead gas but in which there is no danger to human health nor of substantial damage to property shall be "subsequent notification" described below.

5. Tank Fires. Notification of fires in tanks or other receptacles caused by lightning or any other cause, if the loss is, or it appears that the loss will be, 25 or more barrels of crude oil or condensate, or fires which may with reasonable probability endanger human health or result in substantial damage to property, shall be "immediate notification" as described below. If the loss is, or it appears that the loss will be at least 5 barrels but less than 25 barrels, notification shall be "subsequent notification" described below.

6. Drilling Pits, Slush Pits, and Storage Pits and Ponds. Notification of breaks and spills from any drilling pit, slush pit, or storage pit or pond in which any hydrocarbon or hydrocarbon waste or residue, strong caustic or strong acid, or other deleterious chemical or harmful contaminant endangers human health or does substantial surface damage, or reaches a watercourse or enters a stream or lake in such quantity as may with reasonable probability endanger human health or result in substantial damage to such watercourse, stream, or lake, or the contents thereof, shall be "immediate notification" as described below. Notification of breaks or spills of such magnitude as to not endanger human health, cause substantial surface damage, or result in substantial damage to any watercourse, stream, or lake, or the contents thereof, shall be "subsequent notification" described below, provided however, no notification shall be required where there is no threat of any damage resulting from the break or spill.

IMMEDIATE NOTIFICATION. "Immediate Notification" shall be as soon as possible after discovery and shall be either in person or by telephone to the district office of the Division district in which the incident occurs, or if the incident occurs after normal business hours, to the District Supervisor, the Oil and Gas Inspector, or the Deputy Oil and Gas Inspector. A complete written report ("Subsequent Notification") of the incident shall also be submitted in duplicate to the appropriate district office of the Division within ten days after discovery of the incident.

SUBSEQUENT NOTIFICATION. "Subsequent Notification" shall be a complete written report of the incident and shall be submitted in duplicate to the district office of the Division district in which the incident occurred within ten days after discovery of the incident.

CONTENT OF NOTIFICATION. All reports of fires, breaks, leaks, spills, or blowouts, whether verbal or written, shall identify the location of the incident by quarter-quarter, section, township, and range, and by distance and direction from the nearest town or prominent landmark so that the exact site of the incident can be readily located on the ground. The report shall specify the nature and quantity of the loss and also the general conditions prevailing in the area, including precipitation, temperature, and soil conditions. The report shall also detail the measures that have been taken and are being taken to remedy the situation reported.

WATERCOURSE, for the purpose of this rule, is defined as any lake-bed or gully, draw, stream bed, wash, arroyo, or natural or man-made channel through which water flows or has flowed.

In cases of reported injection well failure appropriate corrective action to protect ground water will be required of the operator, or, if necessary, the well or wells will be ordered shut-in or plugged.

Rule 705 (included in d. 6. Plugging and Abandonment) requires notification to the Division of commencement, discontinuance and abandonment of injection operations.

Monthly or annual reports of injection volumes and pressures are required for all injection wells under Rule 706, as follows:

RULE 706. RECORDS AND REPORTS

The operator of an injection well or project for secondary or other enhanced recovery, pressure maintenance, natural gas storage, salt water disposal, or injection of any other fluids shall keep accurate records and shall report monthly to the Division gas or fluid volumes injected, stored, and/or produced as required on the appropriate form listed below:

1. Secondary or Other Enhanced Recovery on Form C-115;
2. Pressure Maintenance on Form C-115 and as otherwise prescribed by the Division;
3. Salt Water Disposal on Form C-120-A;
4. Natural Gas Storage on Form C-131-A; and
5. Injection of other fluids on a form prescribed by the Division.

The operator of a liquefied petroleum gas storage project shall report annually on Form C-131-B, Annual LPG Storage Report.

Additional reporting requirements are contained in Rules 1115 and 1131 as follows:

RULE 1115. OPERATOR'S MONTHLY REPORT (Form C-115)

Operator's Monthly Report, Form C-115 or Form C-115-EDP, shall be filed on each producing lease and each secondary or other enhanced recovery project or pressure maintenance project injection well within the State of New Mexico for each calendar month, setting forth complete information and data indicated on said forms in the order, format, and style prescribed by the Division Director. Oil production from wells which are producing into common storage shall be estimated as accurately as possible on the basis of periodic tests.

The reports on this form shall be filed by the producer as follows:

Original to the Oil Conservation Division at Santa Fe; one copy to the District Office of the Division in which district the lease is located; and one copy to each transporter involved. Each report for each month shall be postmarked not later than the 24th day of next succeeding month. Failure of an operator to file this report in accordance with the provisions of this rule may result in cancellation of Form C-104 for the affected well or wells and/or cancellation of authority to inject.

**RULE 1131. MONTHLY GAS STORAGE REPORT (Form C-131-A)
ANNUAL LPG STORAGE REPORT (Form C-131-B)**

Each operator of an underground natural gas storage project shall report its operation monthly on Form C-131-A. Form C-131-A shall be filed in duplicate (one copy to the appropriate district office) and shall be postmarked not later than the 24th day of the next succeeding month.

Each operator of an underground liquefied petroleum gas storage project approved by the Division shall report its operation annually on Form C-131-B.

Rule 1100. C. requires operators to make and keep records for a minimum of five years, as follows:

Rule 1100. General

C. Books and Records

All producers, injectors, transporters, storers, refiners, gasoline or extraction plant operators, treating plant operators, and initial purchasers of natural gas within the State of New Mexico shall make and keep appropriate books and records for a period of not less than five years, covering their operations in New Mexico, from which they may be able to make and substantiate the reports required by these rules.

Program Description

f. Enforcement

Differing kinds of enforcement actions are taken at different levels of the Division.

1. Direct action by Field Inspectors. When easily corrected problems such as small surface leaks or excessive injection pressures are encountered by Field Inspectors, the problems are brought directly to the attention of the operator by the Field Inspector for corrective action. As stated in the previous section, 74 such enforcement actions were taken by Field Inspectors in connection with injection Facilities in 1980.

2. District Office Action. When an inspection reveals that a well is leaking or when other serious problems are detected or reported, the District Supervisor or Field Inspector will notify the operator by telephone and/or letter of the repairs which must be made. The operator must file a Form C-103 stating the work which will be performed on the well and a second Form C-103 when the work is completed (See Exhibit xi). In many cases, Field Inspectors will witness the corrective action taken. If the work is not completed within a reasonable time, followup letters are sent to ensure that the remedial action is taken. District Supervisors can order wells shut-in by cancelling the allowable or cancelling the authority to inject if the threat to ground water is severe or if operators fail to take the required remedial action.

3. Division Director Action. District Supervisors refer major cases to the main office in Santa Fe. The Division Director may write or telephone operators ordering corrective action, or he may call a hearing, after public notice, at which the operator must show cause why he should not be required to take action to comply with Division Rules or Orders. To accomplish this, the

operator might present evidence demonstrating that the data causing the call for the hearing was erroneous, that the operator was actually in compliance, or that corrective action had already been taken. Depending on the findings made at the hearing, the Director would issue an Order of the Division specifying the remedial actions, if any, required of the operator. To date operators have cooperated in making well repairs and taking other corrective action and no hearings leading to orders requiring specific corrective action have been required.

The Division Director, in consultation with the General Counsel, and considering the recommendations of the District Supervisor, determines whether or not violations warrant court action to seek fines.

When old wells are judged to be a potential threat to ground water, and the operator does not plug them upon request, or the operator no longer is in business in the state, a case is brought to hearing to determine whether there is any reason why such wells should not be ordered plugged. After the hearing, money for plugging is obtained from bonding companies or from the Division's Reclamation Fund and the Division contracts with a driller to have such wells plugged. Additionally, the Division may take court action to obtain payment from the operator for plugging costs.

4. Court Action. The Division can seek injunctive relief in District Court if operators do not comply with Division Orders and Rules to stop violations, including violations which endanger drinking water.

In cases in which violations appear to result from wilful neglect the Division may seek the assessment of fines of up to \$1,000 a day in civil penalties or up to \$5,000 in criminal penalties for each day a violation takes place. *

As noted above, the vast majority of enforcement actions are carried out by Field Inspectors and the District Supervisors. During 1980 approximately

* See House Bill 232(attached to Division Rules and Statutes) which amends the penalty provisions contained in Section 70-2-20 NMSA, 1978.

4,000 tests of secondary recovery and salt water disposal injection wells were conducted in the southeast producing area. The average rate of problems for all wells tested was approximately 7.3 per cent. However, in areas where annual testing has taken place for a number of years, the failure rate was as low as 2 per cent.

An effective enforcement tool is cancelling the allowable for production wells. This is the equivalent of pipeline severance. In most cases the threat of doing this is sufficient to bring about prompt compliance. If injection wells present problems in a waterflood project and the production allowable for the project wells is cancelled the effect is to shut down injection until corrective action is taken. No such actions have been required in connection with injection wells.

When operators fail to file required monthly reports of production and injection volumes on Form C-115, letters are sent to them cancelling their allowable until they have reported. Approximately thirty to forty such cancellation notices are sent monthly. Plans whereby letters will be sent to operators of disposal wells and injection projects which show no injection for a period of over six months informing them that their authority to inject shall be cancelled ipso facto under Rule 703 are expected to be completed this year.

In waterflood projects in which water flows or other problems have become pronounced, all wells have been tested annually or semiannually and the defective wells have been ordered repaired. Such testing continues until the percentage of wells with defects declines to a minimum level. In such cases the District Supervisors have required the necessary corrective action on defective wells. In virtually all cases, operators have made the necessary repairs without undue delay. Inspectors have witnessed most of the corrective action.

Certain operators are responsible for more frequent violations than others. The violations are mainly in the areas of lease cleanup and minor surface leaks and spills. Field Inspectors make more frequent inspections of such operations, followup more quickly on the requests made for corrective action, and threaten to cancel, or do cancel, allowables more frequently in such cases.

If dangerous or flagrant violations occur, either the District Supervisor or the Division Director can immediately cancel the authority to inject. If the operator should fail to obey such an order, a formal, emergency Division Order cancelling injection authority, could be issued under Rule 1202. Under this rule, a hearing on the Order would be scheduled within fifteen days, but the Order would be effective in the interim. In cases of failure to comply with such an Order, the next step would be court action seeking injunctive relief and fines. No cases of such serious nature have arisen to date in connection with injection operations.

The Division may call a simple show cause hearing at any time for violation of rules or orders where an operator has refused to comply but no emergency condition exists.

Fines have been sought recently against operators for surface leaks and spills but not for injection operation. In 1976, an operator was fined \$18,000 for permitting serious leaks in a salt water disposal well to go undetected for a substantial period of time.

One water contamination study made by the Division (Doom, Mathis, and Owens; Lea County; 1977-78) indicated that a Class II injection well was the probable source of chloride contamination of a water well. Other such studies have generally shown that abandoned brine pits (prohibited by Division Order in most areas since 1969) were the probable contamination source.

Program Description

g. Division Staff and Resources

The Chief of the Technical Support Bureau in the Santa Fe office is directly in charge of UIC activities (See Exhibit II - Table of Organization). Working under him is the UIC Planner who carries out record keeping, reporting, grant application writing, liaison and budgeting duties for the UIC Program.

Applications for new water flood and pressure maintenance projects and for salt water disposal wells and other new injection projects are reviewed by the Water Resource Specialist in Santa Fe who schedules them for Division Hearings or writes Administrative Orders for the Director's approval in cases in which the Rules do not require a hearing (i.e., some salt water disposal wells and additional injection wells in previously approved water flood projects).

The Records Management and Support Section maintains complete records of all injection wells as well as producing wells.

In addition to producing many monthly, semi-annual and annual reports of drilling activity and production, the twelve-person data processing staff utilizes the IBM 4331 computer to produce two monthly reports of injection volumes, pressures and well use for 1) water flood and pressure maintenance projects and 2) salt water disposal wells. Two data processing staff members are also working to complete the injection well inventory for EPA.

All Santa Fe staff members with the exception of the four people in the Oil and Gas Proration Unit work on UIC matters. During the first six months of FY 81, twenty-seven Santa Fe staff members spent an average of almost 17 per cent of their time on UIC work.

District Offices

The thirty-one staff members in Districts I, II, and III devote an average of over twenty per cent of their time to UIC activity. However, in Districts I and II where most injection wells are located, the eight Field

Inspectors spent forty per cent of their time scheduling inspections, inspecting and testing injection and related production wells, investigating complaints of rule violations, witnessing well repairs, and carrying out other UIC activities. In all three Districts inspectors witness mechanical integrity tests on almost all injection wells annually.

Office personnel process drilling and workover applications and maintain complete District well files. Field inspectors observe the majority of the critical operations carried out in drilling and repairing wells to be certain that well construction is adequate to confine fluids to the approved zones. Technical personnel review injection applications to be sure that the proposed injection will not result in fluid migration into drinking water aquifers. When reports of water contamination are received the District Technical staff as well as the Water Resource Specialist from Santa Fe conduct studies to determine the source of contamination. Technical assistance in planning injection projects is given to operators by staff geologists, Field Inspectors, and District Supervisors.

Staff resources are sufficient to permit careful monitoring of injection activities throughout the state. Systematic procedures for testing essentially all injection wells and requiring the repair of defective wells assure the integrity of injection systems and the prevention of fresh water contamination in almost all cases.

Program Description

h. Other State Agencies

The Oil Conservation Division has sole authority for the regulation of Class II wells.

i. Class II Well Inventory

The Contractor employed by the Division to prepare the inventory, completed the inventory for 1978 and began to update the inventory for 1979. Letters were sent to individual operators asking them to verify the information contained in the 1978 records. Based on their replies, discrepancies have been resolved. Operator contact names and addresses have been added. On June 30 the Contractor completed his work and the regular data processing staff continued the updating process. By January 1, 1982, the inventory is expected to be updated, completed and corrected through 1980 and will be submitted to EPA at that time.

j. Aquifer Protection, Aquifer Exemption.

1- Introduction

The purpose of EPA's UIC program is to protect underground sources of drinking water (USDWs) from the potentially harmful effects of the injection of fluids (Class II wells) for produced fluid disposal, enhanced recovery, and hydrocarbon storage.

EPA regulations define a USDW as "an 'aquifer' or its portion

- (a) (1) Which supplies drinking water for human consumption; or
- (2) In which the ground water contains fewer than 10,000 mg/l total dissolved solids, and
- (b) Which is not an exempted aquifer."

The regulations define an aquifer as "a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring."

The regulations define an exempted aquifer as "an 'aquifer' or its portion that meets the criteria in the definition of underground source of drinking water but which has been exempted according to the procedures in § 122.35 (b)."

Under Section 1425 of the Act the State is not bound by, among others, Section 122.35 (b) of the regulations. Further, two Division studies attached as Appendix A-1 and A-2 demonstrate that the procedures of said section are not practical or economic.

However, under guidelines adopted by EPA for State Demonstrations, States are expected to be bound by the criteria of Section 146.04 of the regulations in exempting aquifers.

This section reads as follows relative to Class II wells:

§ 146.04 criteria for exempted aquifers

An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water: in § 146.03 may be determined under 40 CFR 122.35 to be an "exempted aquifer" if it meets the following criteria:

- (a) It does not currently serve as a source of drinking water, and
- (b) It cannot now and will not in the future serve as a source of drinking water because;
 - (1) It is mineral, hydrocarbon or geothermal energy producing;
 - (2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
 - (3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption.

While it may be reasonable to describe and exempt aquifers in some areas such as that described in the Lea County report, Appendix A-2, such action is not uniformly needed nor is it practical. We believe it is possible to conduct a program for regulation of Class II injection wells which will, (1) protect underground sources of drinking water, and (2) not unnecessarily impede approval and use of such wells without formal aquifer designation or exemption. Nevertheless it remains the Division's intention to protect USDWs.

Prior to detailing the nature of the Division program which will accomplish the goals set out above, there should be some additional discussion as to the general impracticality and lack of necessity for aquifer exemption relative to Class II wells.

2 - Practicality

In addition to the gross economic impracticality conclusions inferred from the Eddy County report, Appendix A-1, the nature of

hydrocarbon reservoirs in a formation is such as to defy drawing a line on a map which once and for all may define the horizontal limits thereof. This commonly results from additional drilling which reveals edge wells, isolated pods of protection, or unsuspected pool extensions. Further completely new reservoirs in the same formation may be discovered in proximity to or somewhat removed from currently known reservoirs. These conditions are exemplified by figures A-1 and A-2 following and can be confirmed by comparing development maps from the 1940s and 50s to a recent map.

In essentially all cases one would expect that injection into such extended or new reservoirs would be necessary in order to recover the maximum volume of hydrocarbons contained therein. To require that the State Program be revised each time a new edge well was drilled or a new reservoir found would be wasteful, ridiculous, and of no value.

3 - Necessity

There seems little necessity for elaborate aquifer exemptions related to ER Projects for the following reasons:

- (1) The pressure sinks surrounding the producing wells in an ER project cause injected fluids to move inward toward producing wells rather than outward toward any other part of the formation. Such contained movement eliminates the direct potential for contamination of USWDS which may be located elsewhere in the same formation.
- (2) The Division knows of no instance in the State where drinking water is being produced and consumed by the public from an aquifer which is also an oil and/or gas reservoir at the same horizontal and vertical section. Some USDWs exist within the same vertical section but horizontally removed from the hydrocarbon zone. The San Andres formation in Eddy County provides excellent examples of both of these situations. These conditions are discussed and extensively referenced in Appendix A-1.

The review and approval process to be used for produced fluid disposal wells will assure aquifer protection on a case by case basis. This process is discussed later in this Section.

4 - Approval Process - Enhanced Recovery

The actual approval process is discussed elsewhere in this demonstration. The result of this process, however, will be to permit completion of enhanced recovery injection (ER) wells in that vertical and horizontal portion of a geologic formation which contains hydrocarbons which may be susceptible to production from ER operations. Injection will be permitted in such zone and in the same interval normally not further than one-half mile from the outer boundary of the project. The outer boundary of any ER project may be considered to be a line which is determined by projecting horizontal and vertical lines through the outermost project wells (those wells which have produced or are demonstrated to have productive potential from the project). See Figure A-3.

5 - Approval Process - Produced Fluid Disposal

Produced fluid disposal wells (SWD) will not be authorized to inject into a formation or part thereof containing water having TDS levels of 10,000 mg/l or less except under the following conditions:

- (a) The formation or zone has been declared an exempt aquifer as a part of the State demonstration or any subsequent amendment thereto; or
- (b) The applicant demonstrates at a public hearing that said formation or part thereof meets the exemption criteria of Section 146.04 (a) and (b), (1), (2), or (3).

The Lea County study attached to this demonstration as Appendix A-2 illustrates the type of evidence the Division would seek in such cases.

All applications for approval of SWD wells not within an oil or gas zone or within one mile thereof will contain data on water quality in the proposed disposal interval. Any SWD well proposed for disposal into a formation or zone containing water of 10,000 mg/l TDS or less which is not an exempted aquifer will be set for public hearing before a Division examiner.

The Division will place the Dallas EPA office on its mailing list for hearing dockets as well as for copies of injection well permits.

Program Description

6-- Approval Process - Liquid Hydrocarbon Storage

Liquid hydrocarbon storage wells will be approved in the same manner as produced fluid disposal wells.

7 - Aquifer Exemption - Lea County

The Lea County study contained in Appendix A-2 contains extensive data on Permian age aquifers, their water quality, the potential for their use, alternative water sources, cost analyses, and the value of such aquifers for disposal purposes.

Based upon this study the Division proposes that the Tansil, Yates, Seven Rivers, Queen, Grayburg, and San Andres formations of Lea County be classified as exempt aquifers.

Please refer to Figures 8 and 9 of the Lea County Report, Appendix A-2 and Resource Map No. 6 from "Stratigraphy and Ground-Water Hydrology of the Capitan Aquifer, Southeastern New Mexico and Western Texas". by William L. Hiss (PHD Thesis, University of Colorado 1975) for the vertical and horizontal sections to be exempted. (See following). Because of the gradational nature of the back reef facies a more precise description is not proposed.

COUNTY

POOL

TOWNSHIP

RANGE

NMPM

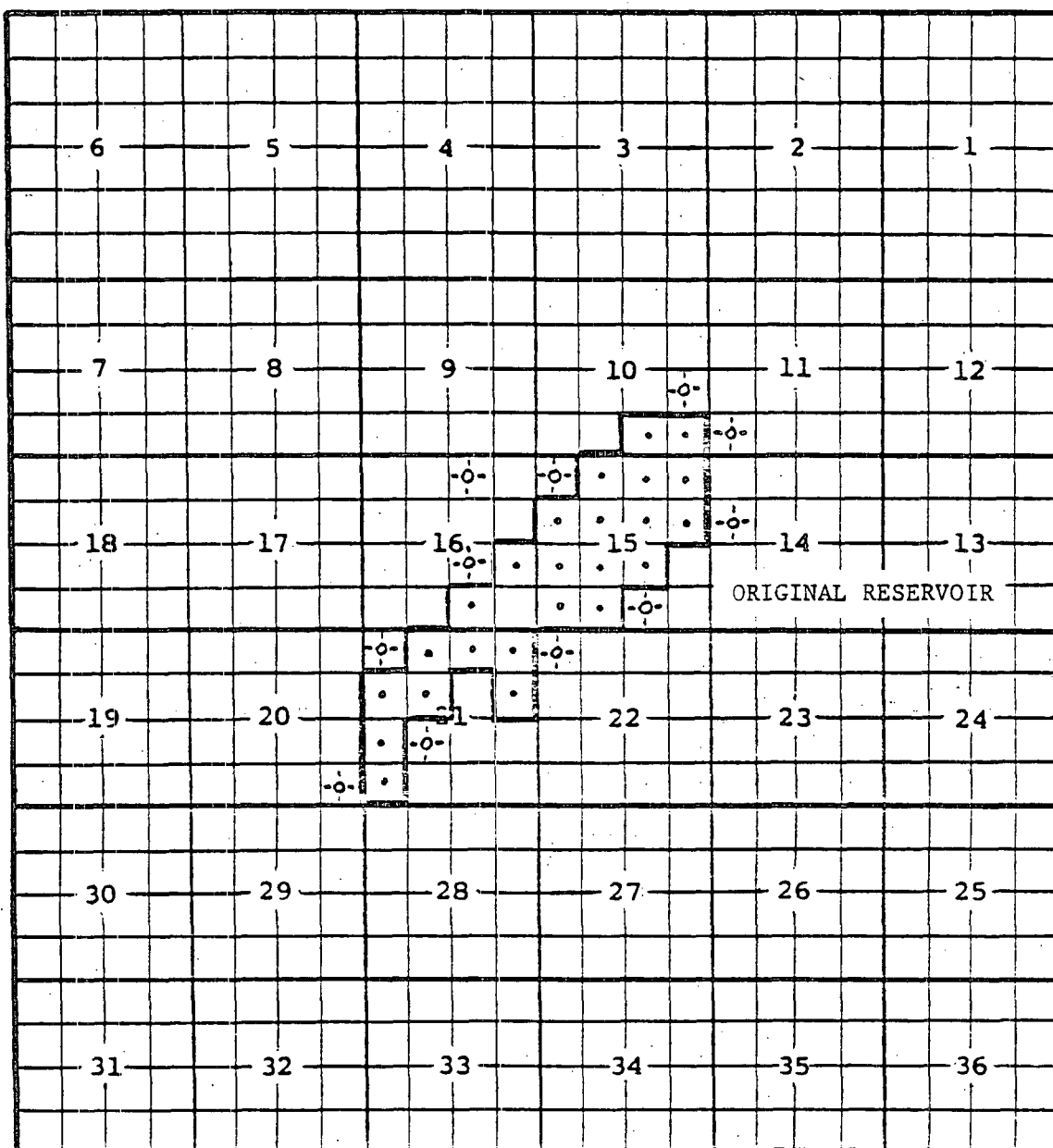


FIGURE A-1

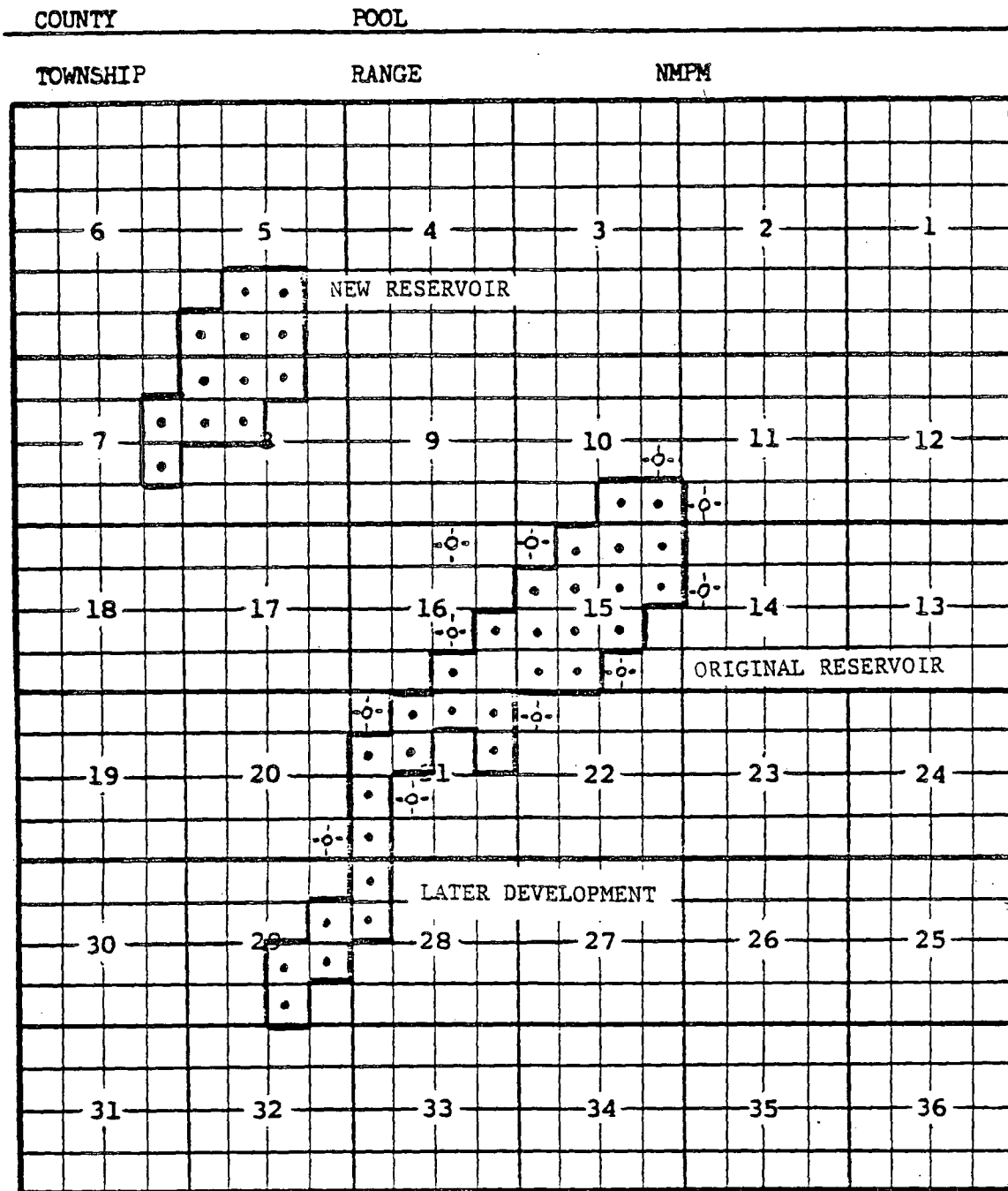


FIGURE A-2

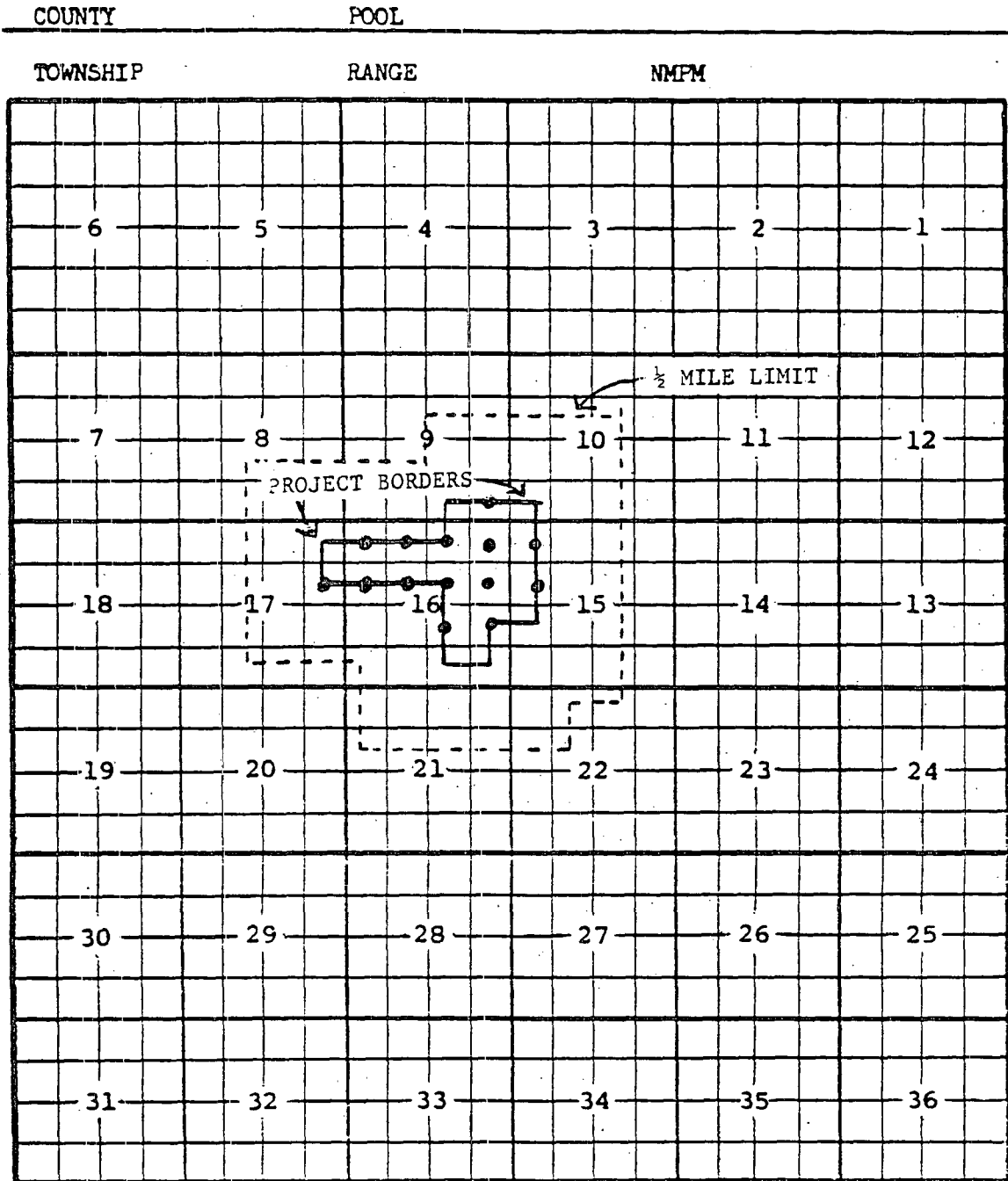


FIGURE A-3

Program Description

New Mexico
From PROFESSIONAL ENGINEER
Vol. 23, No. 11, 1971

WATER-LEVEL CHANGES IN THE PERMIAN CAPITAN AQUIFER

Eddy and Southern Lea Counties, New Mexico

Publication authorized by Director,
U. S. Geological Survey

About the Author --

W. L. (Bill) Hiss, the author of our cover article, is a Hydrologist with the U. S. Geological Survey, Water Resource Division in Albuquerque. He has been a teacher, petroleum geologist, writer, roughneck and tooldresser in his career. He tells me that his photo is of fairly recent vintage, geologically speaking, but usually he doesn't look so calm as he and I have been rushing each other to check on copy or an illustration for the article.

Bill received his B.S. degree from Kansas State University and M. S. degree from the University of Oklahoma. Both degrees were in geology.

He has completed all the requirements for a PhD degree in geology at the University of Colorado with the exception of the dissertation. Part of the study of the ground water geology of the Capitan reef in southeastern New Mexico and western Texas will be used as his dissertation.

The U.S. Geological Survey, his employer for the past six years, and the New Mexico State Engineer are conducting this project cooperatively. Bill has been the project chief for this study since it was started six years ago.

He can't lay claim to being a member of the New Mexico Society of Professional Engineers. However, he is a member of the American Association of Petroleum Geologists, Geological Society of America, Sigma Xi and the New Mexico Geological Society. He is currently the Treasurer of the N. M. Geological Society, and will be Secretary next year. He is also Vice-president of the Albuquerque Santa Fe Federal Automatic Data Processing Council and one of the Directors and the Secretary of IMS Corporation, a manufacturing company located in Albuquerque.

Prepared in cooperation with the New Mexico
State Engineer

By

W. L. Hiss, Hydrologist

U. S. Geological Survey, Albuquerque, N. Mex.

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from PROFESSIONAL ENGINEER (cont'd.)

INTRODUCTION

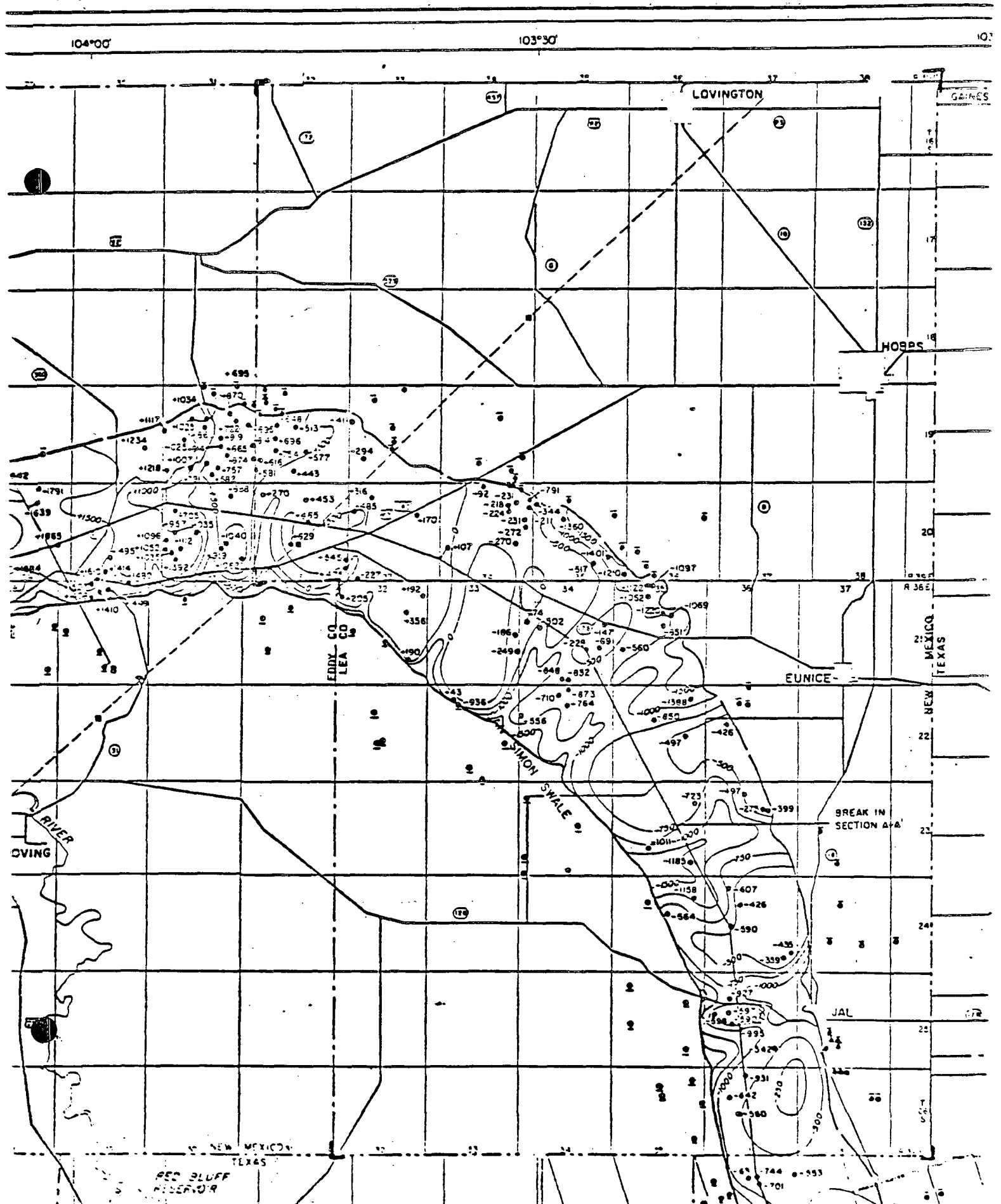
The U. S. Geological Survey, in cooperation with the State Engineer of New Mexico, is using 12 wells in Eddy and southern Lea Counties, New Mexico, to observe changes in hydraulic head in the Capitan aquifer. The observation wells are located in the area underlain by the Capitan Limestone (Permian) in an arc extending from southwest of Carlsbad, N. Mex. around the north and east margins of the Delaware basin to southwest of Jal, N. Mex. (Hiss, 1971; figs. 1 and 2 and table 1)

Large quantities of saline ground water are being withdrawn from the Capitan aquifer in Lea County, New Mexico and Winkler and Ward Counties, Texas (Guyton and Associates, 1958; Brackbill and Gaines, 1961). This water, together with some additional saline water produced with oil, is transported to other areas where it is injected into several formations to repressurize partially depleted oil fields. The location of principal water fields producing from the Capitan aquifer is shown in Figure 1.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
In cooperation with
NEW MEXICO STATE ENGINEER

RESOURCE MAP NO. 6

Program
Description
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Program Description

k. Review of existing Class II wells.

Since 1976 the Division has been conducting an intensified program of testing all Class II wells related to secondary recovery and salt water disposal. This program is described above in Section e. In water flood projects where problems developed, the Division has tested most production and injection wells annually or semiannually and has caused wells to be repaired. Operators submit repair plans to the Division for approval, and in most cases Field Inspectors witness the repair procedures. This work has resulted in reducing the percentage of problem wells to approximately two per cent.

The review proposed in this section of the Guidance, then, has been essentially completed and no major well review program is necessary.

In 1981, and annually for the next few years, the Division will arrange with operators for mechanical integrity tests of virtually all injection wells in water flood and pressure maintenance projects and salt water disposal wells. Field inspectors will witness most such tests and necessary repairs will be required. Authority to inject will be cancelled for those wells which operators do not repair successfully. When such inspections reveal evidence of low failure rates, the test periods may be lengthened but will not exceed five years.

In addition, the status and condition of the score of LPG storage wells will be rechecked within two years.

The above program assures that the mechanical integrity of existing Class II wells will be verified frequently enough to provide sufficient protection to underground sources of drinking water.

l. Public Participation

A public information program to inform New Mexicans about underground injection control and to solicit public input for the UIC program will be carried

out. At the same time, under the provisions of Rules Section N-Rules on Procedure, public notice is given of all Division and Commission hearings called to consider applications for new or expanded injection projects. The public is permitted to offer testimony at all such hearings.

Significant comments made by any individual at hearings are addressed by the Hearing Examiner during the hearing and become part of the hearing transcript, or they are addressed in the findings which accompany the subsequent order. In both instances, the responses to comments become part of the case record and are available for public perusal in the Santa Fe office of the Division.

In the case of applications for expanded projects which can be approved administratively without a hearing under Rule 701, the notice provisions require applicants to furnish a copy of the application to the surface owner and to each offset operator within a half mile of the well location and also to publish notice of the application in a newspaper of general circulation in the county in which the proposed well is located. If objections are received within 15 days, the application will not be approved and the case will be scheduled for hearing after public notice if the operator so desires.

m. Public Complaints

Having existed for over 30 years the three District Offices of the Division in the oil and gas producing regions of the State, and the central office in Santa Fe, are well known to interested members of the public as the locations for obtaining information and registering complaints related to oil and gas activities. The Division Director, Technical Support Chief, Chief Engineer, General Counsel, District Supervisors, Field Inspectors and other Division staff members are readily available to respond to public inquiries and complaints. A complaint form (see Exhibit XII) is utilized to record public complaints and the action taken on complaints received at the District Offices are sent to Santa Fe for review and possible further action to alleviate the

cause of the specific complaint or to prevent the recurrence of similar situations.

As part of the UIC information program, efforts are being made to re-emphasize to the public where and to whom to come with questions and complaints related to oil and gas activities.

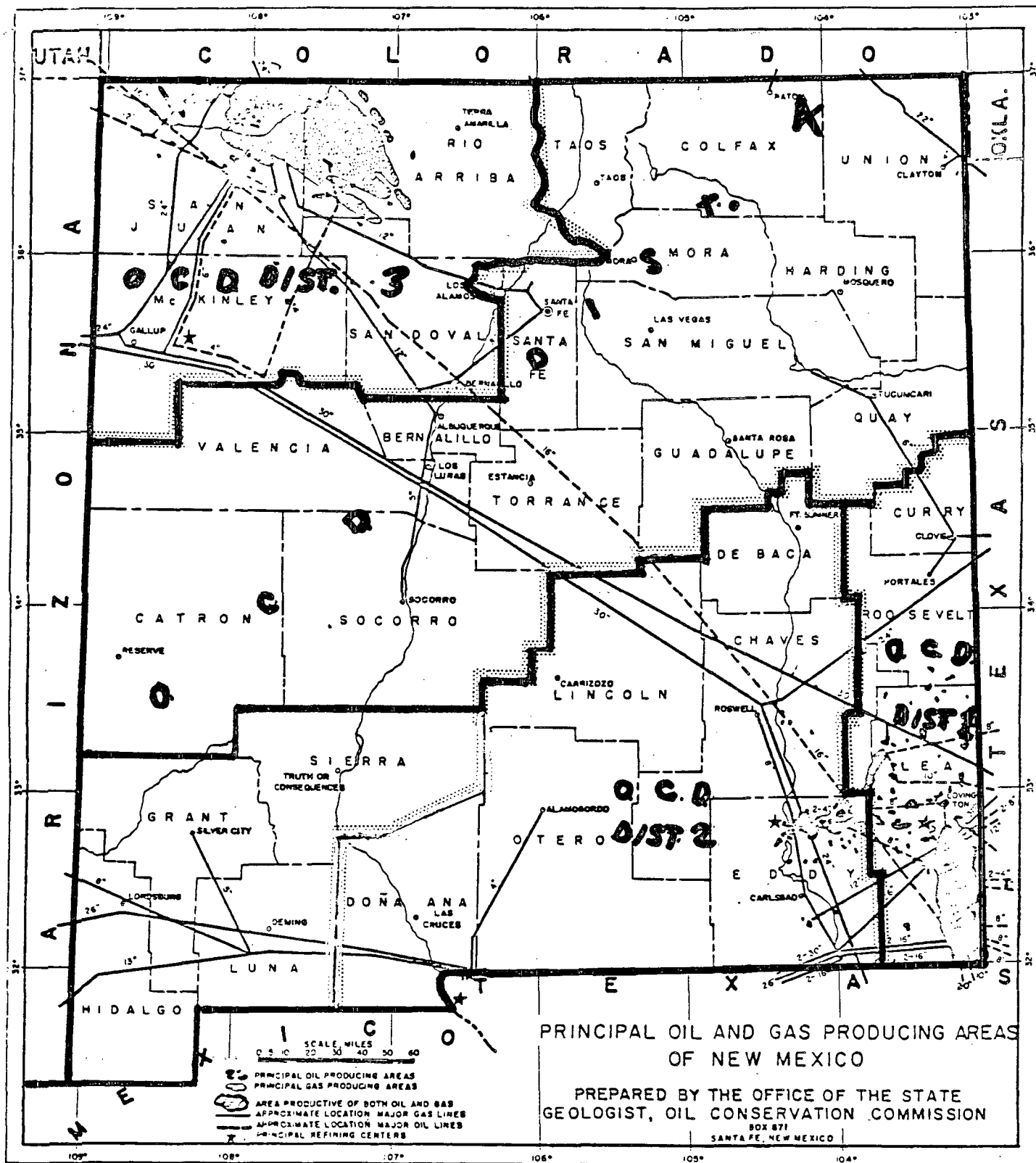
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EXHIBIT I



New Mexico Oil Conservation Division. Districts and Offices:

- District 1:** Lea, Roosevelt, and Curry Counties; also that portion of Chaves County East from and including Range 30 East, NMPM. District Office at Hobbs.
- District 2:** Eddy, Otero, Doña Ana, Lincoln, and De Baca Counties; also that portion of Chaves County West from and including Range 29 East, NMPM. District Office at Artesia.
ALSO LUNA, HIDALGO, GRANT, SIERRA.
- District 3:** San Juan, Rio Arriba, Mc Kinley, and Sandoval Counties. District Office at Aztec.
- District 4:** All remaining counties. District Office at Santa Fe. GEOTHERMAL REGULATION FOR ALL COUNTIES.

OIL CONSERVATION DIVISION TABLE OF ORGANIZATION (60 staff)

SANTA FE ADMINISTRATIVE OFFICE/DISTRICT IV OFFICE
(32 staff)

Division Director

Secretary

General Counsel

Technical Services Bureau

Technical Support Chief

Secretary

Records Management and Support Section

2 Clerks

Underground Injection Control Section

Planner

Data Processing Section

Information Systems Manager

Programmer Analyst

Development Programmer

Records Manager

Computer Operator

Key Entry Supervisor

5 Key Entry Operators

Clerk

Oil and Gas Proration Unit

Supervisor

2 Clerks

Data Processing Trainee

Engineering and Geological Services Bureau

Chief Petroleum Engineer

Petroleum Engineer

Secretary

Geothermal and Geological Services Section

Supervisor *

Field Inspector*

Water Resource Specialist

Staff Specialist

Typist

*District IV staff

HOBBS DISTRICT I OFFICE

Supervisor
Geologist
Chief Field Inspector
4 Field Inspectors
Staff Specialist
Clerk Specialist
4 Clerks
13 staff members

ARTESIA DISTRICT II OFFICE

Supervisor
Geologist
Chief Field Inspector
2 Field Inspectors
3 Clerks
8 staff members

AZTEC DISTRICT III OFFICE

Supervisor
Chief Field Inspector
Geological Field Inspector
4 Clerks
7 staff members

SUBJECT: SALT WATER DISPOSAL WELL

ORDER NO. SWD-227

THE APPLICATION OF J. M. HUBER
CORPORATION FOR A SALT WATER DISPOSAL
WELL.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701 (C), J. M. Huber Corporation made application to the New Mexico Oil Conservation Division on June 30, 1920, for permission to complete for salt water disposal its Griffin No. 1 located in Unit A of Section 4, Township 14 South, Range 36 East, NMPM, Lea County, New Mexico.

The Division Director finds:

- (1) That application has been duly filed under the provisions of Rule 701 (C) of the Division Rules and Regulations;
- (2) That satisfactory information has been provided that all offset operators and surface owners have been duly notified; and
- (3) That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 (C) will be met.
- (4) That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, J. M. Huber Corporation, is hereby authorized to complete its Griffin No. 1 located in Unit A of Section 4, Township 14 South, Range 36 East, NMPM, Lea County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Cisco formation at approximately 10,870 feet to approximately 11,093 feet through 2 3/8 inch plastic lined tubing set in a packer located at approximately 10,177 feet.

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That injection pressure shall not exceed 2175 pounds per square inch as measured at the surface.

That the operator shall notify the supervisor of the Division's Hobbs District Office before injection is commenced through said well;

That the operator shall immediately notify the Supervisor of the Division Hobbs District Office of the failure of the tubing casing, or packer in said well or the leakage of water from or around said well and shall take such steps as may be timely or necessary to correct such failure or leakage.


PROVIDED FURTHER: That jurisdiction of this cause is

Program Description
EXHIBIT III page 2

hereby retained by the Division for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Division may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operations in accordance with Rule 704 and 1120 of the Commission Rules and Regulations.

APPROVED at Santa Fe, New Mexico, on this 17th day of July, 1980.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Division Director

SEAL



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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

December 8, 1980

J. M. Huber Corporation
1900 Wilco Building
Midland, Texas 79701

Attention: Robert G. Setzler

Re: Stoltz State SWD Well
No. 1-M, Section 6,
T15S, R35E
SWD-230

Gentlemen:

In regards to your application to increase surface injection pressures in the subject well, we cannot allow you to inject at such pressures without a step-rate test. These pressures are far above those permitted in the area and would like to see further evidence to substantiate such an increase.

If you have further questions, please call upon my office.

Yours very truly,

JOE D. RAMEY
Director

JDR/MH/fd

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

SANTA FE - NEW MEXICO

The State of New Mexico by its Oil Conservation Division hereby gives notice pursuant to law and the Rules and Regulations of said Division promulgated thereunder of the following public hearing to be held at 9 O'clock a.m. on September 23, 1981, at the Oil Conservation Division Conference Room, State Land Office Building, Santa Fe, New Mexico, before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner, both duly appointed for said hearing as provided by law.

STATE OF NEW MEXICO TO:

All named parties and persons
having any right, title, interest
or claim in the following cases
and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated.)

CASE 7353

Application of Texaco, Inc., for the
amendment of Division Order No. R-5530,
Lea County, New Mexico.

Applicant, in the above-styled cause, seeks the amendment of Order No. R-5530, which authorized its Central Vacuum Unit Area Pressure Maintenance Project, to increase the total project area allowable, or as an alternative, to reclassify the project as a waterflood project.

CASE 7354

Application of Corona Oil Company
for a pilot steam-enhanced oil
recovery project, Guadalupe County,
New Mexico.

Applicant, in the above-styled cause, seeks authority to institute a pilot steam-enhanced oil recovery project in the Santa Rosa formation by using two existing wells and three additional wells to be drilled to complete a five spot pattern located in NE/4 NW/4 of Section 17, Township 11 North, Range 26 East.

EXHIBIT V

Docket No. 9-81

Dockets Nos. 12-81 and 13-81 are tentatively set for April 8 and 22, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - MONDAY - MARCH 16, 1981

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases are continued from the February 18, 1981, Commission Hearing:

CASE 7155: Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7057: (DE NOVO)

Application of Doyle Hartman for the extension of the vertical limits of the Langlie Mattix Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the vertical limits of the Jalmat Pool and the upward extension of the vertical limits of the Langlie Mattix Pool to the following depths underlying the following 40-acre tracts in Township 24 South, Range 37 East: SE/4 SE/4 of Section 30: 3364 feet; NE/4 SE/4 of Section 30: 3389 feet; and SE/4 SW/4 of Section 20: 3390 feet.

Upon application of ARCO Oil and Gas Company this case will be heard De Novo pursuant to the provisions of Rule 1220.

Docket No. 10-81

DOCKET: COMMISSION HEARING - WEDNESDAY - MARCH 18, 1981

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

CASE 7198: Application of Amoco Production Company for temporary special rules, Union, Harding, and Quay Counties, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of temporary special area rules for the Bravo Dome carbon dioxide gas area, including provision for 640-acre spacing units, specified well locations, casing and cementing rules, and authority to inject carbon dioxide gas for test purposes only.

Docket No. 11-81

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 25, 1981

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

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

CASE 7199: In the matter of the hearing called by the Oil Conservation Division on its own motion to consider amendments to its SPECIAL RULES FOR APPLICATIONS FOR WELLHEAD PRICE CEILING CATEGORY DETERMINATIONS as promulgated by Division Order No. R-5878, as amended. The proposed amendments relate to individual well filing requirements for price category determinations for the following categories:

- (1) High cost production enhancement gas under Section 107 of the NGPA;
- (2) Continued stripper qualification resulting from temporary pressure buildups under Section 108 of the NGPA.

- CASE 7200:** Application of Estoril Producing Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Helco Fed. Well No. 1 located in Unit O of Section 15, Township 23 South, Range 34 East, to produce gas and gas liquids from the Strawn and Morrow formations, Antelope Ridge Field, thru parallel strings of tubing.
- CASE 7201:** Application of Layton Enterprises, Inc. for a unit agreement, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Todd Lower San Andres Unit Area, comprising 3256 acres, more or less, of Federal and State lands in Township 7 South, Ranges 35 and 36 East.
- CASE 7202:** Application of Layton Enterprises, Inc. for a waterflood project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation thru 4 injection wells located in Sections 30, 31 and 32 of its Todd Lower San Andres Unit in Township 7 South, Range 36 East.
- CASE 7203:** Application of Southern Union Exploration Co. of Texas for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Susco Bough "C" Unit Area, comprising 2560 acres, more or less, of State lands in Township 10 South, Range 33 East.
- CASE 7204:** Application of Bass Enterprises Production Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation in the interval from 3820 feet to 3915 feet in its Federal Legg Well No. 1 in Unit B of Section 27, Township 22 South, Range 30 East, Quahada Ridge Field.
- CASE 7205:** Application of Supron Energy Corporation for a non-standard gas proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard Blanco Mesaverde gas proration unit comprising the NE/4 of Section 35, Township 31 North, Range 12 West, to be dedicated to a well to be drilled at a standard location thereon.
- CASE 7183:** (Continued from March 11, 1981, Examiner Hearing)
- Application of Flag-Redfern Oil Company for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Osudo St. Com Well No. 2 at an unorthodox location 990 feet from the North and East lines of Section 18, Township 20 South, Range 36 East, North Osudo-Morrow Gas Pool.
- CASE 7206:** Application of Mobil Producing Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation through perforations from 12,212 feet to 12,218 feet and the open hole interval from 12,240 feet to 12,535 feet in its Santa Fe Pacific Well No. 3 in Unit N of Section 26, Township 9 South, Range 36 East, Crossroads Field.
- CASE 7207:** Application of Mobil Producing Inc. for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the commingling of Vacuum Grayburg-San Andres production from the State J and State II leases in Section 22, Township 17 South, Range 34 East.
- CASE 7208:** Application of Gulf Oil Corporation for the amendment of pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the White City-Pennsylvanian Gas Pool Rules to provide for 320-acre spacing rather than 640 acres with well locations specified as being at least 1650 feet from the end boundary and 660 feet from the side boundary of the proration unit.
- CASE 7129:** (Continued from February 25, 1981, Examiner Hearing)
- Application of Koch Exploration Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the N/2 of Section 28, Township 28 North, Range 8 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7169:** (Continued from February 25, 1981, Examiner Hearing)
- Application of Koch Exploration Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the S/2 of Section 22, Township 28 North, Range 8 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6367
Order No. R-5897

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR A PRESSURE MAINTENANCE
PROJECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 25, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of January, 1979, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That by Division Order No. R-5871 dated November 27, 1978, statutory unitization was approved for the East Vacuum Grayburg-San Andres Unit Area, Lea County, New Mexico.

(3) That the applicant herein, Phillips Petroleum Company, seeks authority to institute a pressure maintenance project on the aforesaid East Vacuum Grayburg-San Andres Unit Area, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through 59 wells, 31 of which would be drilled in 1979 during Phase II of the Project Development Program and 28 of which would be drilled in 1980 during Phase III of the Development Program.

(4) Applicant further seeks the designation of a project area for said pressure maintenance project and the promulgation of special rules and regulations governing said project including special allowable provisions.

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Case No. 6367

Order No. R-5897

(5) That for Phase I of the Project Development Program, applicant proposes to drill during 1979 ten producing wells at unorthodox locations as specified below:

<u>TRACT NO.</u>	<u>WELL NO.</u>	<u>LOCATION</u>	<u>UNIT</u>	<u>SECTION</u>
3229	005	1310' FSL and 1310' FWL	M	32
3202	001	1310' FSL and 1330' FEL	O	32
3202	003	1330' FNL and 1330' FEL	G	32
3328	002	1310' FSL and 1310' FWL	M	33
3366	001	1330' FNL and 1310' FWL	E	33
3333	004	1330' FNL and 1330' FEL	G	33
3456	005	1330' FNL and 1310' FWL	E	34
2801	002	1310' FSL and 1310' FWL	M	28
2801	004	1310' FSL and 1330' FEL	O	28
2721	001	1310' FSL and 1310' FWL	M	27

all in Township 17 South, Range 35 East, NMPM, Lea County, New Mexico.

(6) That during Phase II of the Development Program applicant proposes to drill 18 additional producing wells, all at unorthodox locations, and during Phase III of the Program applicant proposes to drill 26 additional producing wells, also at unorthodox locations.

(7) That all of the wells referred to in Findings Nos. (3), (5) and (6) above, being 59 injection wells at unorthodox locations and 54 producing wells at unorthodox locations, together with the currently completed producing wells in the Unit Area, will provide a thorough and efficient sweep of hydrocarbons throughout the unitized area, and will result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(8) That the above-described injection and producing wells, some of which would be at unorthodox locations along the unit boundaries in accordance with lease-line agreements with operators of offsetting lands, will not impair but will protect correlative rights.

(9) That the applicant's request for the designation of a Pressure Maintenance Project for the East Vacuum Grayburg-San Andres Unit Area, and for the promulgation of special rules and regulations governing said project, is in the interest of conservation and should be approved, subject to certain provisions.

Case No. 6367

Order No. R-5897

(10) That the project area should consist of those proration units within the boundary of the East Vacuum Grayburg-San Andres Unit upon which is located an injection well and any directly or diagonally offsetting proration unit which contains a producing well.

(11) That the total project area allowable should be equal to the sum of the basic project area allowable plus the water injection credit allowable.

(12) That the basic project area allowable should be equal to 80 barrels of oil per day times the number of developed 40-acre proration units in the project area.

(13) That the water injection credit allowable should be based on the following formula:

$$\text{Water Injection Credit Allowable} = \left[\frac{\text{net water injected}}{\text{basic project area allowable voidage}} \right] \times \text{basic project area allowable}$$

and should be calculated in accordance with Exhibits "A" and "B" attached hereto and by reference made a part hereof.

(14) That the project area allowable should be produced from the wells within the project area in any proportion provided that any proration unit situated on the boundary of said East Vacuum Unit which proration unit is not directly or diagonally offset by a San Andres injection well outside the Unit or on the Unit boundary should not be permitted to produce in excess of 80 barrels of oil per day.

(15) That each of the newly drilled production or injection wells in the project should be equipped with surface casing set at approximately 350 feet and cemented to the surface and with "production" casing set at total depth, approximately 4900 feet.

(16) That the "production" casing on each of said newly drilled wells should be cemented to the surface, except that in any well in which an intermediate casing string has been run to below the top of the Yates formation and cemented to the surface, the "production" casing may be cemented back into the base of the intermediate casing string.

(17) That injection should be accomplished through tubing installed in a packer set within 100 feet of the uppermost perforation. The injection tubing should be corrosion protected by a non-reactive internal lining or coating. The casing-tubing

annulus in each injection well should be filled with an inert fluid and a surface pressure gauge or approved leak detection device should be attached to the annulus.

(18) The injection wells or system should be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 0.2 psi per foot of depth to the uppermost perforation. Provision should be made for the Division Director to administratively authorize a pressure limitation in excess of the above upon showing by the Unit Operator that such higher pressure will not result in fracturing of the confining strata.

(19) All wells within the project area should be equipped with risers or in some other acceptable manner as to facilitate the periodic testing of the bradenhead for pressure or fluid production.

(20) That provision should be made for the Division Director to authorize placing wells on injection and the drilling of injection wells and additional producing wells at orthodox and unorthodox locations anywhere within the Unit Area without notice and hearing, provided that no unorthodox location is closer than ten feet to a quarter-quarter section line nor closer than 330 feet to the unit boundary, unless such well located closer than 330 feet to the unit boundary is covered by a lease-line agreement with the operator of the lands offsetting such well or the owner of the offsetting lands has waived objection to such location in writing.

(21) That there are a number of wells within the East Vacuum Grayburg-San Andres Unit Area and on lands offsetting the unit area which have previously been plugged and abandoned in a manner which may permit waters injected into the San Andres formation to escape into other formations, including the Salado formation and the shallow fresh water-bearing formations unless remedial action is taken on said wells prior to injection in their near vicinity.

(22) That there are a number of wells within the East Vacuum Grayburg-San Andres Unit Area and on lands offsetting the unit area which penetrate the Vacuum Grayburg-San Andres Pool and are completed in deeper pay zones, but which are cased and cemented in such a manner as may permit the escape of waters injected into the San Andres formation into other formations as described above.

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Case No. 6367

Order No. R-5897

(23) That those wells referred to in Findings Nos. (21) and (22) above which are inadequately plugged and abandoned or are inadequately cased and cemented, or are suspected of being so, include, but are not necessarily limited to, the wells listed in Exhibit "C" attached hereto and by reference made a part hereof.

(24) That no injection at greater than hydrostatic pressure should be made into the Grayburg or San Andres formation in any well in the East Vacuum Grayburg-San Andres Unit Area within one-half mile of any well listed on Exhibit "C" attached hereto until remedial action has been taken on such well to ensure that it will not serve as an avenue of escape for injected waters or until tests have been conducted on such well or other evidence concerning such well has been presented, all establishing to the satisfaction of the Supervisor of the Hobbs District Office of the Division that remedial work on such well is unnecessary.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to institute and operate a pressure maintenance project in the East Vacuum Grayburg-San Andres Unit Area, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through certain wells which will be administratively approved for water injection at some later date by the Division Director.

(2) That said project shall be designated the East Vacuum Unit Pressure Maintenance Project.

(3) That the following unorthodox locations are hereby approved for new producing wells which are to be drilled by the unit operator during Phase I of the Project Development Program:

<u>TRACT NO.</u>	<u>WELL NO.</u>	<u>LOCATION</u>	<u>UNIT</u>	<u>SECTION</u>
3229	005	1310' FSL and 1310' FWL	M	32
3202	001	1310' FSL and 1330' FEL	O	32
3202	003	1330' FNL and 1330' FEL	G	32
3328	002	1310' FSL and 1310' FWL	M	33
3366	001	1330' FNL and 1310' FWL	E	33
3333	004	1330' FNL and 1330' FEL	G	33
3456	005	1330' FNL and 1310' FWL	E	34
2801	002	1310' FSL and 1310' FWL	M	28
2801	004	1310' FSL and 1330' FEL	O	28
2721	001	1310' FSL and 1310' FWL	M	27

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Case No. 6367

Order No. R-5897

all in Township 17 South, Range 35 East, NMPM, Lea County, New Mexico.

(4) That Special Rules and Regulations governing the East Vacuum Unit Pressure Maintenance Project are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
EAST VACUUM UNIT PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the East Vacuum Unit Pressure Maintenance Project shall consist of those proration units within the boundaries of the East Vacuum Grayburg-San Andres Unit upon which is located an injection well and any directly or diagonally offsetting proration unit which contains a producing well.

RULE 2. The project area shall receive a project area allowable, and said project area allowable shall be the sum of the basic project area allowable plus the water injection credit allowable.

RULE 3. The basic project area allowable shall be equal to 80 barrels of oil per day times the number of developed 40-acre proration units in the project area.

RULE 4. The water injection credit allowable shall be contingent upon full reservoir voidage replacement of all produced fluids and shall be based upon the following formula:

$$\text{Water Injection Credit Allowable} = \left[\frac{\text{Net Water Injected}}{\text{Basic Project Area Allowable} \times \text{Reservoir Voidage}} \right]^{-1} \times \text{Basic Project Area Allowable}$$

The water injection credit allowable shall be calculated in accordance with the procedures and parameters depicted on Exhibits "A" and "B" to Order No. R-5897.

In no event shall the water injection credit allowable be less than zero, i.e., negative numbers derived from application of the above formula shall be ignored.

RULE 5. The weighted average project area reservoir pressure shall be determined prior to commencement of injection of water into the reservoir and at least annually thereafter. The weighted average project area pressure shall be determined from the pressures in at least ten representative wells selected by the unit operator and the Supervisor of the Hobbs District Office of the Division.

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Case No. 6367

Order No. R-5897

RULE 6. The project area allowable may be produced from the wells within the project area in any proportion provided, however, that any proration unit situated on the boundary of the East Vacuum Unit which proration unit is not directly or diagonally offset by a San Andres injection well outside said East Vacuum Unit or on the East Vacuum Unit boundary shall not be permitted to produce in excess of 80 barrels of oil per day.

RULE 7. Those wells within the East Vacuum Unit Area that are not included within the project area as defined above shall be prorated in accordance with the Rules and Regulations of the Division.

RULE 8. The Division Director shall have authority to approve, without notice and hearing, the drilling of wells at unorthodox locations anywhere within the unit boundary, provided however, no unorthodox location shall be closer than ten feet to any quarter-quarter section line, and provided further, that no such unorthodox location shall be closer than 330 feet to the outer boundary of the unit area, unless such well is covered by a lease-line agreement with the operator of the lands offsetting such well, and a copy of the lease-line agreement accompanies the application for such unorthodox location, or unless such offset operator has waived objection to the proposed unorthodox location in writing, and his waiver accompanies the application.

RULE 9. No well shall be placed on water injection in the East Vacuum Unit Area unless the Division Director has approved such well for injection. Applications for injection approval shall be filed in accordance with Rule 701 of the Division Rules and Regulations.

RULE 10. Each newly drilled injection or producing well shall be equipped with a minimum of 350 feet of surface casing and "production" casing run to total depth (approximately 4900 feet). All casing strings shall be cemented to the surface except that in any well in which an intermediate casing string has been run to below the top of the Yates formation and cemented to the surface, the "production" string may be cemented back into the base of the intermediate casing.

RULE 11. Injection shall be accomplished through tubing installed in a packer set within 100 feet of the uppermost perforation. The injection tubing shall be corrosion protected by a non-reactive internal lining or coating. The casing-tubing annulus in each injection well shall be filled with an inert fluid and a surface pressure gauge or approved leak detection device shall be attached to the annulus.

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Case No. 6367

Order No. R-5897

RULE 12. The injection wells or system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 0.2 psi per foot of depth to the uppermost perforation. The Division Director may administratively authorize a pressure limitation in excess of the above upon showing by the unit operator that such higher pressure will not result in fracturing of the confining strata.

RULE 13. All wells within the project area shall be equipped with risers or in some other acceptable manner as to facilitate the periodic testing of the bradenhead for pressure or fluid production.

RULE 14. The unit operator shall immediately notify the Supervisor of the Hobbs District Office of the Division of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well, the leakage of water or oil from or around any plugged and abandoned well within the project area, or any other evidence of fluid migration from the injection zone, and shall take such timely steps as may be necessary or required to correct such failure or leakage.

RULE 15. Each month the project operator shall submit to the Division a Pressure Maintenance Project Operator's Report, on a form prescribed by the Division, outlining thereon the data required and requesting allowables for each of the several wells in the Project as well as the total project area allowable.

RULE 16. The Division shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for the wells in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and, except as provided under Rule 6 above, may be produced from the wells in the Project in any proportion.

IT IS FURTHER ORDERED:

(1) That no injection at greater than hydrostatic pressure shall be made into the Grayburg or San Andres formation in any well in the East Vacuum Grayburg-San Andres Unit Area within one-half mile of any well listed on Exhibit "C" attached hereto until remedial action has been taken on such well to ensure that it will not serve as an avenue of escape for injected waters, or until tests have been conducted on such well or other evidence concerning such well has been presented

establishing to the satisfaction of the Supervisor of the Hobbs District Office of the Division that remedial work on such well is unnecessary.

(2) That Order No. R-3150 which authorized a pilot waterflood project in this area is hereby rescinded.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

- S E A L

fd/

VACUUM GRAYBURG-SAN ANDRES POOL, LEA COUNTY, NEW MEXICO

WATER INJECTION CREDIT ALLOWABLE CALCULATION DATA

ATTACHMENT TO _____, 19__, REPORT

$$\text{Water Injection Credit Allowable} = \left[\frac{W_i - W_p}{\text{BPAA} \left[B_o + \frac{(R_p - R_s)}{(1,000)} B_g \right]} - 1 \right] \text{BPAA}$$

W_i = _____ = Average daily water injection, barrels per day, project area only.

W_p = _____ = Average daily water produced, barrels per day, project area only.

BPAA = _____ = Basic project area allowable, 80 bopd x _____ (number of developed 40-acre tracts in project area).

_____ = Weighted average project area reservoir pressure, psig, from _____, 19__, survey data.

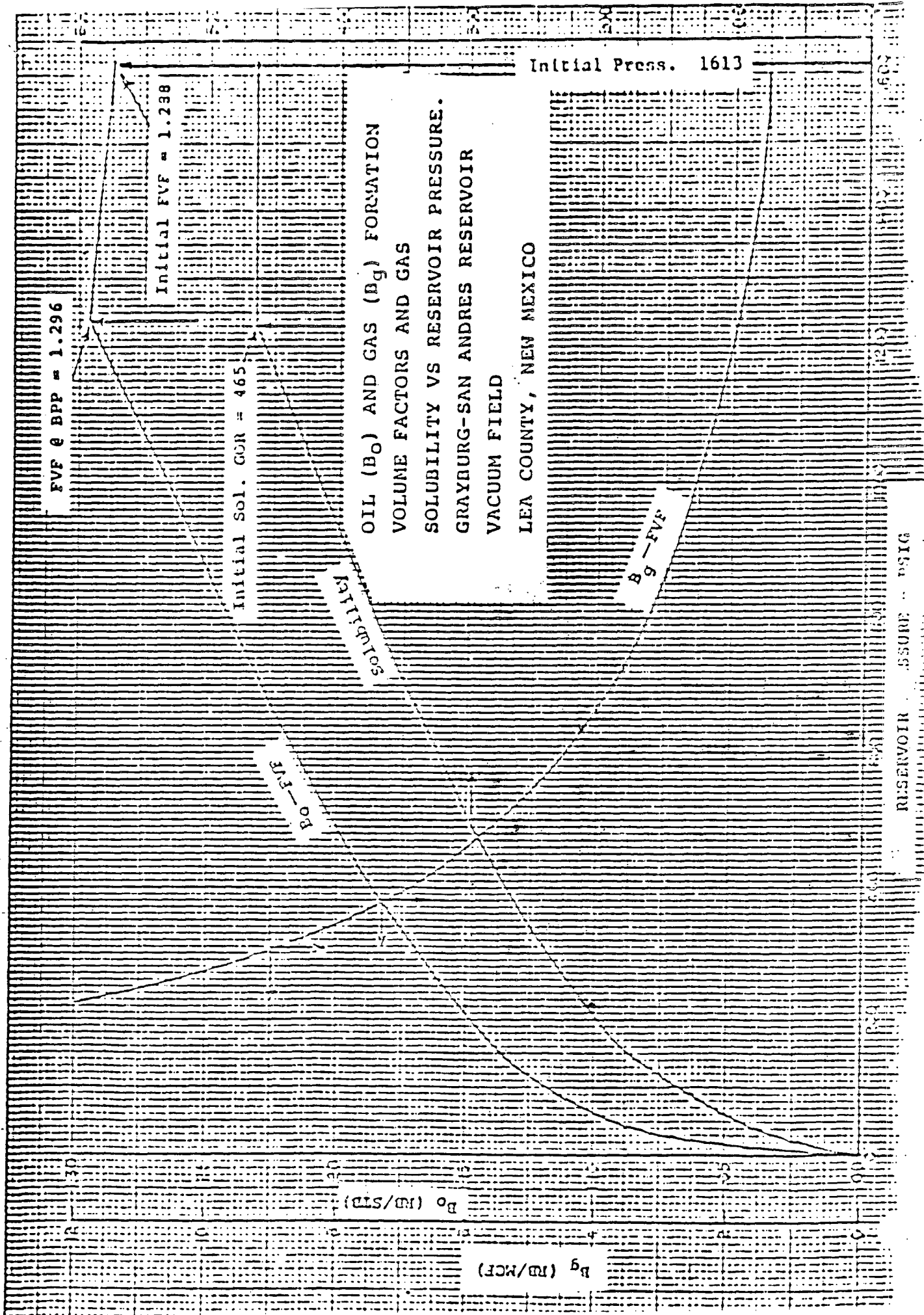
B_o = _____ = Oil formation volume factor, reservoir barrels per stock tank barrel (Exhibit B).

R_p = _____ = Producing gas-oil ratio, cubic feet per barrel, project area only.

R_s = _____ = Solution gas-oil ratio, cubic feet per barrel (Exhibit B).

B_g = _____ = Gas formation volume factor, reservoir barrels per Mcf (Exhibit B).

Water injection credit allowable for _____, 19__, = _____ barrels of oil per day.



WELLS SUSPECTED OF BEING INADEQUATELY PLUGGED
AND ABANDONED OR INADEQUATELY CASED AND
CEMENTED

<u>OPERATOR</u>	<u>LEASE</u>	<u>WELL NO.</u>	<u>UNIT</u>	<u>SEC-TWP-RGE</u>
Mobil	State P	7	P	22-17S-35E
Penrose	State	2	N	24-17S-35E
Phillips	Santa Fe	15	A	28-17S-35E
Phillips	Santa Fe	16	L	5-18S-35E
Phillips	Santa Fe	37	F	28-17S-35E
Phillips	Santa Fe	47	C	35-17S-35E
Shell	State U	1	C	3-18S-35E
Shell	State VAA	6	K	5-18S-35E
Shell	State C	1	I	24-17S-34E
Shell	State I	1	E	29-17S-35E
Shell	State S	1	I	21-17S-35E
Stoltz etal.	Abo	1	O	24-17S-35E
Zapata	Shell State	1	O	23-17S-35E
Barnett	State B	1	D	19-17S-35E
Jones	State	2	A	35-17S-35E
Penrose	Scarborough	1	C	25-17S-35E
Amoco	State CV	1	F	25-17S-35E
Amoco	State CV	4	L	25-17S-35E
Amoco	State CV	5	F	25-17S-35E
Chevron	State 6-34	4	J	34-17S-35E
Cities Service	State BJ	2	K	35-17S-35E
Crusader	State	1	E	20-17S-35E
Crusader	State	2	C	19-17S-35E
Crusader	State	3	N	18-17S-35E
Exxon	State J	1	M	19-17S-35E
Exxon	State J	2	L	19-17S-35E
Exxon	State AC	1	H	22-17S-35E
Great Western	State E	2	L	25-17S-35E
Marathon	Warn State	1	M	23-17S-35E
Amoco	State CV	2	E	25-17S-35E
Amoco	State CV	2-Y	E	25-17S-35E
Millard Deck	Carthay State	2	G	20-17S-35E
Exxon	State K	17	P	32-17S-35E
Marathon	Staplin State	1	L	20-17S-35E
Marathon	Warn State	1	B	4-18S-35E
Mobil	N.Vac.AboUnit	207	H	24-17S-34E
Pennzoil	Phillips State	1	A	28-17S-35E
Pennzoil	Phillips State	2	F	28-17S-35E
Phillips	Vac.AboUnit	6-68	H	34-17S-35E
Phillips	Vac.Abo Unit	1-9	J	27-17S-35E
Phillips	Vac.Abo Unit	7-3	P	27-17S-35E
Phillips	Vac.Abo Unit	7-4	I	27-17S-35E
Phillips	Vac.Abo Unit	9-5	H	33-17S-35E
Phillips	Vac.Abo Unit	13-2	E	4-18S-35E

<u>OPERATOR</u>	<u>LEASE</u>	<u>WELL NO.</u>	<u>UNIT</u>	<u>SEC-TWP-RGE</u>
Phillips	Vac.Abo Unit 14-3		N	5-18S-35E
Phillips	Vac.Abo Unit 14-4		L	5-18S-35E
Shell	State V	6	P	27-17S-35E
Shell	State K	1	O	19-17S-35E

EXHIBIT "C"
ORDER NO. R-5897

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7226
Order No. R-6685

APPLICATION OF ENSERCH EXPLORATION,
INC. FOR SALT WATER DISPOSAL,
ROOSEVELT COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 22, 1981,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 20th day of May, 1981, the Division
Director, having considered the testimony, the record, and the
recommendations of the Examiner, and being fully advised in the
premises,

FINDS:

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

(2) That the applicant, Enserch Exploration, Inc., is the
owner and operator of the Rader Well No. 2, located in Unit C
of Section 32, Township 5 South, Range 33 East, N44W, South
Peterson Field, Roosevelt County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Montoya formation, with
injection into the perforated interval from approximately 7902
feet to 7930 feet.

(4) That said Montoya formation immediately underlies the
Fusselman formation, and Phillips Petroleum Company, which
operates a well producing from the Fusselman formation at a
location some 1731 feet Northwest of said Rader Well No. 2,
appeared at the hearing and objected to applicant's proposed
disposal of water into said Fusselman formation.

-2-

Case No. 7226

Order No. R-6685

(5) That the basis for the Phillips objection is the alleged possibility of disposal water breaking out of the Montoya formation and migrating into the Fusselman producing zone, thereby posing a threat to the oil production from the aforesaid Phillips producing well, its Lambirth "A" Well No. 4.

(6) That the Enserch interpretation of the logs of said Lambirth "A" Well No. 4 below the productive interval of 7314 feet to 7828 feet indicates the presence of two zones of only slight permeability, the first being at a depth from 7840 feet to 7850 feet and the second being at a depth of 7924 feet to 7934 feet.

(7) That while Enserch alleges that these "tight" zones would provide vertical separation between the Phillips producing interval and the Enserch disposal zone, Phillips contends that there is no physical separation between the base of its producing interval in the Fusselman formation and the top of the Enserch disposal interval in the Montoya formation, inasmuch as there are vertical fractures in the Fusselman through which water injected into the upper Montoya could migrate to the upper Fusselman and endanger its producing well, the Lambirth "A" Well No. 4.

(8) That there is evidence of vertical fracturing in the Fusselman formation in this area.

(9) That while the extent of said fracturing is not known, the vertical fractures may well extend through the "tight" zones Enserch relies upon to keep the disposal zone and the productive zone separated.

(10) That should said fractures extend through the "tight" zones, said zones's efficacy as an efficient barrier would be diminished and the Phillips production could be subject to water invasion.

(11) That such water invasion could result in premature abandonment by the Phillips production, thereby causing loss of otherwise recoverable hydrocarbons and waste of oil and gas, as well as impairment of correlative rights.

(12) That there is no means presently available whereby the migration of injected water could be monitored and a determination made of imminent water invasion in the Phillips well prior to its actual occurrence, at which time it could be too late to prevent loss of hydrocarbons.

-3-

Case No. 7226
Order No. R-6685

(13) That Enserch has not investigated all other possible means of water disposal in the subject area.

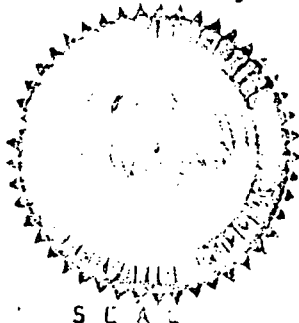
(14) That the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Enserch Exploration, Inc., for salt water disposal into the Montoya formation in the perforated interval from 7902 feet to 7930 feet in its Radar Well No. 2, located in Unit E of Section 32, Township 5 South, Range 33 East, NMPM, South Peterson Field, Roosevelt County, New Mexico, is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

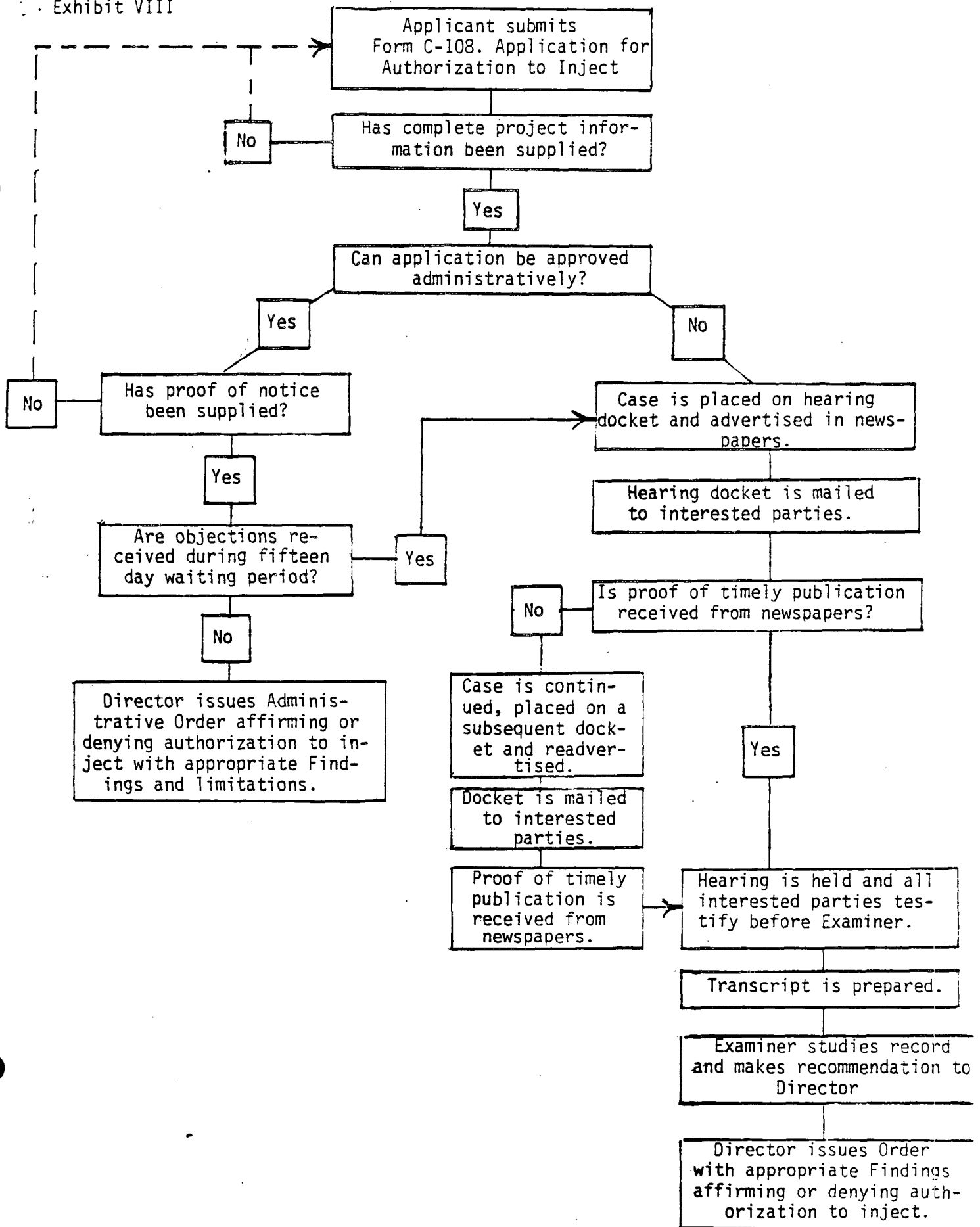
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Joe D. Kamey
JOE D. KAMEY
Director

fd/



PROGRAM DESCRIPTION EXHIBIT 9

Effectiveness of Existing State Program by

R. L. Stamets, OCD Technical Support Chief

During the process of EPA review of the Division's submittal of New Mexico's Draft UIC Primacy Application, questions were raised as to the efficiency of the existing program relative to pre 1975 projects without pressure limits in the authorizing permit.

It is the Division's position that our inspection-corrective action program, our statutes, and our rules give us the ability to locate any problems related to injection operations and remedy the same. Further, we believe that well construction elements protect USDWs even in the case of well failure or fluid out-of-zone while detection and remedial operations take place. A more detailed discussion of each of these items follows:

INSPECTION - CORRECTIVE ACTION

The requirements of Section 1425 guidance call for mechanical integrity testing at least once every five years with 25% of such tests to be witnessed. New Mexico's program far exceeds this standard in that at this time essentially every well is tested every year with every test being witnessed. This is a program begun in District I (Hobbs) in 1974, extended to District II (Artesia) in 1979, and District III (Aztec) in 1981.

The inspection program detects both mechanical failures and water out-of-zone, if any, permitting the Division to require corrective action. At my request, District I prepared a report entitled "District I Approach To The Confinement of Water in Waterfloods And The Protection of Fresh Water Supplies". This report chronicles the history of the inspection - corrective action program in that district, discusses actual corrective action taken, illustrates that casing and cementing programs protect fresh waters (USDWs) even when there is a well failure as close as 150 feet, shows actual casing and cementing programs (well bore sketches) and shows a district map with waterflood and problem areas. While the report speaks for itself, I believe that reader can conclude that the Division's program finds bad wells, corrects bad wells, and protects USDWs.

Discussions were held with District II personnel relative to their more recent inspection - corrective action program and its results. The following summarizes the important issues coming from these discussions:

1. The program is in its third year with 100% of the injection wells being tested and witnessed for the last two years.

2. As a result of the surveys, operators have been ordered to take corrective action on 107 wells.

Illustrations of corrective action include:

(a) Artesia Pool project in the SE quadrant of T17S-R28E: the operator had the choice of replugging three old wells or depressurizing part of the project. After back flowing over 300,000 barrels from 5 wells, problem wells were reduced from 20 to 1. Backflowing continues.

(b) Shugart Pool area T18S-R31E:
One operator was given the option of recementing a shallow zone in a number of wells or ceasing injection therein. Discontinuance of shallow injection has reduced problem wells from 16 to 2.

One operator disposing of saltwater at 2500 feet with 2500 psi was required to cease injection and plug his well. Problem wells have declined from 13 to none.

(c) Loco Hills Pool - two projects in the Northern part of T18S-R29E:

Two operators were given the option of repairing or plugging numerous wells and reducing pressures or shutting down injection. After reducing injection to produced water volumes only, within the problem area, and discontinuing injection within one-half mile of suspect poorly plugged wells, problem wells were reduced from 42 to two.

3. The attached "District II Project" map and "Typical Well Completion" crossection shows that most projects are located outside the area of major aquifers in the district. The crossection also shows typical completion techniques that would protect any USDWs or isolate aquifers above the salt section in the eastern part of the district from out-of-zone waters.

The District III project has as yet revealed no more than an occasional case of equipment failure and nothing which could be considered a threat to USDWs. If such should turn up, appropriate action will be taken.

STATUTES AND RULES

These items are covered throughout the Program Description and clearly show that the Division has the authority to require corrective action even to the point of shutting a well or project down.

WELL CONSTRUCTION

In Districts I and II all known USDWs lie above the salt section in the area East of the Pecos River. Standard casing practice is to set casing to the top of the salt and cement such casing to the surface. Intermediate and/or production casing is set and cemented at some greater depth. Water out-of-zone, if any, is contained between the surface casing and the production casing where its presence may be detected triggering corrective action. The salt section itself serves to protect the overlying USDWs where, because of the nature of the salt, out-of-zone fluids move laterally at the base thereof rather than vertically. This further acts to reduce pressures opposite any shallow USDWs. West of the Pecos, surface and/or intermediate casing is set through all USDWs and cemented to the surface. No problems have been found at any project West of the Pecos. There is no injection into the Capitan Reef. Some minor back reef oil pools have been waterflooded. If a USDW was present at such a location it would qualify for exempt aquifer status.

CONCLUSION

We believe that New Mexico's program more than meets the basic requirements relative to existing wells and projects, including wells and projects permitted prior to 1975, as contained in the Administrator's regulations. We further believe that New Mexico leads the nation in the inspection-corrective action process and that we should be allowed to continue therewith in order to help EPA understand and act upon the results of inspection-corrective action programs that will soon begin nationwide.

DISTRICT I APPROACH TO THE CONFINEMENT OF WATER IN
WATERFLOODS AND THE PROTECTION OF FRESH WATER SOURCES

September 1981

Program Description
Exhibit 9

DISTRICT I APPROACH TO THE CONFINEMENT OF WATER IN WATERFLOODS AND THE PROTECTION OF FRESH WATER SOURCES

The confinement of water to the injection zone can be accomplished by the following methods:

- (1) Re-enter improperly plugged wells and plug wells in such a manner that will isolate injection zone.
- (2) Prohibit injection within a one-half mile radius of a poorly plugged well.
- (3) Limit volume of injected water to produced water or a voidage figure.
- (4) Log wells to determine if water is entering injection zone.
- (5) Flow-back of injection wells in problem areas to reduce pressure.
- (6) Cement casing strings to prevent any migration of injected water up to the fresh water aquifer.

To date all of the above methods have been used in Southeast New Mexico to control injection problems. In most instances a combination of the above has been used with the decision of what method to be used reached at meetings with operators of wells in the area. The steps taken to date have been working as we have protected the fresh water in this area.

One example of fresh water protection is in Section 6, Township 18 South, Range 35 East, Lea County, NM, (Vacuum Area) where a fresh water well is located within 150 feet of three wells (2 producing oil wells and 1 water injection well) which had waterflows to the surface. You will note on the wellbore diagrams of the three wells concerned that they are cemented off from beneath the fresh water zone. (see Exhibit 1) A recent test of the fresh water well shows no contamination.

We feel the bradenhead test is one of the best methods available for use in locating the problem on a particular well. In 1974 District I began a limited bradenhead test program, and as you will see from the chart below the program has grown considerably over a period of a few years.

-2-

District I Approach to the Confinement of Water in Waterfloods and the Protection of Fresh Water Sources

In the beginning bradenhead surveys were set up for a small area around a water flow in order to attempt to determine the extent of the problem, but as time passed, a need for a more extensive surveillance of the injection wells became apparent. In 1980 our District began a policy of testing all injection and salt water disposal wells each year. In addition to this, we also test producing wells within certain flood areas where the test of injection wells indicate this should be done in order to maintain the integrity of the testing program. Also, we have found the testing of producing wells in flood areas to be very important since a major portion of the problems occur on producing wells within a flood area.

PERCENTAGE OF INCREASE IN DISTRICT I BRADENHEAD TEST PROGRAM

<u>Year</u>	<u>Prod Wells Dist. I</u>	<u>Prod.Wells Tested</u>	<u>Percentage</u>	<u>Inj.Wells Dist. I</u>	<u>Inj.Wells Tested</u>	<u>Percentage</u>
1974	11,717	747	6.3%	1,632	142	8.7%
1975	11,364	775	6.8%	1,695	189	11.1%
1976	11,283	863	6.6%	1,761	174	9.9%
1977	11,436	1,177	10.3%	1,784	239	13.4%
1978	11,548	1,370	11.9%	1,900	420	22.1%
1979	11,915	1,352	11.3%	1,936	625	32.3%
1980	11,919	2,130	17.9%	2,179	2,179	100.0%
1981	11,825	2,620	22.2%	2,273	2,273	100.0%

The map of District I (Exhibit 2) shows the waterflood areas and two areas where we have had waterflow problems are outlined. The following is a brief summary of what this office has done to protect the fresh water in these areas.

EUNICE AREA -- It became apparent in 1974 that water being injected into the Queen and San Andres formations was showing up above the salt section in an area located just south of Eunice, NM, in Townships 21 and 22 South, Range 37 East. At that time the Division and an Industry Committee began a study of the problem and it was decided to attempt to confine the problem in the

-3-

District I Approach to the Confinement of Water in
Waterfloods and the Protection of Fresh Water Sources

following manner:

- (1) Reduce total injected water to 100--150% of reservoir voidage
- (2) Reduce injection pressures of major floods in the area
- (3) Recement certain wells in the area with sufficient cement to ensure the isolation of the Queen and San Andres formations
- (4) Replug certain wells in the area which could possibly allow migration of injected water
- (5) Run temperature surveys, bond logs, and radio-active tracer surveys to determine if remedial work is required.
- (6) Repair surface waterflows by cementing
- (7) Conduct bradenhead tests on all wells in the area to monitor the problem

At the outset of the program in the Eunice Area 39 wells were recemented to ensure the isolation of the injection zone, 5 wells were replugged in a manner adequate to prevent the migration of injected fluids, and 14 wells with surface waterflows recemented in a manner adequate to protect the fresh water.

A bradenhead survey was witnessed on all wells in the area quarterly for three years and has been witnessed yearly since that time. On the most recent survey of this area 597 wells were tested and only 5 surface waterflows were found, or less than 1% of wells tested.

Letters requesting repair of these problems have been written and a Field Inspector will witness the workovers to ensure they meet our specifications.

VACUUM AREA -- The possibility of a waterflow problem was first noted in this area in 1975, and at that time the Oil Conservation Division did a study of two waterfloods in the area, the Texaco Inc. Vacuum GB-SA Unit and the West Vacuum Unit. Bradenhead tests were run on the 75 unit wells and approximately 10% of the wells exhibited waterflows from the surface casing. In 1976 the

-4-

District I Approach to the Confinement of Water in
Waterfloods and the Protection of Fresh Water Sources

area of study was extended to include 199 more wells and of these 13% had waterflows from the surface.

After an extensive study by the Division and an Industry Committee, composed of operators of the area floods, we chose to attempt to confine the waterflow problem in this area by the following methods:

- (1) Conduct bradenhead test on remaining wells in the area
Evaluate test to determine the size of the problem
- (2) Confirm cement tops on wells in the area in order to determine if the injection zone (Grayburg-San Andres) was isolated
- (3) Run bond logs on wells where cement tops were not available to determine if injection zone was isolated by cement
- (4) Run radio-active tracer surveys and temperature surveys to determine if injected water was going into flood zone
- (5) Require the recementing of wells that did not show adequate cement for the protection of fresh water
- (6) Require the replugging of wells suspected of being inadequately plugged
- (7) Require the repair of waterflows by cementing

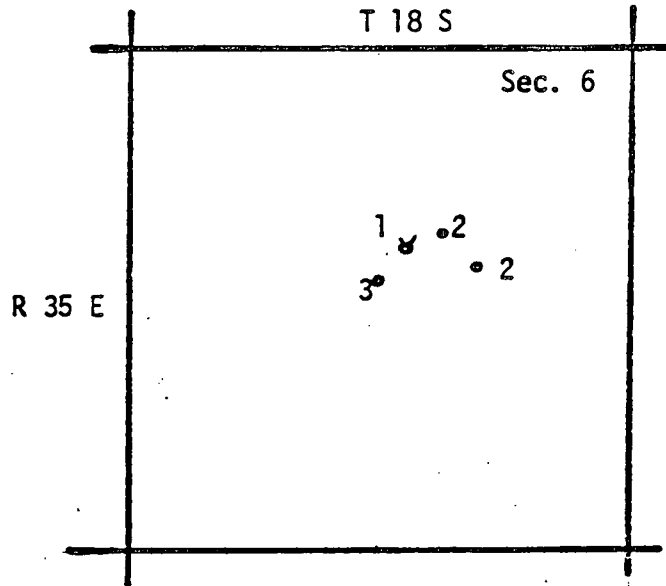
There are 1314 wells in this area and during 1979 and 1980 the operators of the floods and the producing wells in this area repaired 137 wells or 10% and replugged 30 wells to prevent the migration of fluids. The area was retested in May and June of this year and at that time only 30 waterflows were found, or 2.3% of wells in area.

Letters requesting the repair of the above problems have been written and these workover jobs are witnessed by an OCD Field Inspector to ensure that the work is done according to our specifications. This area will be tested again next year to see if the area is stable.

Exhibit 1
Page 1

To Program
Description
Exhibit 9

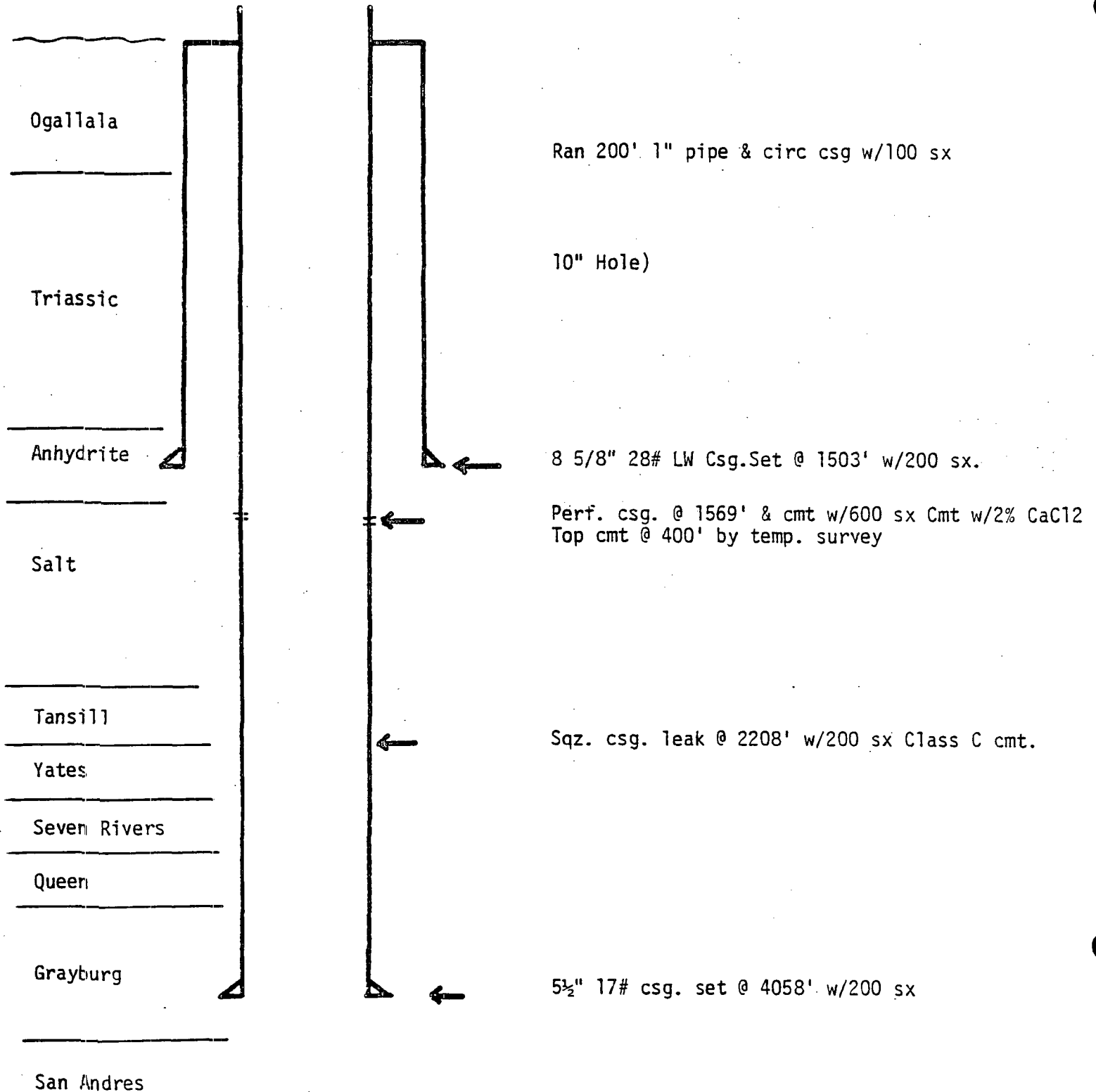
SECTION PLAT
SHOWING LOCATION OF FRESH WATER WELL
AND PRODUCING AND INJECTION WELLS



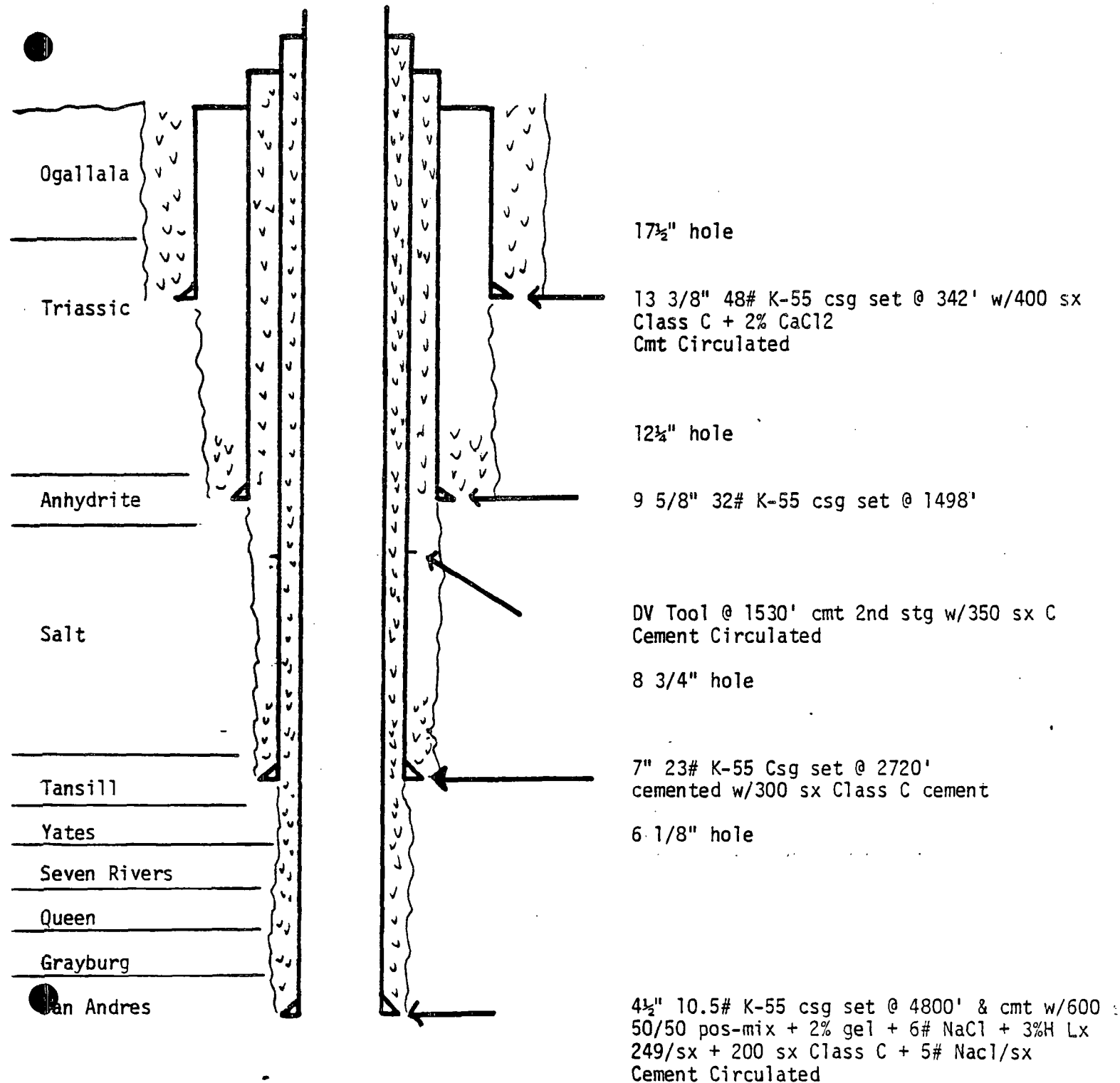
- 1 Fresh Water well
- 2 Producing well
- 3 Injection well

TEXACO INC.
Central Vacuum Unit #103-G
(1980/N & 1980/E)
Sec. 6, T18S, R35E
Producing Oil Well
Completed 10-30-39

To Program
Description
Exhibit 9

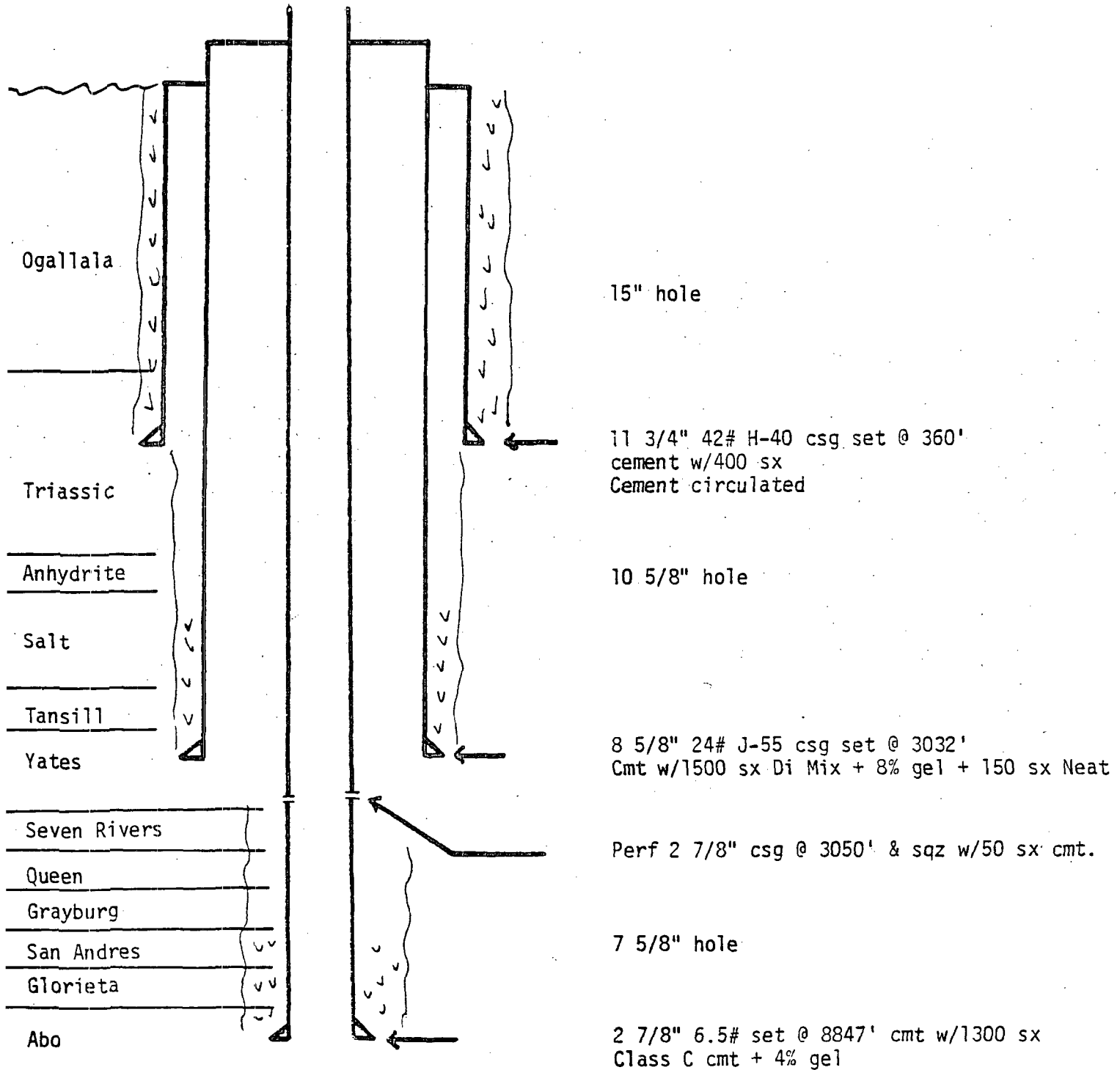


TEXACO INC.
Central Vacuum Unit #107-G
(2450/N & 2632/E)
Sec. 6, T18S, R35E
(completed 6-28-79)
Water Injection Well



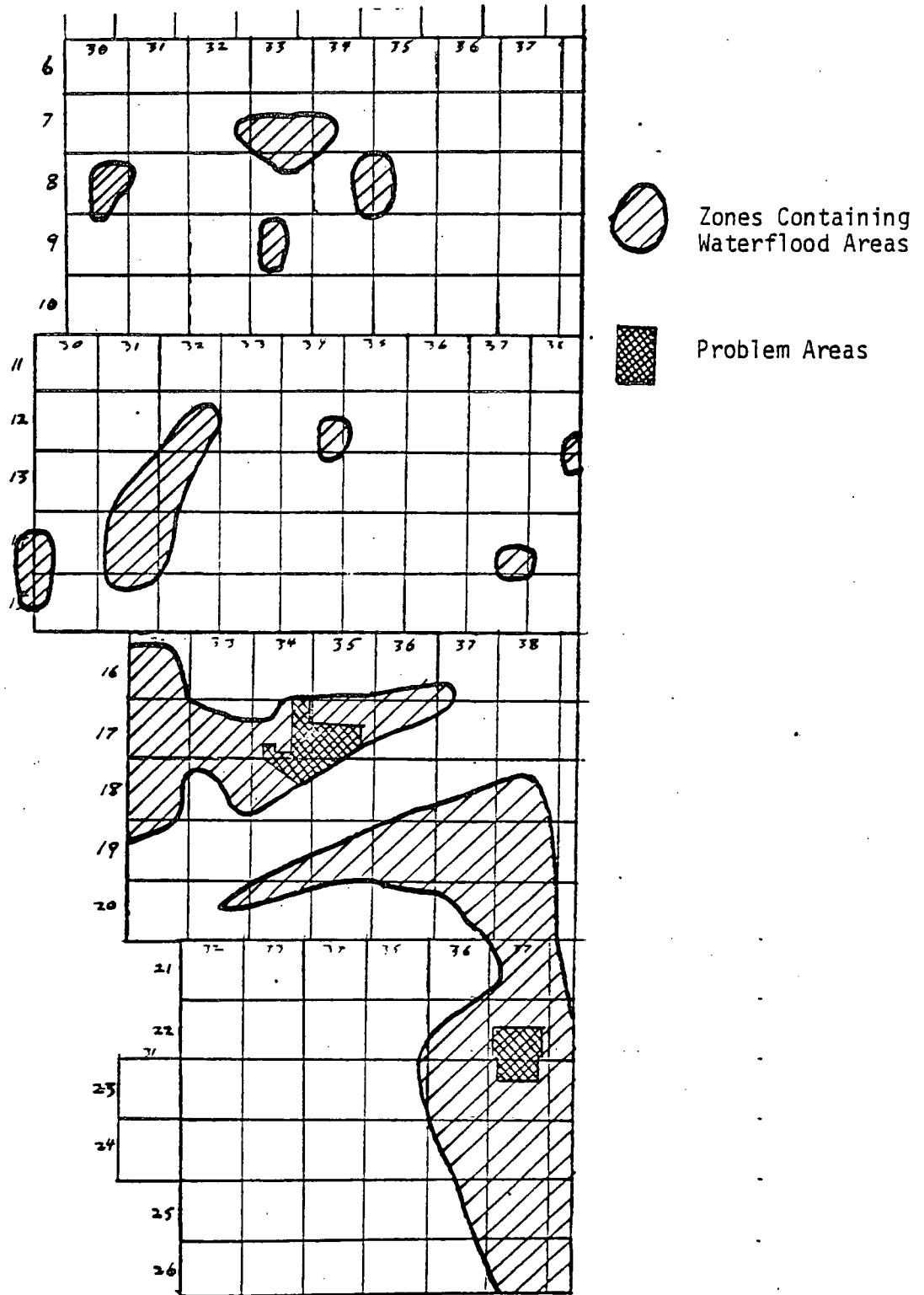
TEXACO INC.
New Mexico R State NCT-1 #7-G
2310/N & 1650/E
Sec. 6, T18S, R35E
Completed 7-21-63
Vacuum Abo Reef Producing Well

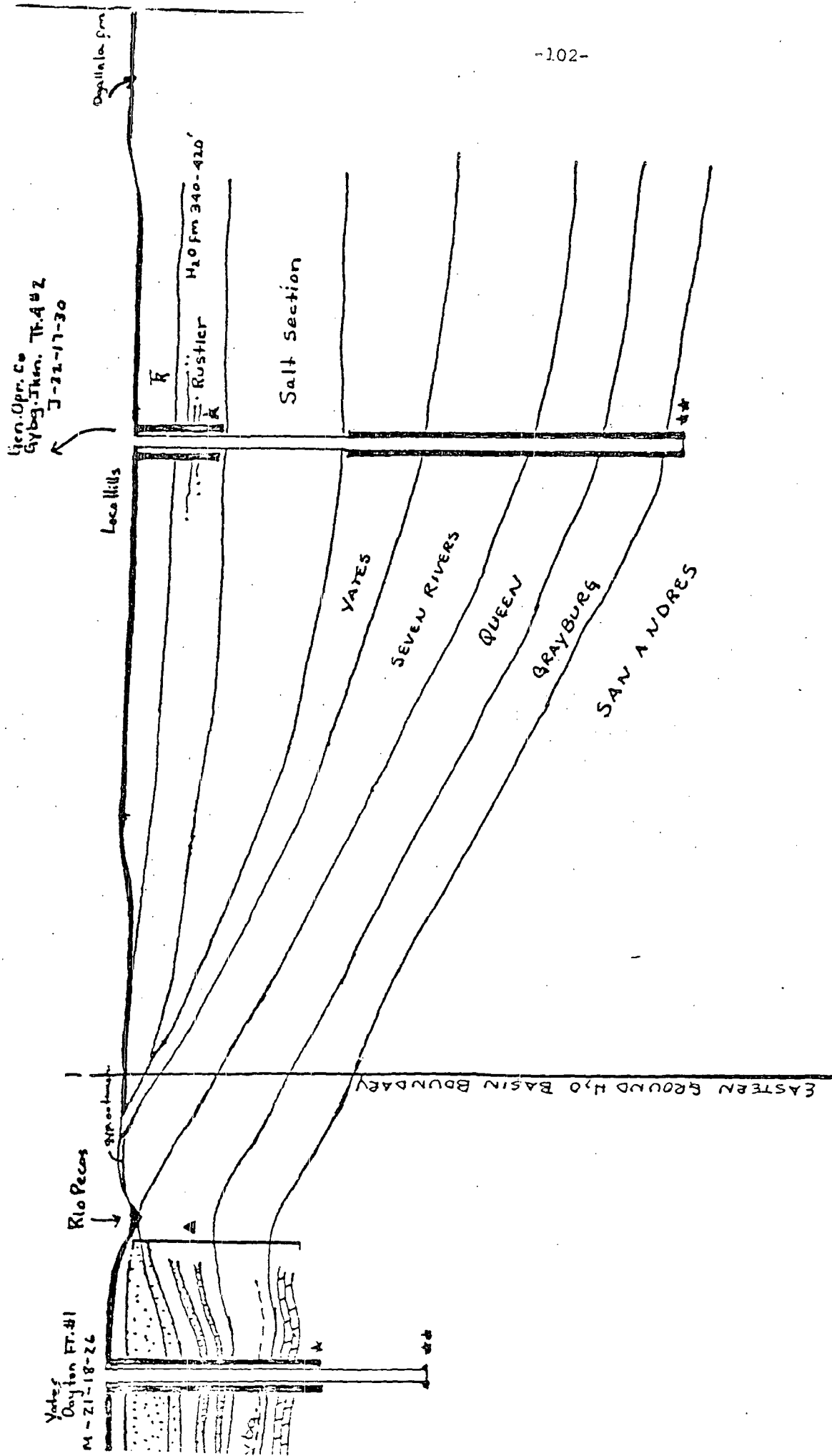
Exhibit 1
Page 4
To Program Descrip-
tion Exhibit 9



DISTRICT I MAP

To Program Description
Exhibit 9





Lien. Oppr. Co.
Gybg. Jkn. Tr. A #2
J-22-17-30

Typical Well Completions: E & W of the Pecos River, Eddy Co. NM.

★ Sur. csq. landed @ 1201', cmt. circ. 8 3/8" csq.
★ Prod. csq. landed @ 1780', cmt. 173 sq. 4 1/2" csq.

Vs: 1/16" = 50'
Hs: NOT TO SCALE.

District II
Program Description






★ Sur. csq. landed @ T. Salt, cmt. circ. 8 3/8"
★ Prod. csq. landed @ 3142', cmt. brought back to B. Salt. TOC 1190', 4 1/2" csq.



PLATE 5.—GEOGRAPHIC INDEX MAP.

District II Project Map

Program Description Exhibit 9

Symbol	Explanation
	Surface H ₂ O Boundary & Shallow aquifer Boundary
	Ground H ₂ O Basin Boundary
	Capitan reef & T Ogallala
	Major H ₂ O flood project or projects.
	Appx. W. limit of San Andres H ₂ O

9/1/81 Prepared By Larry Brooks
Geologist INMOCO DIST. II.

9/1/51

OIL CONSERVATION DIVISION

Guidelines for Plugging Programs

The following is intended for use by Commission personnel only as a guide or check list in preparation of plugging programs. The guide is not all inclusive and care must be exercised in establishing special plugging program in unique or unusual cases.

A. To be determined

1. Land type, State, private, or federal. The USGS normally formulates and/or approves plugging on federal or indian lands.
2. Depth and thickness of:
 - (a) pay zone (perforations or open-hole)
 - (b) porosity zones not covered by casing and cement, and
 - (c) artesian and fresh water zones (including zones of non-drinkable water having total dissolved solids concentrations of 10,000 mg/l or less)
3. Casing to be pulled and depth of casing shoes.
4. Formation tops.
5. Hole use and age (production, disposal, injection, drilling well, etc.).

B. Requirements for old holes

1. Minimum plug size.
 - (a) Not less than 100 feet or 25 sacks, whichever is greater, or,
 - (b) a cast iron bridge plug with 35 feet of cement.
2. Plugs to be tagged.
 - (a) Bottom plugs
 - (b) Plugs at casing shoe or cut-off point.
 - (c) Other isolation plugs if the hole does not stand full.
3. Mud to be used
 - (a) Salt gel mud consisting of 10 pound brine with 25 pounds of gel per barrel.
 - (1) Load hole from total depth to first casing cut-off point.
 - (2) Fill hole to make certain it will hold fluid.
4. Plugs to be set
 - (a) A bottom plug across or above pay.
 - (b) Above and below casing cut points (even if casing is not recovered).
 - (c) To isolate other oil, gas, or water zones exposed in the hole.
 - (d) Across casing shoes.
 - (e) Minimum surface plug of 10 sacks.
 - (f) Above and below artesian water zones.
 - (g) Across fresh water zones (inside and outside the casing).

C. Requirements for new holes

1. Minimum plug size.
 - (a) Same as for old holes.
2. Plugs to be tagged.
 - (a) In unusual cases such as for a well having a water flow, isolation plugs will be tagged.
3. Mud to be used.
 - (a) Drilling mud or salt gel mud as for old wells.
 - (1) Hole should remain full at least 30 minutes after the last plug is set and all tubing is pulled.
4. Plugs to be set
 - (a) Same as for old well except bottom plug may not be required.

Program Description

EXHIBIT XI - ENFORCEMENT ACTIONS



ENERGY AND MINERALS DEPARTMENT

-106-

OIL CONSERVATION DIVISION
ARTESIA DISTRICT OFFICE

Program Descrip.
EXHIBIT XI

September 29, 1980

BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

PC DRAWER 00
ARTESIA, NEW MEXICO 88210
749-1283
749-1283

Yates Drilling Company
207 South 4th Street
Artesia, NM 88210

Re: Federal DY #3
Unit-B, Sec. 28-18-29
Eddy County, New Mexico

Gentlemen:

During our recent braden head survey it was noted you had a water flow out the bradenhead. The New Mexico Oil Conservation Division is asking that this well be repaired in accordance with New Mexico Oil Conservation Division Rules and Regulations by November 30, 1980.

If you have any questions concerning this matter please contact Mike Williams at this office.

Sincerely yours,

Mike Williams
Oil & Gas Inspector

MW:jw

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE*
(Other instructions on re-
verse side)

-107-

Form approved.
Budget Bureau No. 42 R1424.

5. LEASE DESIGNATION AND SERIAL NO.

LC-067348

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal

9. WELL NO.

3

10. FIELD AND POOL, OR WILDCAT

Turkey Tract

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

Unit B

Section 28-18S-29E

12. COUNTY OR PARISH 13. STATE

Eddy

NM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

3461' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF



PULL OR ALTER CASING



FRACTURE TREAT



MULTIPLE COMPLETE



SHOOT OR ACIDIZE



ABANDON*



REPAIR WELL



CHANGE PLANS



(Other)



SUBSEQUENT REPORT OF:

WATER SHUT-OFF



REPAIRING WELL



FRACTURE TREATMENT



ALTERING CASING



SHOOTING OR ACIDIZING



ABANDONMENT*



(Other)

(Note: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

December 1, 1980 -

We propose to fill hole w/frac sand above existing perfs @1910-14'; 1802-10'.

Perforate 4 holes @1550', 50 feet above existing cement. Set cement retainer

@1500', squeeze cement to surface w/100 sacks Hallibuton Lite, 350 sacks Class C.

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Drilling Supervisor

DATE Dec. 8, 1980

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

DEC 12 1980

*See Instructions on Reverse Side

for DISTRICT SUPERVISOR

Form 9-331
(May 1963)UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE*
(Other instructions on re-
verse side)Form approved.
Budget Bureau No. 42 R1421.

5. LEASE DESIGNATION AND SERIAL NO.

LC-067348

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals.)1. OIL WELL ☒ GAS WELL ☐ OTHER ☐2. NAME OF OPERATOR
Yates Drilling Company3. ADDRESS OF OPERATOR
207 South 4th St., Artesia, NM 882104. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*
See also space 17 below.)
At surface

660' FNL & 1980' FEL

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, RT, GR, etc.)

3461' GR

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal D

9. WELL NO.

3

10. FIELD AND POOL, OR WILDCAT

Turkey Tract

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

Unit B

Section 28-18S-29E

12. COUNTY OR PARISH 13. STATE

Eddy

NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

☐
☐
☐
☐

PULL OR ALTER CASING

☐
☐
☐
☐

FRACTURE TREAT

MULTIPLE COMPLETION

SHOOT OR ACIDIZE

ABANDON*

REPAIR WELL

CHANGE PLANS

(Other)

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

☒
☐
☐
☐

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT*

(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)17. DESCRIBE PROMISED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any
proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones perti-
nent to this work.)*

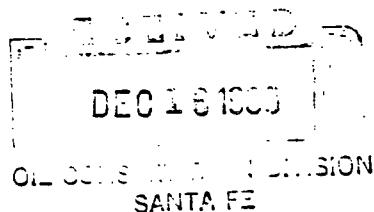
December 1, 1980 - We plugged back with frac sand above existing perfs 1910-14'; 1802-10' Perforated 4 holes @ 1550'. Set cement retainer @1512'. Squeezed w/100 sacks Halliburton Lite, 350 sacks Class C cement. We did not circulate cement to surface.

December 4, 1980 - Ran temperature survey - found top of cement @750', shot 4 holes @700'. Squeezed w/300 sacks Halliburton Lite w/15 lbs salt to sack & 100 sacks Class C 2% CaCl. Cement circulated 75 sacks Halliburton Lite to pit. We propose to temporarily abandon well for further evaluation.

Witnessed by Mr. Weaver, Oil Conservation Division, Artesia.

RECEIVED

DEC 11 1980

O. C. C.
ARTESIA, NM

18. I hereby certify that the foregoing is true and correct

SIGNED [Signature]TITLE Drilling SupervisorDATE Dec. 8, 1980

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

DATE _____



ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
ARTESIA DISTRICT OFFICE

September 30, 1980

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

P.O. DRAWER 00
ARTESIA, NEW MEXICO 88210
748-1283

JEM Resources, Inc.
P. O. Box 648
Artesia, NM 88210

Re: Cave Pool Unit #27-P, 5-17-29
Cave Pool Unit #36-B, 8-17-29
Cave Pool Unit #35-A, "
Cave Pool Unit #26-O, 5-17-29
Cave Pool Unit #49-L, 8-17-29

Gentlemen:

As of this date this office has not received Form C-103 showing the running of tubing and a packer on the #27 and #36 wells.

This report needs to be filed as soon as possible.

Our recent bradenhead survey revealed your #25 & #36 wells have water-flow problems. These wells need to be repaired in accordance with NM Oil Conservation Division Rules & Regulations.

The Cave Pool Unit #49 well has been leaking ever since the well was plugged in 1976. This well needs to be re-entered and replugged in accordance with NM Oil Conservation Division Rules & Regulations.

The notice of intention to repair the above mentioned wells needs to be filed immediately and the work completed by November 30, 1980.

If you have any further questions concerning this matter please call Mike Williams at this office.

Sincerely yours,

Mike Williams
Mike Williams
Oil & Gas Inspector

MW:jw

OIL CONSERVATION DIVISION

P O BOX 2088

SANTA FE, NEW MEXICO 87501

Form O-101
Revised 10-1-79

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	/
FILE	/
U.S.O.S.	
LAND OFFICE	
OPERATOR	/

OCT 2 1980

3a. Indicate Type of Lease
State <input checked="" type="checkbox"/> Free <input type="checkbox"/>
3. State Oil & Gas Lease No.
E 10163

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO REFRILL OR TO RE-LEASE TO A DIFFERENT RESERVOIR. USE APPLICATION FOR PERMIT TO DRILL OR TO RE-LEASE TO A DIFFERENT RESERVOIR.)

1. ☐ OIL WELL ☐ GAS WELL ☐ OTHER: **Water Disposal**

2. Name of Operator

J E M Resources Inc. ✓

3. Address of Operator

Box 648 Artesia, N. Mex. 88210

4. Location of well

UNIT LETTER **P** **990** FEET FROM THE **S** LINE AND **990** FEET FROM
 THE **E** LINE, SECTION **5** TOWNSHIP **17** RANGE **29** N.M.P.M.

7. Unit Agreement Name

CAVE POOL UNIT

8. From or Lease Name

9. Well No.

27

10. Field and Pool, or Wildcat

CAVE-GREG

15. Elevation (Show whether DF, RT, GR, etc.)

3614 Gr

12. County

EDDY

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐TEMPORARILY ABANDON ☐PULL OR ALTER CASING ☐PLUG AND ABANDON ☐CHANGE PLANS ☐OTHER ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☒COMMENCE DRILLING OPNS. ☐CASING TEST AND CEMENT JOB ☐OTHER ☐ALTERING CASING ☐PLUG AND ABANDONMENT ☐☐☐☐☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Pulled Tubing, put on Bit & Casing Scraper. Ran in Hole & Cleaned out to
 2385'. Well is completed open hole from 2346 to 2391.

Ran 2310' Plastic Lined Pipe & Plastic Coated Packer. Circulated Hole
 with 2% KCL water & set packer at 2314'. Pressured up on Casing to 600#,
 no leak off. Treated formation with Surfactant & 15% acid.

Put Well back on Disposal & it takes all the produced water with minimal
 pressures.

NOV 05 1980

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SANTA FE

SIGNED

PRES.

DATE 10-29-80

APPROVED BY

TITLE OIL AND GAS INSPECTOR

DATE

NOV 03 1980

CONDITIONS OF APPROVAL, IF ANY:



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

July 3, 1980

POST OFFICE BOX 1990
HOBBS, NEW MEXICO 88240
(505) 393-5161

Pontotoc Oil Corporation
P.O. Box 5094
Midland, Texas 79701

SUBJECT: Wells Suspected of Being Inadequately Cemented
Hobbs State #1, Unit F, Sec. 29, T18S, R38E
Hobbs State #2, Unit G, Sec. 29, T18S, R38E

Gentlemen:

You have two wells, Hobbs State #1 and #2, in the Hobbs-Drinkard Pool which may not be adequately cemented to prevent migration of fluid from the Hobbs-Grayburg-San Andres formation to other zones. Shell Oil Company is installing a waterflood project in the Grayburg-San Andres zone and the cement top behind the production casing in the above wells needs to be confirmed.

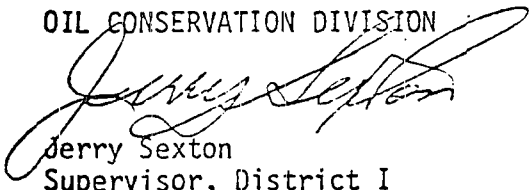
Our rules state that cement must be brought 600 feet above any producing interval.

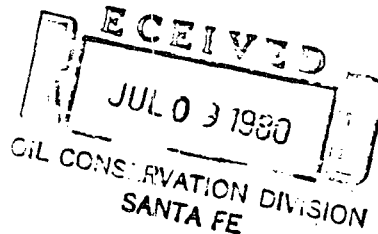
If temperature surveys were run on the original completions, please submit these logs to the Hobbs Oil Conservation Division Office. If temperature logs are not available, you are requested to run bond logs to determine if the Grayburg-San Andres zone is cemented in such a manner as to prevent fluid migration from the zone. If the temperature surveys or bond logs show the wells are not adequately cemented, recementing of the wells will be required.

You are requested to notify the Hobbs OCD Office 24 hours in advance of doing any work on the subject wells. Also, it is requested that this work be completed by September 1, 1980.

Yours very truly,

OIL CONSERVATION DIVISION


Jerry Sexton
Supervisor, District I



ed/JS

cc: R.W. Phillips, Shell Oil Co. P.O. Box 991, Houston, TX 77001
Joe D. Ramey, OCD- Santa Fe, NM
R.L. Stamets, OCD- Santa Fe, NM
File

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

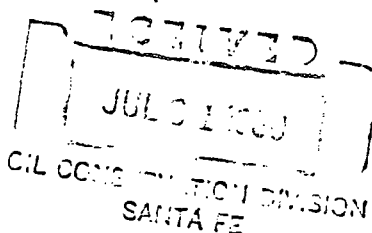


BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

July 30, 1980

POST OFFICE BOX 1080
HOBBS, NEW MEXICO 88240
(505) 393-6161



Mr. Gordon G. Marcum
Pontotoc Oil Corporation
P.O. Box 5094
Midland, Texas 79701

SUBJECT: Wells Suspected of Being Inadequately Cemented
Hobbs State #1, Unit F, Section 29, T18S, R38E
Hobbs State #2, Unit G, Section 29, T18S, R38E

Dear Mr. Marcum:

After examining the cement bond log on your Hobbs State #1-F in Sec. 29, T18S, R38E, and the cement and casing records on the Hobbs State #2, it is agreed that additional cementing work will not be required at this time.

At a later date some additional cementing on the above wells may have to be done since about 30 feet of formation below the intermediate casing shoe in the Hobbs State #1 is not cemented, but the casing in the well will prevent any migration of fluids out of zone.

Yours very truly,

OIL CONSERVATION DIVISION

Jerry Sexton
Supervisor, District I

cc: Shell Oil Company - Attn: Bob Phillips
Mr. J.D. Ramey
Mr. Prentiss Childs

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

July 25, 1980

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 333-6161

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

Mr. Keith Spradlin
Union Oil Company of Calif.
Route 1
Lovington, NM 88260

SUBJECT: Nix 24 SWD Well #1
F-35-18-46

Gentlemen:

The Oil Conservation Division witnessed a requested retest of your Nix 24 SWD well #1 on July 23, 1980, and as a result of this test we will not require any repair work be done on this well at the present time.

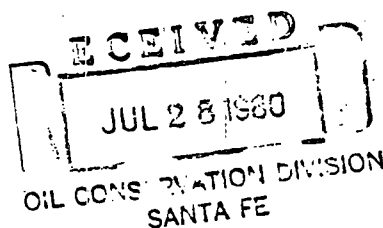
Very truly yours,

OIL CONSERVATION DIVISION

Jerry Sexton
Supervisor, District I

ed

cc: J.D. Ramey
R.L. Stamets
File



STATE OF NEW MEXICO



ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICEBRUCE KING
GOVERNORLARRY KEHOE
SECRETARY

August 20, 1980

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161Gulf Oil Corporation
Box 670
Hobbs, NM 88240SUBJECT: C.E. LaMunyon SWD #6-A 28-23-37
SWD-204

Gentlemen:

The Oil Conservation Division conducted a casing leak test on your C.E. LaMunyon SWD #6 well August 11, 1980, and it was noted that the injection pressure of 2500 psi exceeds the injection pressure limit of 1865 psi established by SWD Order #204 authorizing disposal into this well.

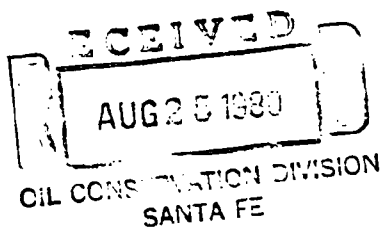
You are requested to take measures to reduce the injection pressure on this well to 1865 psi or below. We will recheck the well in the next few months.

Very truly yours,

OIL CONSERVATION DIVISION

Jerry Sexton
Supervisor, District I

ed

cc: Joe D. Ramey - Santa Fe
R.L. Stamets - Santa Fe
File

Program Descrip.
EXHIBIT XI

J. M. HUBER CORPORATION

OIL AND GAS DIVISION
1900 WILCO BUILDING
MIDLAND, TEXAS 79701

April 9, 1981

MIDLAND DISTRICT OFFICE

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

-115-

TELEPHONE
915-682-3744

OIL AND GAS DIVISION
SANTA FE

File

Case 4280

RE: Stoltz State SWD #1-M in 6-15-34
SWD-230, Sec. 6, T-15-S, R-35-E

Gentlemen:

Disposal into the San Andres and Glorieta formations in the above captioned well was approved by SWD-230 on August 29, 1980. The order specified a limiting injection pressure of 930 psi. During October, 1980, surface injection pressures of 1400 psi were observed. Following this, disposal into this well was restricted so as not to exceed the specified injection pressure of 930 psi. A workover was performed in January, 1981 to reactivate the perforations. Following this work water is currently being injected at a rate of 360 BOPD with a surface injection pressure of 550 psi to 580 psi. A summary of this work is shown on the attached Form C-103.

Very truly yours,

J. M. HUBER CORPORATION

Robert G. Sander
Robert G. Sander
District Production Manager

RGS:dc

Attachments



Program Descrip.
EXHIBIT XI

STATE OF NEW MEXICO

-116-

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
ARTESIA DISTRICT OFFICE

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

March 10, 1980

P.O. DRAWER 00
ARTESIA, NEW MEXICO 88210
(505) 746-4861

Norwood Oil Company
P. O. Drawer BN
Malakoff, Tx 75148

Re: Skelly State Leases
Section 16-T16S-R29E
Eddy County, NM

Gentlemen:

A recent field inspection revealed the following Skelly State wells number 13-A, 14-B, 23-H, 24-G and 25-F, all in section 16-16-29, have not taken water for sometime.

Whenever there is a continuous six month period of non-injection in to any injection project, salt water disposal well or special purpose injection well, such project or well shall be considered abandoned and the authority for injection shall automatically terminate ipso facto.

The Division is asking that all abandoned water injection facilities be plugged and abandoned in accordance with the Division Rules and Regulations.

It was noticed that there are two wells, one located in Unit B and one located in Unit F of 16-16-29, that are possibly water supply wells that should also be plugged and abandoned.

If you have any further questions concerning this matter please contact me at this office.

Sincerely yours,

Mike Williams
Mike Williams
Oil & Gas Inspector

MW:jw

COMPLAINT TAKEN BY: _____ DATE: _____ TIME: _____

PERSON COMPLAINING: _____ IN PERSON: _____ PHONE: _____

Name: _____ Complaint: _____

Address: _____

Phone: _____

INVESTIGATION

INVESTIGATOR: _____ DATE: _____ TIME: _____

DESCRIBE INVESTIGATION AND FINDINGS: _____

ACTION TAKEN: _____ DATE: _____ TIME: _____

PROGRAM DESCRIPTION

Exhibit 13

During the process of EPA review of the Division's submittal of New Mexico's Draft UIC Primary Application, questions were raised relative to the reference to the State Engineer, his designation of fresh water supplies to be protected, and what constitutes reasonable protection thereof. These questions all relate to Section 70-2-12 B.15 NMSA 1978 Compilation referenced in the Statement of Legal Authority.

It is believed that the following brief historical review will resolve these questions.

HISTORY

In the distant past the Oil Conservation Division's duties were limited primarily to the prevention of waste of oil and gas and the protection of correlative rights. Responsibility for protection of the State's surface and subsurface waters was assigned to the State Engineer (now the Water Resources Division of The Natural Resources Department). For many years the Division and the State Engineer cooperated and coordinated their separate programs to achieve the goal of water protection. During the 1960s the Legislature assigned the responsibility for water protection related to oil and gas operations clearly to the OCD while recognizing the historic expertise of the State Engineer by providing for his direction in establishing parameters for waters to be protected. An April 13, 1967, letter, copy attached, shows that 10,000 parts per million TDS was picked as the figure for underground waters to be protected. This figure is consistent with that contained in the Administrator's regulations and the regulations of the New Mexico Water Quality Control Commission which succeeded the State Engineer in the setting of water standards.

Historically the term "reasonable protection" and the non-designation of waters where "there is no present or reasonably foreseeable beneficial use" have set a standard for the OCD higher than that required by the Administrator in protecting USDWs. This occurs because the designation is not limited to current or prospective public water supplies but includes waters suitable for domestic use, stock watering, and irrigation. The Division has historically used considerations equivalent to those spelled out in the Administrator's aquifer exemption rules in making determinations relative to protection of New Mexico's water resources.



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, NEW MEXICO 87501

S. E. REYNOLDS
STATE ENGINEER

April 13, 1967

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, New Mexico

Dear Mr. Porter:

All underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids is hereby designated by the State Engineer pursuant to Section 65-3-11. (15) N.M.S.A., 1953 Compilation; except that this designation shall not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination. This designation supercedes all previous designations pertaining to underground water.

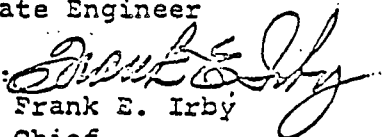
For your information I am attaching a memorandum dated April 10, 1967 and the map mentioned therein which shows the areas and formations in which water of 10,000 parts per million or less commonly occurs.

The surface water designation previously made remains unchanged.

FEI/ma
encl.

Yours truly,

S. E. Reynolds
State Engineer

By: 
Frank E. Irby
Chief
Water Rights Div.

APPENDIX I - N.M. State Demonstration for Class II Wells

AQUIFER DESIGNATION FOR UIC:
PROTOTYPE STUDY IN SOUTHEASTERN NEW MEXICO

Submitted to:

Oil Conservation Division
Department of Energy and Minerals
State of New Mexico

Prepared by:

Mike Holland, Oil Conservation Division
Lee Wilson, Lee Wilson and Associates, Inc.
Mike Stahl, Lee Wilson and Associates, Inc.
Dave Jenkins, Lee Wilson and Associates, Inc.

December 17, 1979

Santa Fe, NM 87501

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Alternative 3: Boundary Based on Porosity	12
Alternative 4: Combination of Designation Techniques	13
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- Figure 4. Surface Geology
- Figure 5. Potentiometric Surface of Shallow Aquifer
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- Figure 7. Water Quality Wells Plot
- Figure 8. Location of Shallow Oil and Gas Pools
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- Table 4. Lithologic Descriptions

NOTE: PRELIMINARY DRAFT DOCUMENT. FIGURES AND TABLES HAVE NOT BEEN PRODUCED IN FINAL FORMAT; ABOVE LISTING HAS CORRECT TITLES.

AQUIFER DESIGNATION FOR UIC:
PROTOTYPE STUDY IN SOUTHEASTERN NEW MEXICO

INTRODUCTION

The New Mexico Oil Conservation Division (OCD), in conjunction with Lee Wilson and Associates, has performed a prototype study to implement the aquifer designation regulations which are proposed as part of the Federal Underground Injection Control program. Designation criteria require protection of aquifers which are currently used for drinking water or which have a total dissolved solids (TDS) content of less than 10,000 mg/l. However, aquifers may be exempted from designation if they are or will be used for mineral, oil or geothermal energy production, or if they cannot provide drinking water for reason of economics, technology or gross contamination.

In New Mexico, state regulations already require that ground water with a TDS less than 10,000 mg/l be protected against virtually all types of pollutant discharge. UIC goes beyond the State programs by requiring explicit identification and mapping of the areas to be protected. However, aquifers

protected under State regulations could be exempted from protection under UIC in areas of mineral, oil or geothermal energy production. Because the concept of designation or exemption is new, and standardized procedures are not available, the process of aquifer evaluation is potentially difficult, complex, and time-consuming; it may be expensive in terms of the commitment of resources for data gathering and interpretation. A prototype study is needed to develop procedures and evaluate the complexity and expense of the aquifer-designation process. The prototype reported here involved all steps in the process except for those related to a formal public hearing.

The project described here involved the mapping of aquifers in a 144-square-mile area near Artesia, in Eddy County (Figure 1). Characteristics of the area include the following:

1. Both artesian water and oil are produced from the same geologic unit, the San Andres Formation of Permian age. This situation is characteristic of much of southeastern New Mexico and implies that boundary-setting in aquifer designation must be precise.
2. Injection into the San Andres is practiced both for secondary recovery and brine disposal; thus the

potential for contamination is significant and the role of UIC designations as a protective tool becomes important.

3. Considerable information on the area has already been compiled by agencies or private companies (for example, water-level maps). Additional data can be readily obtained (for example, porosity values can be read from modern geophysical logs).

METHODS AND DATA

Geologic, hydrologic, and energy-resource data for the study area were gathered from published reports and the files of federal, state and local agencies concerned with water or energy resources. Information on salinity and porosity was developed in part from geophysical logs produced from new, deep gas wells which penetrated the Grayburg-San Andres interval. The Dual Laterlog and Compensated Neutron Log were utilized to determine resistivity of formation fluids and formation porosity. With proper borehole corrections, these logs provide an accurate assessment of fluid salinity. However, data are generally available only for deeper formations, since wells are required to be cased through formations known to contain potable water. The data were compiled into four tables (Tables

1 to 4), which include geohydrologic information, records of water wells, and records of oil, gas and injection wells (including geophysical data wells), and lithologic descriptions. The tables were then interpreted to produce maps basic to the aquifer designation process (see Figures 2 through 9); the maps present structural contours, potentiometric surfaces, the location of shallow oil and gas pools, and the location of information wells.

The maps and tables were used to develop Figure 10, a cross-section of the study area. This cross-section portrays most of the information needed to make aquifer designations. The section shows the location of fresh water, oil and gas pools, geologic boundaries, potentiometric surfaces of shallow and artesian aquifers, and representative wells. Figure 10 is used as the base for the various designation options considered in the Results section.

The geology of the study area (see Figures 2, 3 and 4) reflects its position as a backwater depositional zone in the Permian Reef complex of New Mexico and Texas. Dolomites predominate, with limestone increasing southeastward toward the reef, and redbeds and evaporites increasing north and west onto the shelf. In general, the Permian units dip toward the southeast and thicken in the same direction.

The principal aquifer and hydrocarbon-producing zones both occur within the San Andres Formation, which lies between the Grayburg Formation of the Artesia Group, and the Glorieta Sandstone. This formation is therefore the critical interval for UIC protection. Two separate porosity horizons are situated within the San Andres. The upper horizon is a high-porosity (20 per cent) interval which contains an artesian aquifer and some isolated hydrocarbon development. The artesian quifer underlies most of the area. The Aquifer includes much of the Grayburg as well as and the upper, porous zone of the San Andres. The water contains less than 3000 mg/l dissolved solids, except in the southeastern part of the map area where oil is produced from the lower Grayburg.

The lower horizon corresponds to the Slaughter dolomite zone, where locally developed porosity contains oil and gas, and total dissolved solids exceed 10,000 mg/l. A zone of low porosity apparently acts as a confining horizon, or permeability barrier, which separates the aquifer from the Slaughter zone and the oil pools.

Data on geohydrology and water quality in the area (see Tables 2 and 3, Figures 5, 6, 7) indicate that although fresh water is found to the base of the San Andres in some locations,

there is no water production below the artesian aquifer. (However, fresh water is found beneath the San Andres in the Roswell Basin outside the study area; see Gross et al., 1978).

In most locations, fresh water is not found in wells which penetrate below the artesian aquifer. However, resistivity data indicate that fresh water may extend to the base of the San Andres in some locations (Arrow A, Figure 10). In all such cases, geophysical logs indicate that the fresh water occurs in rocks with low porosity (averaging less than 7 percent), suggesting that the water is interstitial. No fresh-water yield is obtained from any well which penetrates below the artesian aquifer. Water in the Glorieta exceeds 10,000 mg/l in all geophysical data wells.

In units east of the Pecos River, water contains more dissolved solids than in corresponding units west of the river. Most fresh-water production comes from the Yates Formation, with dissolved solids values which can be as low as 1,000 mg/l, but are generally above 4,000 mg/l.

A shallow aquifer extends from the western portion of the prototype area to the Pecos River (Figures 4 and 5). The aquifer includes the valley alluvial fill and upper portion of the Seven Rivers Formation. Little information is available for the lower Seven Rivers and Queen Formation, below the shallow aquifer, since they serve only as a minor source of water within the basin.

Shallow hydrocarbon development occurs primarily in the eastward-dipping Slaughter zone within the San Andres Formation (see Table 3; Figures 8 and 10). Six million barrels of oil have been pumped from over 400 wells in 10 pools which occur in the prototype area. Production has depleted to non-profitable levels in most wells and underground injection is applied for enhanced recovery in the Atoka San Andres, Atoka Grayburg, and Red Lake pools (Figure 8). Salt-water disposal is active in two wells.

Subtle changes of strike and dip and effective porosity development within the Permian units control regional pinchouts of hydrocarbon production, and separate many pools produced within similar horizons. Absence of vertical permeability development within the San Andres protects the artesian aquifer against oil migration from lower depths. Hence, contamination

of the artesian aquifer by the underlying oil pool is unlikely. Local porosity along the Artesia Vacuum Arch within the Grayburg creates some oil production from facies above the Slaughter zone. Here, absence of vertical permeability development also protects the artesian aquifer. This trend continues east across the Pecos River in zones separated by permeability barriers. Most of these shallow pools have been depleted to production rates of less than one barrel per day per well.

Several points developed in the Methods section affect the four aquifer designation alternatives considered below. A considerable amount of fresh water which must be protected against contamination by underground injection is available in the study area. The shallow aquifers do not affect the designation process since they are underlain by the deeper artesian aquifer. Thus designation of the deeper aquifer will also protect the shallow aquifers. While oil production takes place as high as the top of the Grayburg, and fresh water is found to the base of the San Andres, no fresh-water production occurs below the artesian aquifer. There is a geologic basis in a large part of the study area for distinguishing between the upper porous horizon containing water and the lower porous horizon containing oil and gas.

RESULTS

Four alternatives were considered in the prototype study; three reflect a principle of designation (or exemption) contained in the UIC regulations, and the fourth is a combination containing the best overall approach.

Alternative 1. The entire stratigraphic interval to the base of the San Andres could be designated as an aquifer requiring UIC protection, with exemption for areas in which hydrocarbon production occurs.

Alternative 2. The interval could be designated as an aquifer only where total dissolved solids are less than 10,000 mg/l.

Alternative 3. The interval could be designated as an aquifer only where production of fresh water is likely to be economically or technically feasible.

Alternative 4. A combination of options 2 and 3 could be used. This alternative is the one recommended for the prototype area.

Each alternative must be judged in terms of: a) its effectiveness in protecting drinking water; and b) its administrative efficiency. Figures 11-15 display the various aquifer designations which would result from each alternative.

Alternative 1; Full Designation with Exemptions for Hydrocarbon Production

If the lower limit of the aquifer were designated as the base of the San Andres (see Figure 11), all known fresh water in the study area would be protected since TDS exceeds 10,000 mg/l throughout deeper horizons. Upper and lateral boundaries of active oil pools would then be used to exempt areas of hydrocarbon production. The heavy dashed line in Figure 11 illustrates how such a boundary would appear in cross-section.

This approach promises good protection of drinking water. The available evidence indicates that hydrocarbon production occurs within localized porosity zones (potential injection zones) which are unconnected to the artesian aquifer; further, fresh water has not been found beneath any oil pool. Therefore, wastes injected into areas exempted from designation would not be expected to commingle with fresh water in the protected aquifers. However, the approach would face severe

administrative problems. Boundaries must be redrawn each time an oil pool is extended or a new pool developed, requiring a lengthy and expensive public review and hearing process on each boundary change. Further, determination of the exact location of pools (especially the upper limit) is quite time-consuming.

Alternative 2: Use of TDS Boundary

Use of a line to define the lower limit of water containing less than 10,000 mg/l solids would, by UIC definition, provide protection to all potential drinking water (see Figure 12). The major drawback to using this method throughout the study area is that there are no water-quality analyses available from the lower part of the San Andres, nor from many higher units east of the Pecos River. Instead, the determination that fresh water occurs to the base of the San Andres Formation involves the use of resistivity data from deep geophysical data wells. There are relatively few geophysical data wells; hence the boundary can only be approximate and the depth to which UIC protection should extend is uncertain. East of the river the line is drawn across the top of oil pools because elsewhere in the area TDS values in and beneath pools are always greater than 10,000 mg/l. Administration of a designation

based on approximate boundaries and uncertain depths would be difficult. In addition, evaluations of resistivity data from geophysical data wells is time-consuming and hence expensive. The approach may be the only one feasible in much of New Mexico, but in the prototype area a better procedure is available (see below).

Alternative 3: Boundary Based on Porosity

The fresh water which lies between the base of the artesian aquifer and the base of the San Andres appears to be interstitial, trapped in pore spaces with little or no permeability. It is doubtful that usable quantities of water could be obtained by wells which tap this horizon. Therefore, the base of the artesian aquifer itself could be used as a UIC boundary in the study area since it effectively limits the depth at which fresh water resources are available (see Figure 13). The boundary is readily drawn based on the extensive well records available in the area. In practice it is preferable to place the base of the protected zone 100 feet below the aquifer to provide a margin of safety. This would be consistent with existing state regulations, which require casing of all oil wells from the land surface to a depth 100 feet below the artesian aquifer.

The historic use of this criteria in State regulations indicates that administrative difficulties would be minimal. Moreover, data are adequate to present the boundary in map form (Figure 14). However, the artesian aquifer does not extend east of the Pecos River; a different approach is needed to provide aquifer protection in that part of the study area.

Alternative 4: Combination of Designation Techniques

To provide protection for fresh-water in the artesian basin as well as protection for those scattered sources outside the basin boundaries, a combination of designation techniques is necessary. A boundary placed 100 feet below the base of the artesian aquifer is feasible in the map area west of the Pecos River (Alternative 3). However, east of the river where the artesian aquifer does not occur, designation of boundaries would require careful scrutiny of well records and available geological data to determine zones productive of fresh water (using the procedures described in Alternative 2). The boundary drawn east of the river in Figure 14 is extrapolated from elsewhere in the area, and would need to be fixed in more detail if a UIC application were to occur east of the Pecos. This combination of options provides the best strategy for designating all potential sources of fresh water in the prototype area.

Figure 15 is a cross-section which identifies the boundary of the designated aquifer drawn according to Alternative 4. While this approach would require different types of administration in different parts of the prototype area, it also provides the most comprehensive protection. The administrative burden would not be significantly greater than that required for each individual technique above.

SUMMARY AND CONCLUSIONS

The prototype study has determined that boundaries can be set and aquifers identified under the UIC program. In the study area, existing state regulations can be used in coordination with UIC goals to carry out aquifer designations for the area west of the Pecos River. Designation of aquifers east of the Pecos requires use of geophysical data and available well records to determine appropriate boundaries based on total dissolved solids concentrations. This experiment provides many insights on the procedures to be used for UIC aquifer evaluations.

Geophysical data from oil and gas wells will be an important source of information, since they reveal conditions

in deeper aquifers, which, while not currently use for drinking water, should be protected under UIC. The TDS boundary method (Alternative 2) will be very useful in those areas which lack the geologically defined aquifer limit which occurs in the study area. The TDS method is likely to be used in much of New Mexico; however, the boundaries set will be less reliable than those established on a geologic basis, unless salinity is geologically controlled. A major administrative concern is that the procedures used in designating aquifers not change every time new data become available. This concern makes the exemptions of aquifers for hydrocarbon production an undesirable alternative.

The prototype study cost approximately \$100 per square mile. This provides a basis for budget estimates for other mapping elsewhere in New Mexico. Less cost and time will be involved in mapping the remainder of the Roswell basin as a result of the experience and techniques developed in the prototype area. Costs elsewhere in the state will vary depending upon data availability and the complexity of geologic and hydrologic conditions. Since most of the state will have little or no data available from deep wells, costs will be lower (and results less reliable) than in the prototype area.

The estimated cost of aquifer designation in New Mexico, based on \$100 per square mile, would be \$12,166,000. Even if costs eventually approach \$10/square mile, a considerable expense will be incurred by the UIC program. Where feasible, existing administrative procedures, such as New Mexico's state regulations, would reduce UIC costs considerably.

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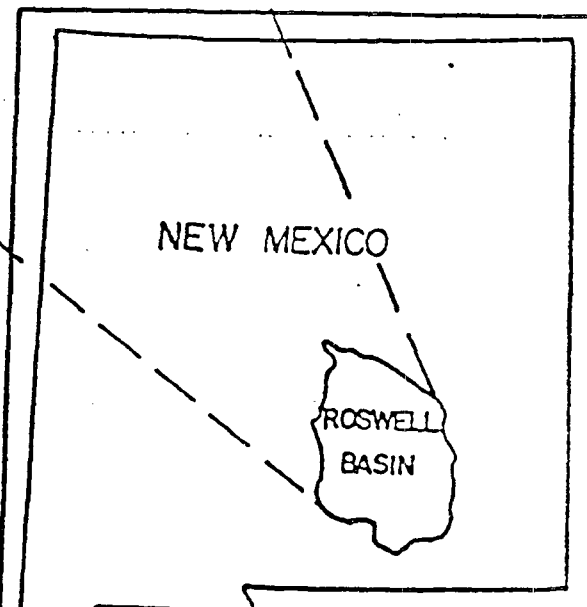
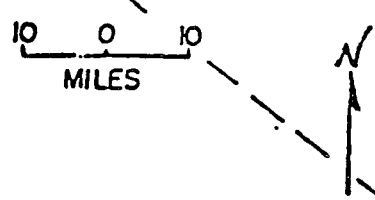
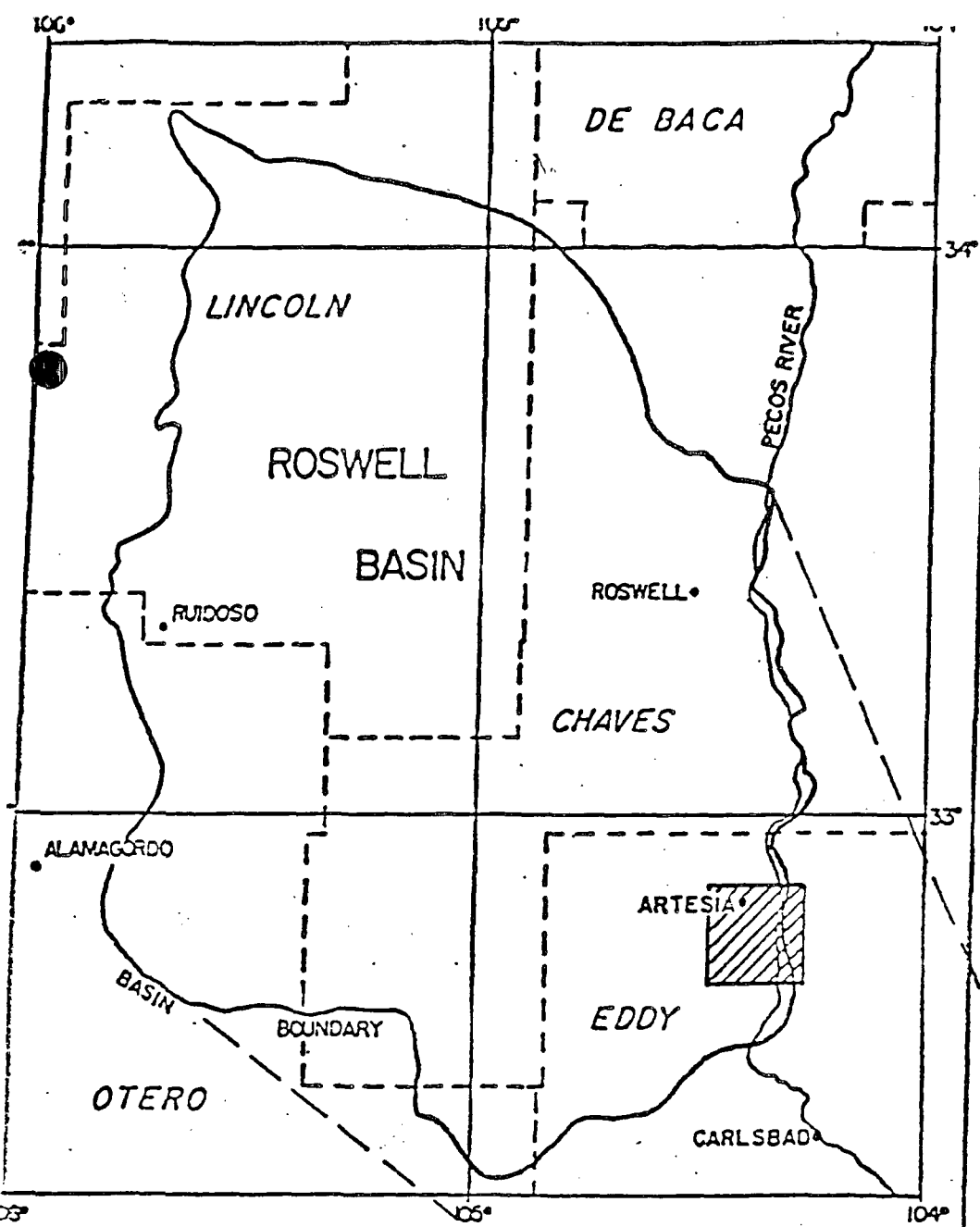


Figure 1: Location of Prototype Area.

Source: after Gross, et al., 1978.

SECTION IN
ROSWELL ARTESIAN
BASIN

SECTION EAST
OF THE
PECOS RIVER

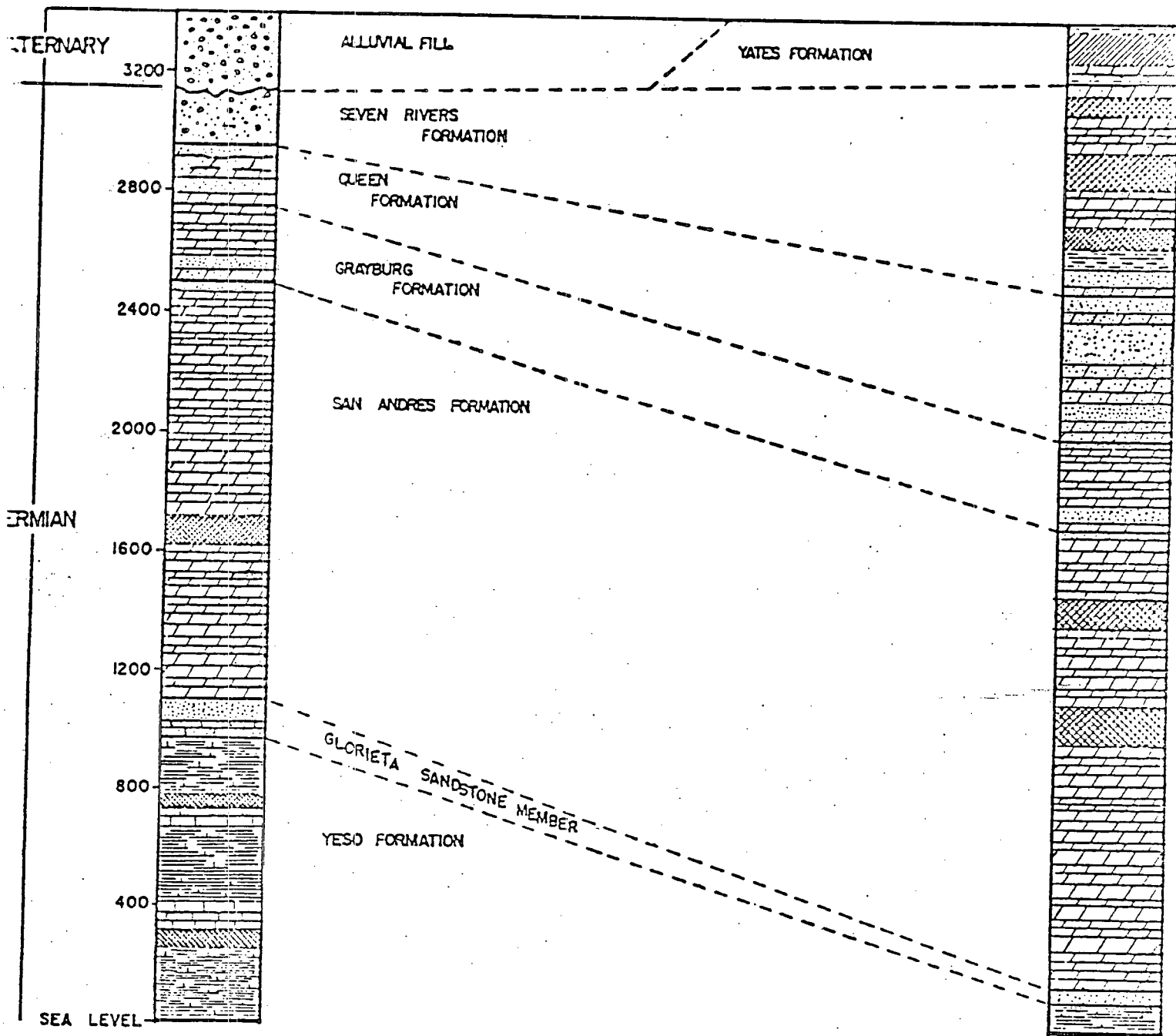


Figure 2: GENERALIZED STRATIGRAPHIC COLUMN
ARTESIA AREA

Source: M. Holland, 1979.

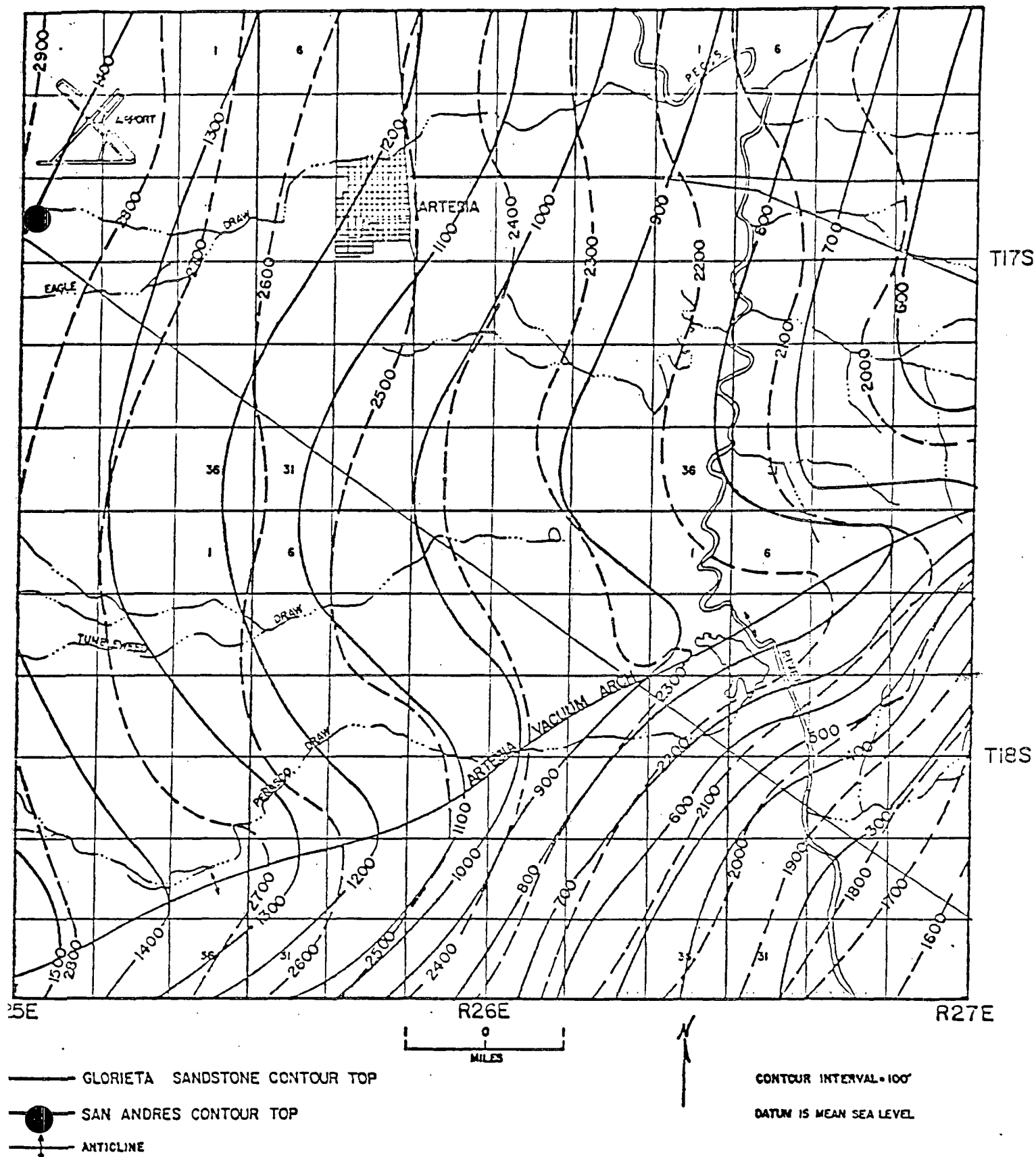


Figure 3: Structure Contour on San Andres Formation and Underlying Glorieta Sandstone Member.

Source: Modified after Maddox, 1969 by M. Stahl and M. Holland, 1979.

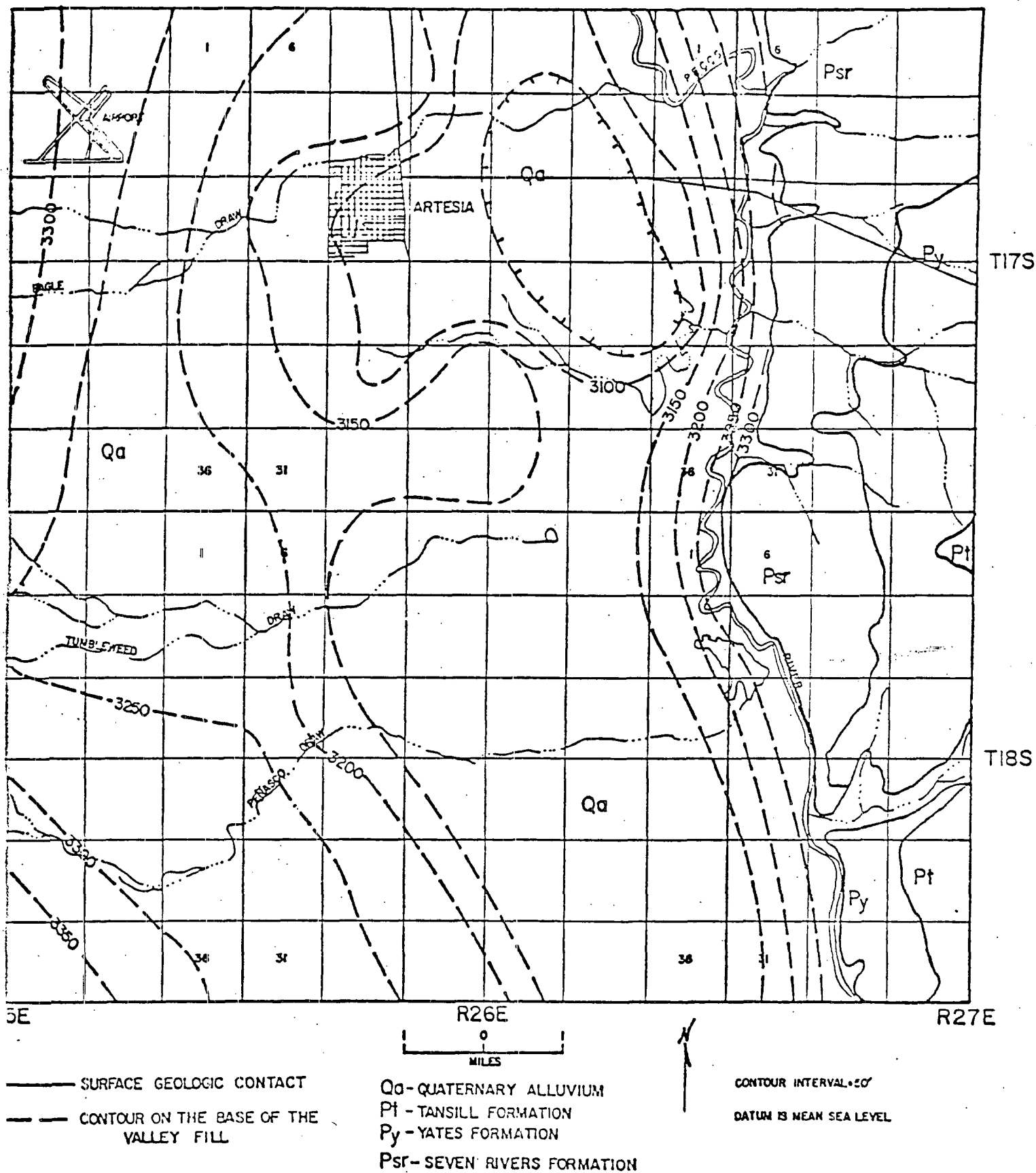


Figure 4: Surface Geology.

Source: Modified after Kelley, 1971 and Lyford, 1973 by M. Stahl.

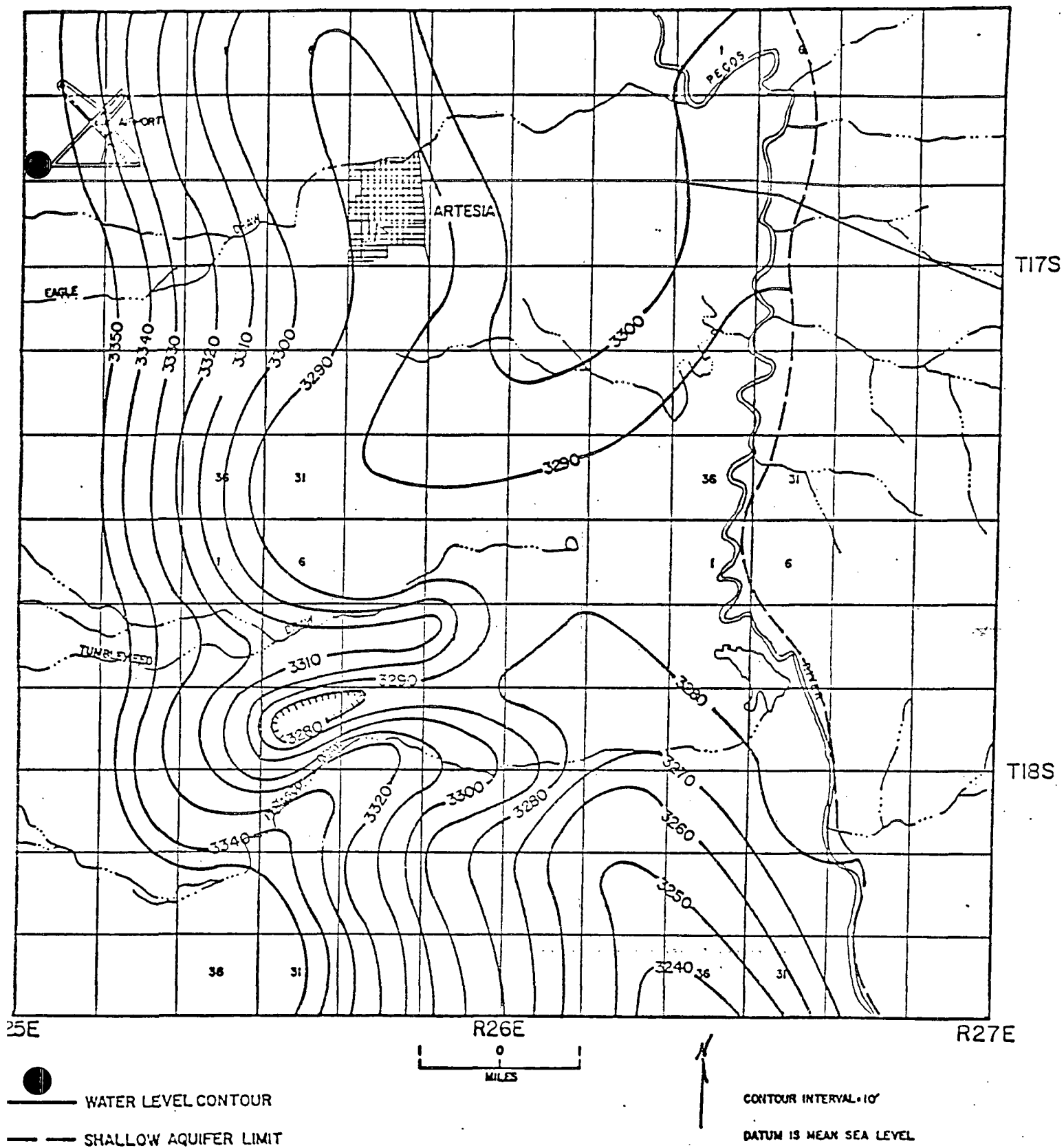


Figure 5: Potentiometric Surface of Shallow Aquifer.

Source: after E. Welder, 1977.

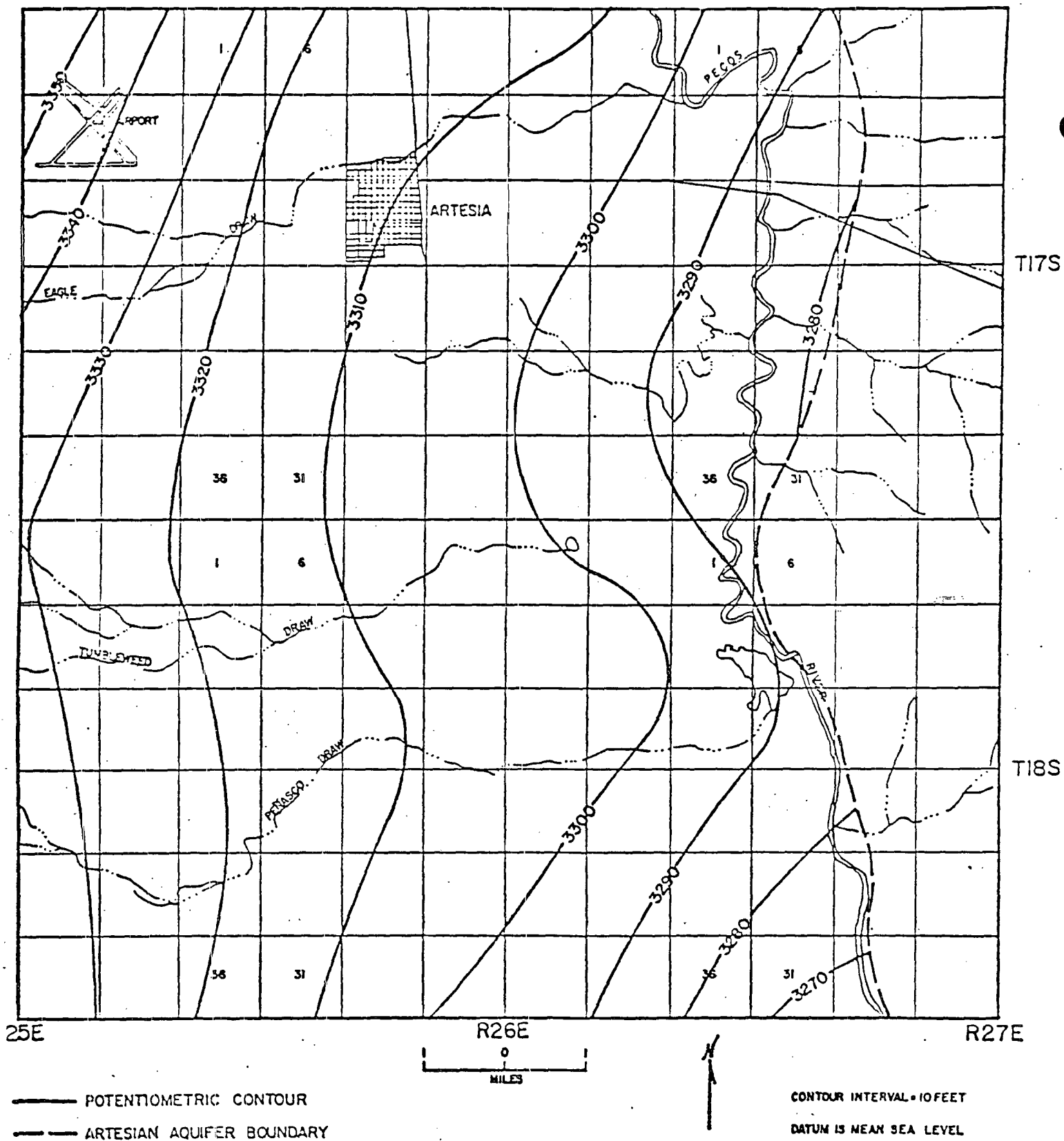
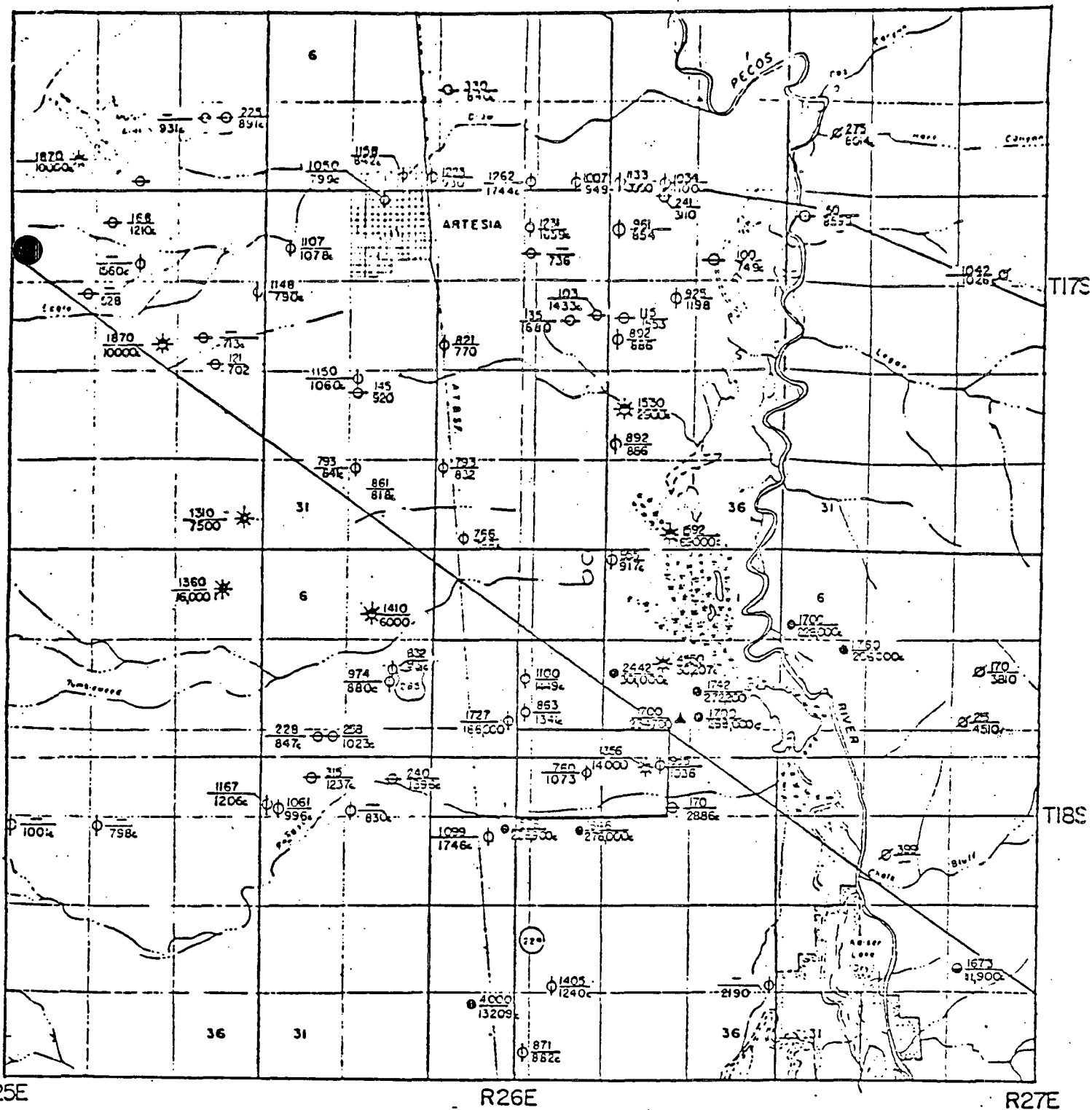


Figure 6: Potentiometric Surface of Artesian Aquifer.

Source: after E. Welder, 1977



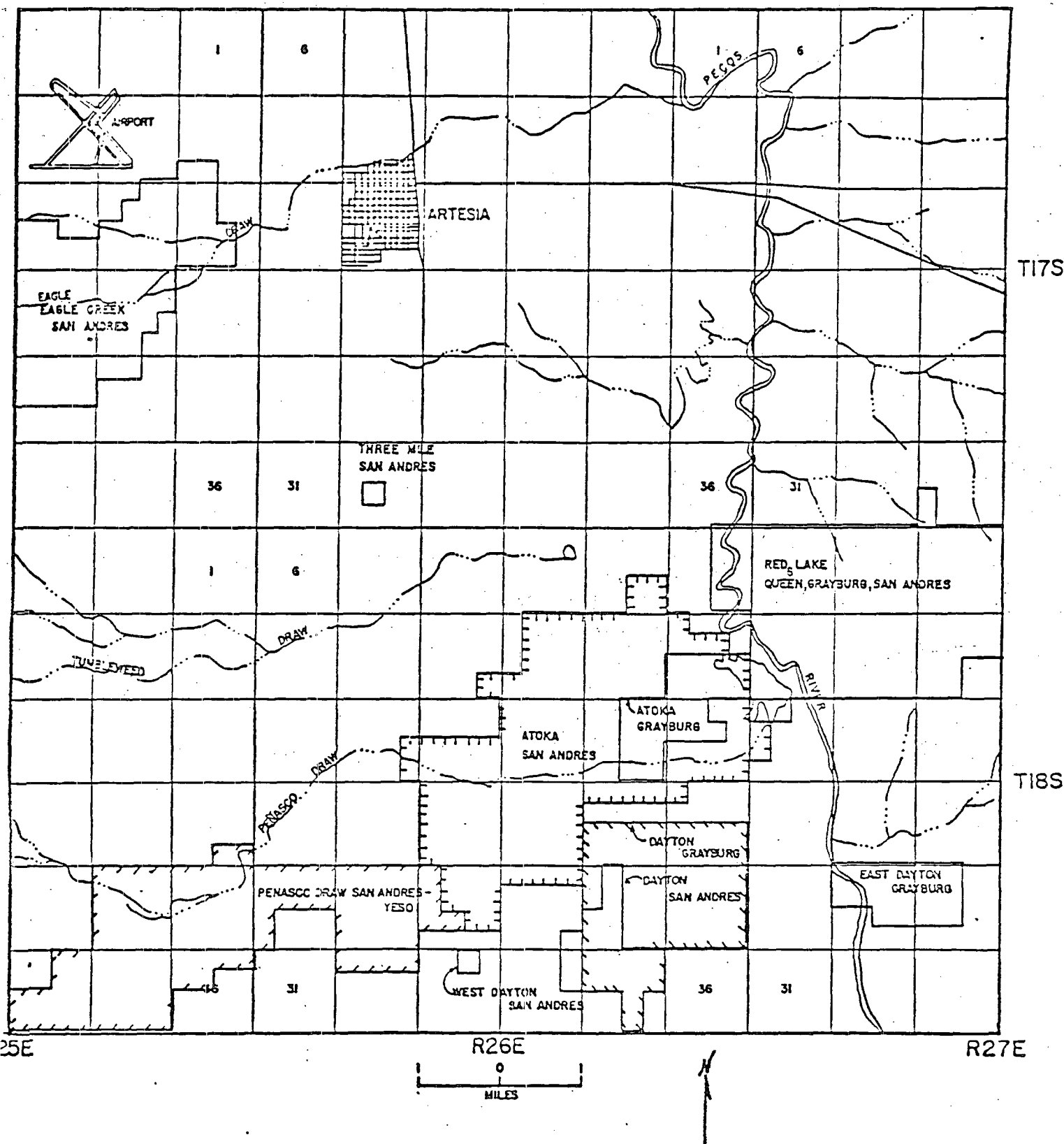
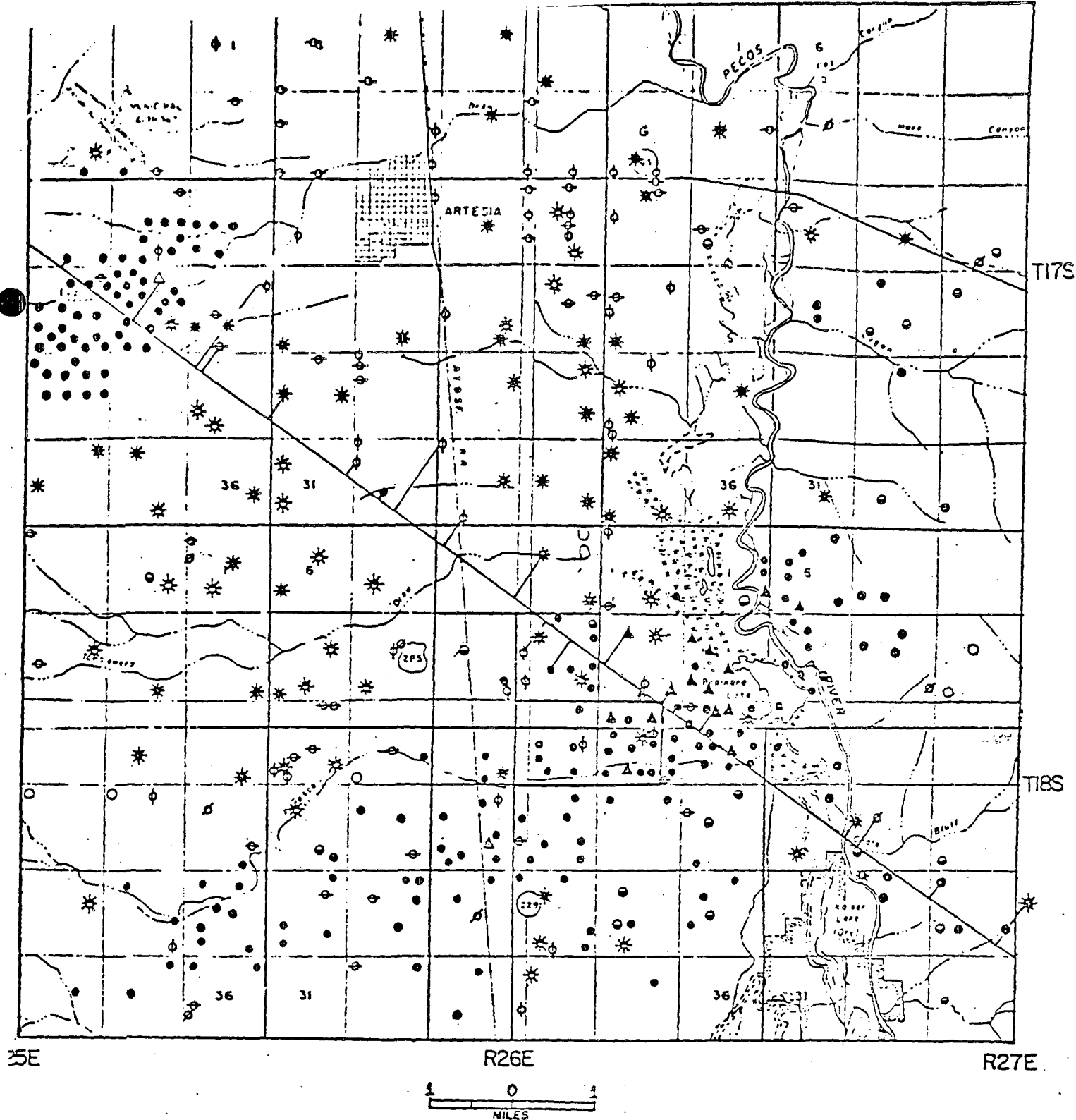


Figure 8: Location of Shallow Oil and Gas Pools.

Source: M. Holland, 1979



Source: M. Holland, 1979.

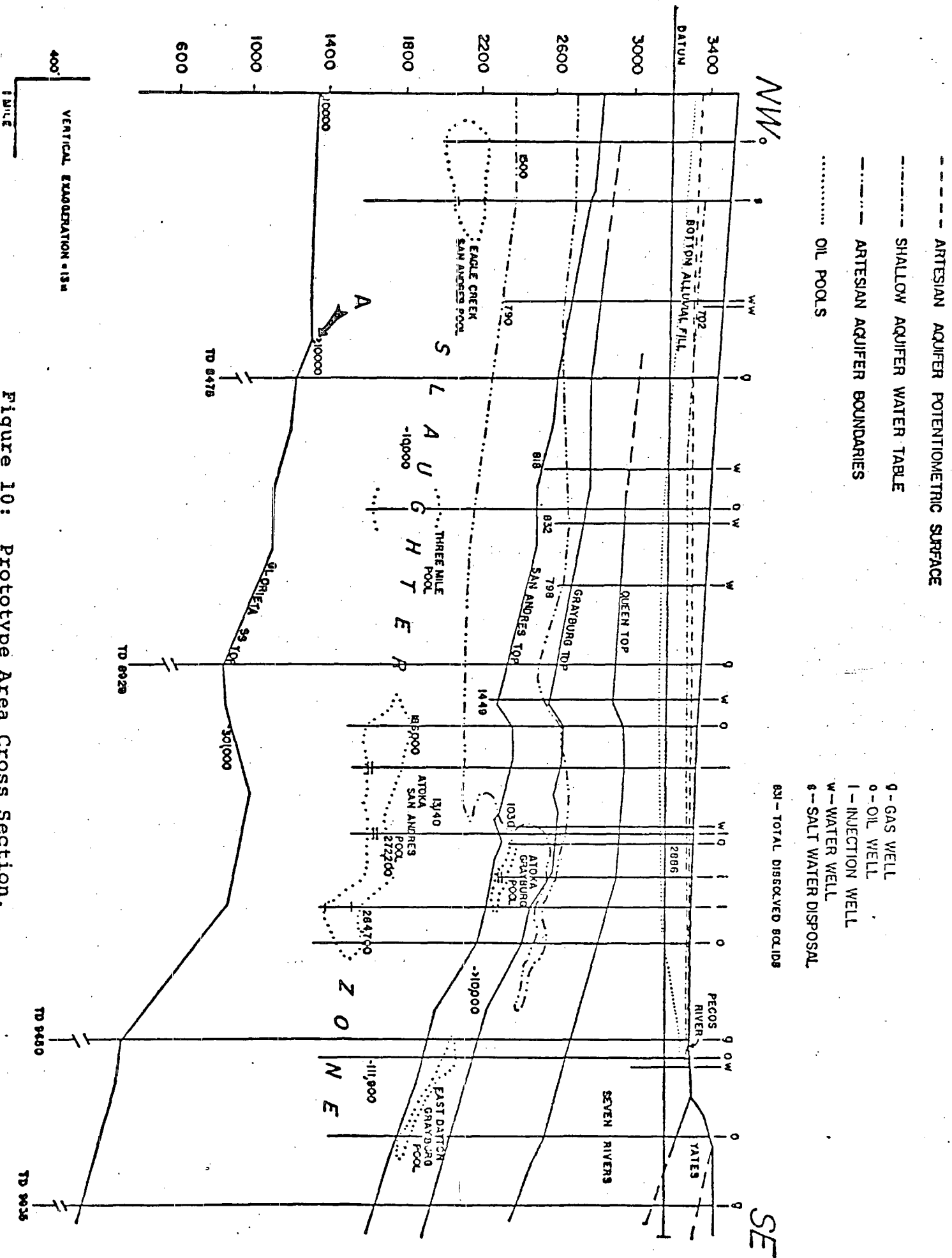


Figure 10: Prototype Area Cross Section.

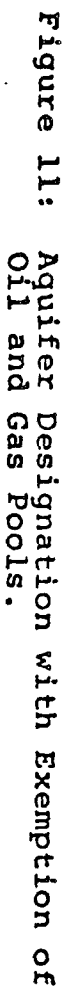


Figure 11: Aquifer Designation with Exemption of Oil and Gas Pools.

----- ARTESIAN AQUIFER BOUNDARIES

..... OIL POOLS

----- AQUIFER DESIGNATION BOUNDARY

832-TOTAL DISSOLVED SOLIDS

SE

NW

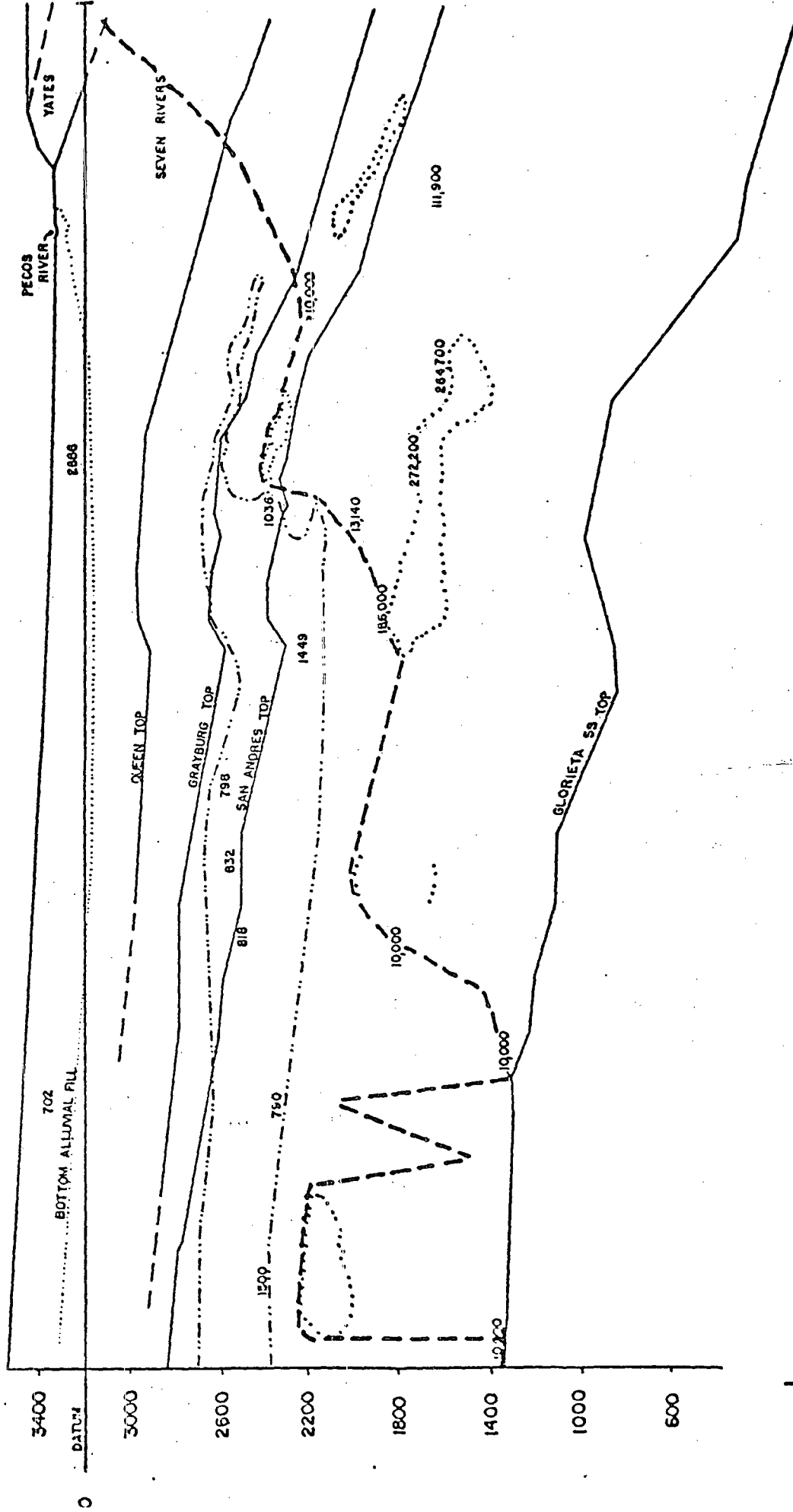


Figure 12: Aquifer Designation Using TDS Data.

Source: M. Holland, 1981

ARTESIAN AQUIFER BOUNDARIES

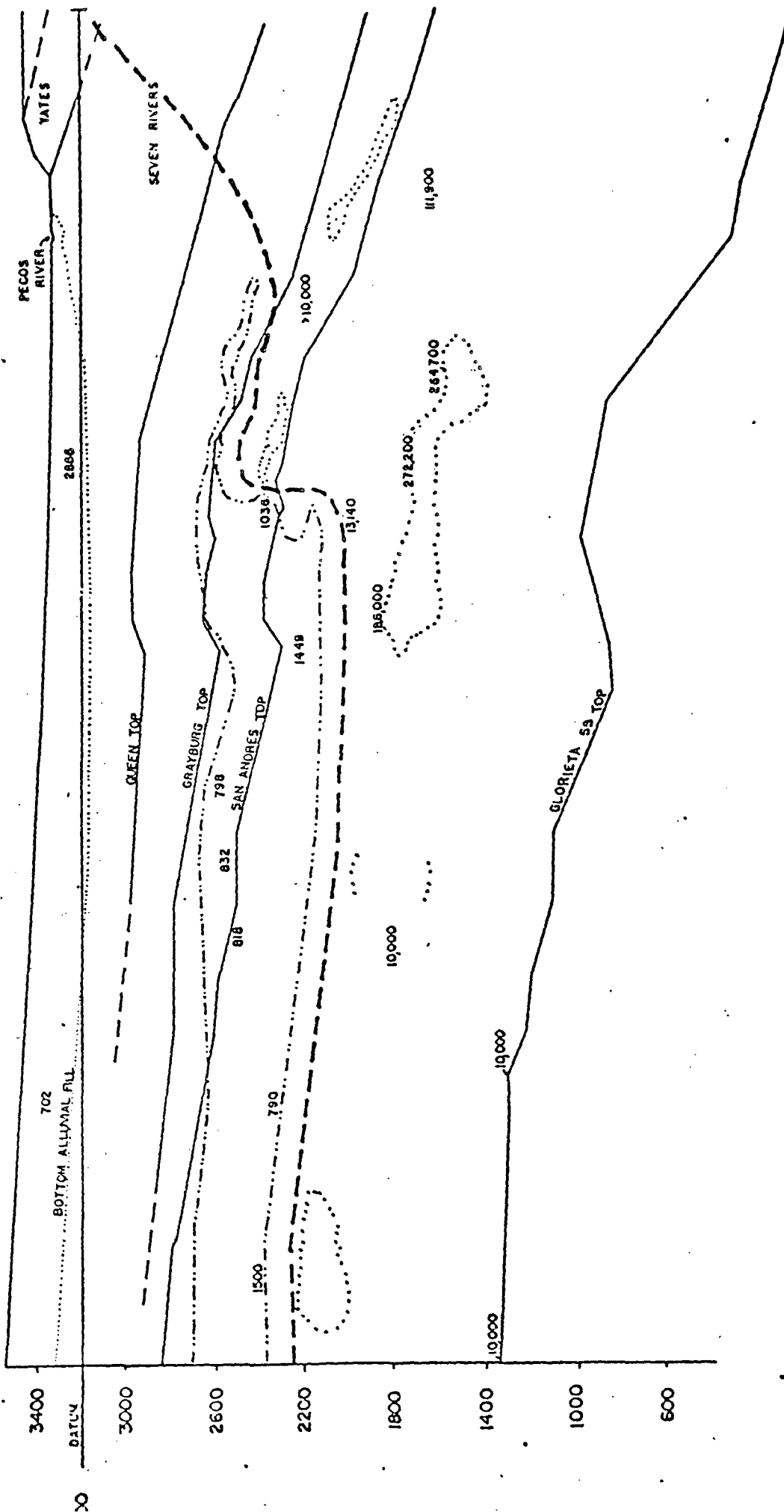
OIL POOLS

AQUIFER DESIGNATION BOUNDARY

832-TOTAL DISSOLVED SOLIDS

NW

SE



VERTICAL EXAGGERATION = 13x

1 MILE

Figure 13: Aquifer Designation Using TDS and Porosity Data

Source: M. Holland, 19

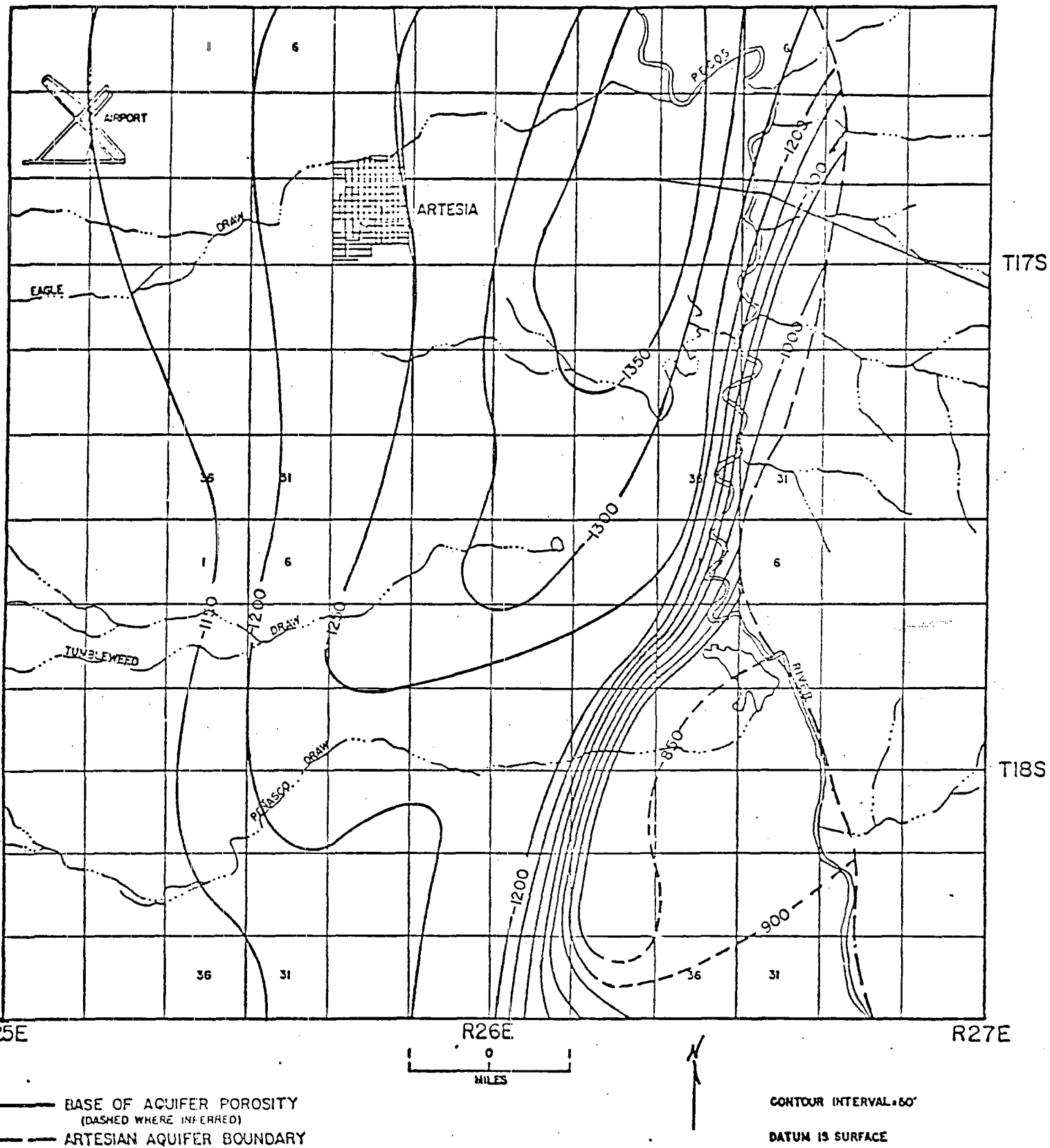


Figure 14: Base of Artesian Aquifer.

Source: M. Holland, 1979.

Table 1. Geohydrologic Data.

<u>Formation</u>	<u>Average Permeability (millidarcies)</u>	<u>Average Porosity %</u>	<u>Transmissibility gpd/ft</u>	<u>Storage Coefficient</u>	<u>Coefficient of Leakage (feet)</u>
Alluvium			100,000	0.10	20,000
Yates	11.27c	10.21c			
Seven Rivers	2.47c	10.65c			
Queen	1.98c	9.21c	60,000k		
Grayburg	1.73	9.86			
Artesian Aquifer			150,000	.00005	25,000
Upper San Andres	up to 2.0	6.0	100,000k		
Slaughter	up to 12.0	4.83			
Glorieta	0.28	21.0			
Yeso	2.02	1.29			

The values for porosity and permeability were calculated from data in USGS files, except for those marked with a "c" which are county-wide averages taken from Hiss (1975). The other values are taken from Hantush (1955); the value marked with a "k" was taken from Kinney et.al. (1968).

Table 2. Water Wells Data.

Abbreviations used: Irrigation, Dom-Comestic, PS-Public Supply, Ind-Industrial, S-Stock, Gal-Valley Fill, Pa-Pates Fm, Psr-Seven Rivers Fm, Pss-Span Andres Fm, TDS-total Dissolved Solids, C in TDS column indicates calculated value, Cl-Chlorides, SpC-Specific Conductance, CS in cements column indicates well used in cross section. All water rights numbers have the prefix RA.

Well Number	Owner	Surface Elevation (feet)	Well Depth	Aquifer	Water Production (feet)	Diam. Casing (inches)	Depth of Casing (feet)	Driller	Date Drilled	Water Level (feet)	Date Meas.	Yield (gpm)	SPC (mmbbl)	Cl (mg/l)	TDS (mg/l)	Use	Water Rights Number	Comments
100-10-110	Fred Sample	3,483	1,326	Psa	-	8	-	-	-	156.6	1-61	-	-	131	1,210C	11T	-	
100-10-111	W. L. Gates	3,485	166	Gal	-	-	-	-	-	-70	4-55	-	1,280	33	971C	11T	-	CS
100-10-112	J. E. Collins	3,464	225	Gal	-	12	-	-	-	159	1-74	-	1,275	40	833C	11T	-	
100-10-113	Artesia Country Club	3,505	-	Gal-Pst	-	6	-	-	-	145.9	8-48	-	-	10	90A	11T	-	
100-10-114	-	3,496	-	Psa	-	-	-	-	-	7-40	7-40	-	946	18	1,020C	11T	-	
100-10-115	-	3,479	-	Psa-Pgb	-	-	-	-	-	1133.2	5-60	-	2,970	30	1,500C	-	-	
100-10-116	N. T. Glassier	3,510	-	Gol	-	-	-	-	-	136.3	5-49	-	869	32	628	-	-	CS
100-10-117	N. T. Glassier	3,464	1,148	Psa	-	-	-	-	-	1,129	1-64	-	1,129	14	790C	PS	-	CS
100-10-118	N. T. Glassier	3,464	121	Gal	-	-	-	-	-	17	2-68	-	1,018	17	713C	-	-	
100-10-119	J. W. Jackson	3,465	-	Pgb	-	-	-	-	-	2-39	2-39	-	-	22	702	-	-	CS
100-10-120	Fred Sample	3,354	83	Gal	-	8	-	-	-	162.5	1-63	-	-	-	-	Dom	-	
100-10-121	State of New Mexico	3,357	23	Gal	-	-	-	-	-	15.2	1-53	-	2,540	135	2,040	Dom	-	
100-10-122	222-100	3,365	330	Gal-Pq	-	12.5	-	-	-	18.0	1-58	-	1,200	34	84CC	11T	-	
100-10-123	L. J. Stanley	3,398	300	Gal-Pq	95-175	14	302	F. Osbourn	5-68	38.7	1-59	-	1,200	-	-	11T	5,416	
100-10-124	M. W. Stephens	3,403	188	Gal	260-271	12.25	190	C. N. Gray	2-55	80	5-68	-	-	-	-	-	1,513	
100-10-125	East 1st Street	3,449	241	Gal	109-133	7	241	Edistow	5-78	35	12-55	-	-	-	-	Dom	6,302	
100-10-126	Jack Garrett	3,452	210	Gal	147-155	7	210	F. Osbourn	8-77	160	5-78	-	-	-	-	Dom	6,167	
100-10-127	W. L. Collins	3,427	156	Gal	180-186	7	-	M. C. Gray	12-52	155	8-77	-	-	-	-	11T	2,991	
100-10-128	Barber, Yates Co.	3,428	252	Gal	227-238	12.25	252	Yates Pet.	2-77	78.4	1-52	-	1,250	26	873C	11T	1,604	
100-10-129	-	-	-	-	120-130	-	-	-	-	-	-	-	-	-	-	-	-	-
100-10-130	-	3,430	-	Gal	215-246	6	30	J. Hammond	8-68	-	2-39	-	1,220	53	954	-	-	
100-10-131	J. E. Churton	3,411	160	Gal	-	-	850	F. Osbourn	6-66	115	8-68	-	-	-	-	11T	2,178	
100-10-132	Continental Oil Co.	3,364	1,123	Psa	-	12.5	662	City of Artesia	5-46	135	6-66	-	-	-	-	Ind	1,097	
100-10-133	City of Artesia	3,371	1,150	Psa	860-870	13.375	658	Pearson Bros.	7-48	-	-74	-	1,208	13	842C	PS	2,231	5th St. Well
100-10-134	City of Artesia	3,367	1,223	Psa	1015-1020	10.75	-	-	-	-	-	-	-	-	-	-	-	-
100-10-135	Wesley	3,336	218	Gal	1140-1150	7	139	A. F. Smith	12-63	65	12-63	-	-	-	-	Dom	4,922	
100-10-136	W. L. Gates	3,348	278	Gal	96-134	13.375	278	Pearson Bros.	1-39	11.6	3-59	-	1,000	135	2,500	-	1,341	
100-10-137	W. L. Gates	3,348	278	Gal	-278	10.75	278	Pearson Bros.	1-39	11.6	3-59	-	1,000	135	2,500	-	1,341	
100-10-138	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-139	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-140	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-141	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-142	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-143	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-144	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-145	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-146	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-147	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-148	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-149	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-150	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-151	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-152	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-153	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-154	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-155	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-156	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-157	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-158	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-159	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-160	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-161	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-162	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-163	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-164	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-165	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-166	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-167	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-168	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-169	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-170	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-171	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-172	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-173	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-174	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-175	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-176	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-177	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-178	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-179	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-180	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-181	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-182	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-183	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-184	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-185	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-186	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-187	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-188	V. L. Gates	3,348	294	Gal	280-920	12.5	294	W. Realy	5-60	15.8	1-50	-	-	-	-	Dom	4,196	
100-10-189	V. L. Gates	3,348	294	Gal	280-920	12.5	294											

Table 2 (continued).

[illegible]

Notes: 50-500' water disposal, Inj-Injection, DM-Water quality, TDS-Total dissolved solids, Cl-Chlorides, SPC-Specific Conductance, 1-100' section indicates calculation from chlorides, CS-Cross section, Pys-Values fm., Pa-Queen fm., Pdb-Guying fm., Psa-San Andres fm., Pto-Permian fm., MCTE: Casing Depth indicates depth of casing string protecting fresh water. Most results of formations interpreted by owners and not in well records, thus some discrepancy exists.

Well Name	Well Elevation	Well Type	Total Depth	Casing to Top of Sand	Depth to Top of Sand	Depth to Base of Upper Porosity	Production Interval	QW of Source	Depth	CI (mg/l)	TDS (mg/l)	Depth to base of fresh water	Comments	
Artesia Alport #2	3,526	Dry	8,080	1,136	455	690	1,975	1,150	1,260-1,410	1,870	5,500	10,000	1,870	CS
Federal CB #1	3,528	Dry	1,492	1,410	701	719	-	-	1,302-1,439	-	-	-	-	Water Intervals 205-2
J. Lary J #2	3,526	Dry	1,470	1,133	3457	728	-	-	1,289-1,518	-	-	-	-	
Federal CB #4	3,534	Dry	1,517	1,134	772	-	-	-	1,340-56007	-	-	-	-	
J. Lary J #2	3,527	Dry	1,522	1,155	618	772	-	-	-	-	-	-	-	
Glassier AV #2	3,487	SND	1,980	1,240	707	-	-	-	1,260-1,410	-	-	-	-	
Glassier AV #10	3,530	Dry	1,501	1,150	732	-	-	-	1,326-1,440	-	-	-	-	
Wichita #1	3,480	Dry	9,140	1,762	603	-	-	-	-	-	-	-	-	
Wichita #2	3,458	Dry	8,518	1,182	603	-	-	-	-	-	-	-	-	
Wichita #3	3,462	Dry	10,243	1,261	-	-	-	-	-	-	-	-	-	
Wichita #4	3,491	Dry	8,740	1,238	778	-	-	-	-	-	-	-	-	
Wichita #5	3,466	Dry	8,594	1,263	615	820	-	-	-	-	-	-	-	
Arco E.C. State #2	3,466	Dry	8,594	1,263	615	820	-	-	-	-	-	-	-	
Artesia Alport #1	3,345	Dry	8,509	1,374	964	2,225	1,310	-	-	1,800	24,000	41,000	1,800	CS
Artesia Alport #2	3,336	Dry	8,662	1,404	750	2,357	1,420	-	-	-	-	-	-	
Artesia Alport #3	3,364	Dry	8,627	1,420	730	2,350	1,370	-	-	-	-	-	-	
Artesia Alport #4	3,337	Dry	8,725	1,402	770	2,323	1,350	-	-	-	-	-	-	
Artesia Alport #5	3,315	Dry	8,918	1,500	800	1,230	1,365	-	-	-	-	-	-	
Artesia Alport #6	3,315	Dry	8,841	1,420	-	1,012	1,338	-	-	-	-	-	-	
Artesia Alport #7	3,320	Dry	8,806	1,500	-	1,012	1,338	-	-	-	-	-	-	
Artesia Alport #8	3,432	Dry	8,570	1,282	650	2,210	1,350	-	-	-	-	-	-	
Artesia Alport #9	3,428	Dry	8,570	1,282	650	2,210	1,350	-	-	-	-	-	-	
Artesia Alport #10	3,434	Dry	8,595	1,280	640	2,223	1,193	-	-	-	-	-	-	
Artesia Alport #11	3,462	Dry	8,601	1,269	622	2,220	-	-	-	-	-	-	-	
Artesia Alport #12	3,349	Dry	1,790	1,205	895	-	-	-	-	-	-	-	-	
Artesia Alport #13	3,283	Dry	9,095	1,402	1,075	2,450	1,330	-	-	-	-	-	-	
Artesia Alport #14	3,297	Dry	2,478	1,407	930	1,118	1,148	-	-	-	-	-	-	
Artesia Alport #15	3,442	Dry	8,625	1,306	803	2,128	-	-	-	-	-	-	-	
Artesia Alport #16	3,487	Dry	8,650	1,300	790	2,100	-	-	-	-	-	-	-	
Artesia Alport #17	3,408	Dry	8,720	1,200	549	2,082	-	-	-	-	-	-	-	
Artesia Alport #18	3,288	Dry	9,074	1,908	1,025	2,385	1,302	-	-	-	-	-	-	
Artesia Alport #19	3,332	Dry	8,929	1,207	993	-	-	-	-	-	-	-	-	
Artesia Alport #20	3,322	Dry	9,065	1,917	-	-	-	-	-	-	-	-	-	
Artesia Alport #21	3,393	Dry	8,053	1,318	900	-	-	-	-	-	-	-	-	
Artesia Alport #22	3,415	Dry	8,730	1,247	625	2,246	-	-	-	-	-	-	-	
Artesia Alport #23	3,408	Dry	8,901	1,313	613	922	-	-	-	-	-	-	-	
Artesia Alport #24	3,423	Dry	8,906	1,305	578	907	-	-	-	-	-	-	-	
Artesia Alport #25	3,406	Dry	8,970	1,300	916	2,380	-	-	-	-	-	-	-	
Artesia Alport #26	3,335	Dry	9,045	1,219	998	2,490	-	-	-	-	-	-	-	
Artesia Alport #27	3,326	Dry	1,742	1,239	976	-	-	-	-	-	-	-	-	
Artesia Alport #28	3,331	Dry	1,654	1,032	760	1,005	-	-	-	-	-	-	-	
Artesia Alport #29	3,349	Dry	1,830	1,804	703	961	-	-	-	-	-	-	-	
Artesia Alport #30	3,337	Dry	1,724	1,719	964	-	-	-	-	-	-	-	-	
Artesia Alport #31	3,328	Dry	9,207	1,802	663	962	-	-	-	-	-	-	-	
Artesia Alport #32	3,305	Dry	1,783	1,218	996	-	-	-	-	-	-	-	-	
Artesia Alport #33	3,337	Dry	9,000	1,697	713	1,008	-	-	-	-	-	-	-	
Artesia Alport #34	3,326	Dry	1,714	1,186	-	968	-	-	-	-	-	-	-	
Artesia Alport #35	3,330	Dry	1,696	1,118	-	956	-	-	-	-	-	-	-	
Artesia Alport #36	3,316	Dry	1,797	1,225	720	1,020	-	-	-	-	-	-	-	
Artesia Alport #37	3,315	Dry	1,736	802	700	1,010	-	-	-	-	-	-	-	
Artesia Alport #38	3,308	Dry	1,749	840	743	990	-	-	-	-	-	-	-	
Artesia Alport #39	3,320	Dry	9,181	1,256	-	1,065	-	-	-	-	-	-	-	
Artesia Alport #40	3,301	Dry	1,742	1,210	745	993	-	-	-	-	-	-	-	
Artesia Alport #41	3,301	Dry	1,800	-	-	1,052	-	-	-	-	-	-	-	
Artesia Alport #42	3,286	Dry	1,748	908	-	1,007	-	-	-	-	-	-	-	
Artesia Alport #43	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #44	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #45	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #46	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #47	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #48	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #49	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #50	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #51	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #52	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #53	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #54	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #55	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #56	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #57	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #58	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #59	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #60	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #61	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #62	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #63	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #64	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #65	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #66	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #67	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #68	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #69	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #70	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #71	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #72	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #73	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #74	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #75	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #76	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #77	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #78	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #79	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #80	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #81	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #82	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #83	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #84	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #85	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #86	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #87	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #88	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #89	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #90	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #91	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #92	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #93	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #94	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #95	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #96	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	
Artesia Alport #97	3,287	Dry	9,342	950	-	1,042	-	-	-	-	-	-	-	

[illegible]

Table 4. Lithologic descriptions of units identified in Figure 2.

1. Alluvial Fill - unconsolidated sands, silts, and gravels.
2. Yates Formation - gypsum with minor dolomite and siltstone.
3. Seven Rivers Formation - anhydrite with shale, dolomite, and sandstone.
4. Queen Formation - sandstones with some sandy dolomite
5. Grayburg Formation - porous sandstone and sandy dolomite.
6. San Andres Formation - limestone and dolomite, with a more sandy and porous upper portion. The lower portion, or Slaughter Zone, has several anhydrite horizons and irregular high porosity development; the area between the upper zone and Slaughter lacks good porosity development.
7. Glorieta Sandstone Member - sandstone and siltstone with calcareous cement.
8. Yeso Formation - dark gray shales with carbonate-cemented siltstones, limestones, and anhydrite.

AQUIFER EVALUATION FOR UIC:
SEARCH FOR A SIMPLE PROCEDURE

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December 31, 1980

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INTRODUCTION

The Federal Underground Injection Control (UIC) program requires protection of existing and potential underground sources of drinking water. As part of the implementation of the UIC program, the U.S. Environmental Protection Agency (EPA) has set forth procedures for determining which underground waters require protection. Figure 1 summarizes the procedures, as they are inferred from the Federal Register (see 40 CFR Part 122.3 and 40 CFR 146.04). We term Figure 1 'the Aquifer Evaluation Process'.

Application of Figure 1 results in the classification of a rock unit as a protected aquifer if it is a present source of drinking water. It is also a protected aquifer unless it is explicitly classified into one of three other categories for which UIC protection is not required: salt-water aquifer, non-aquifer or exempted aquifer. Salt-water aquifers are rock units which contain water having a total dissolved solids content (TDS) in excess of 10,000 mg/l. Non-aquifers are rock units which are not able to yield significant amounts of water to a well or spring. Exempted aquifers are rock units which are not a source of drinking water for reason of economics, technology, gross contamination, or relationship to subsidence or collapse zones.

EPA guidance regarding the aquifer evaluation process indicates that it should be relatively thorough and detailed (Ground-Water Program Guidance No. 4.2). The agency specifically suggests the use of techniques such as: maps

and cross-sections showing TDS isocons; maps showing depth to base of fresh water; maps of aquifer thickness, elevation, and saturated thickness; maps of water levels in different aquifers at different dates; and many others.

In 1979 the New Mexico Oil Conservation Division (OCD) performed a prototype study to develop and assess procedures for the evaluation of aquifers. The study involved geohydrological mapping in a lithologically complex 144 square-mile area near Artesia, Eddy County, New Mexico. Procedures used and maps produced followed EPA guidance. The results indicate that rock units can be mapped and evaluated as required by the UIC program. However, studies of the scope suggested by the EPA guidance were estimated to cost at least \$10 per square mile, which would impose a considerable cost on the statewide implementation of the UIC program.

Interestingly, the in-depth analysis undertaken in the Artesia area produced the same protection of drinking water as had long been enforced by the State OCD. The results of aquifer classification from the State program and the in-depth (UIC) analysis can be compared as follows.

	<u>State Program</u>	<u>UIC Program</u>
Basis:	General geohydrologic knowledge of area	Detailed geohydrological study
Result:	Aquifers protected to base of existing drinking water aquifer; deeper units classed as salt-water aquifers	Same as State program except that some of the deeper units contain fresh water in isolated low porosity zones and are better classified as non-aquifers

In Artesia, the major benefit of a detailed geohydrologic study was to show that some rock units deemed by the State to be salt-water aquifers are in fact non-aquifers which contain fresh water. The rules for injection control are not changed by such a distinction, and consequently State regulations are correct in allowing injection below the base of the deepest existing underground source of drinking water.

On the basis of this initial prototype study, it was hypothesized that an in-depth analysis may not be required to ensure the accurate evaluation of aquifers. Rather, evaluations might be performed satisfactorily at a reconnaissance level, using procedures similar to those already applied by the State. Such an approach would reduce costs of implementing the UIC program, without endangering water supplies. In 1980 OCD performed a second study aimed at testing this hypothesis. The area chosen for study (Figure 2) was Lea County, which is the leading oil producing county in New Mexico and an area where there is considerable injection for both secondary recovery and brine disposal.

INITIAL CLASSIFICATION

The initial classification of aquifers in Lea County was based on studies of regional geohydrology published in readily available reports and supplemented by a review of the existing State regulatory program. References reviewed include: Garza and Wesselman (1959), Ash (1961a; 1961b), Nicholson

and Clebsch (1961), Ash (1962), U.S. Bureau of Reclamation (1972), West and Broadhurst (1975). Appendix 1 summarizes the water-bearing characteristics of the major geologic units in the area; Figure 3 is a stratigraphic column which identifies Formation names.

The conclusion reached from the literature is that most drinking water in Lea County is obtained from shallow rock units (dominantly the Tertiary Ogallala Formation), and that there is no significant amount of fresh water in rocks older than Triassic. This concept is the basis for State regulations which have permitted oil-field brines to be injected into rocks of Permian age or older.^{a/} Figure 4 is a map showing the base of the Triassic (also the top of the Permian Rustler Formation). Injection below this elevation is allowed by State regulations, a policy which is supported by the most readily available reports.

IN-DEPTH STUDY

A detailed aquifer evaluation study was performed in an area in the southern portion of the County (Figure 5) to determine if the reconnaissance study provided an accurate evaluation of geohydrologic conditions. The methods

a. A possible exception is that fresh water may occur in the reef limestones of the Permian Capitan Formation. Injection into the Capitan has never been proposed and therefore the State's regulatory position toward this aquifer has not been established.

used were those developed in the Artesia study: review of technical reports and unpublished data in the files of various agencies; analysis of well logs; and analysis of borehole geophysics data.

A bibliographic form (Figure 6) was completed for dozens of published and unpublished references on the geology and hydrology of the area and those references which appeared to have the best information were reviewed in detail. Also reviewed were existing water-quality records for wells which obtain water from Paleozoic rocks. The result was a reasonably comprehensive understanding of the geohydrology of a representative portion of Lea County, as shown by: geologic maps and sections; water-table maps; and maps and sections showing water quality. This level of detail is commensurate with that suggested in the EPA guidance previously cited. Based on the bibliographic forms, the references were categorized as follows.

1. Reports or articles which discuss water resources at a regional level. These are the same references reviewed during the initial study, and were cited previously.

2. References which discuss the known aquifers of Triassic age or younger (especially the Ogallala Formation), or which discuss the water supplies of the area in a general way. Such aquifers would be protected by UIC without question, and thus while these references could be of value in review of site-specific UIC permits, they are of no value in the overall aquifer evaluation process. Examples of such references include: Nye (1930), Theis (1937),

Conover and Akin (1942), USDE (1943), Burnes, et al. (1949), Yates and Galloway (1954), Minton (1956), Dinwiddie (1963), Chen and Long (1963), Long (1965), Havens (1966), Cronin (1969), Theis (1969), Hudson (1971), Maurant (1971), Theis (1971), Brown and Signor (1972), Brown and Signor (1973), Buchanan (1973), Galloway (1975), Brutsaert, et al. (1975), N.M. Interstate Stream Commission and N.M. State Engineer Office (1975), Sorensen (1977), Brown, et al. (1978), Akin and Jones (1979).

3. Articles which provide information on the history of brine contamination incidents. All such incidents involved contamination of the Ogallala Formation, with brine ponds being the principal source of the problem. These references were useful as background information for the UIC program, but do not bear directly on the evaluation of aquifers. The references include: Rice (1958), Porter (1971), Bigbee and Taylor (1972), Bigbee (1972), Wright (1979),

4. References which provide important information on Permian aquifers. These include regional studies which focus on the oil-related brine aquifers of the Permian Basin: Nicholson (1954), Borton (1960-67), Hood (1962), McNeal (1965), Hiss (1969), Chavez (1968-1979), Hiss (1973), George (1974), Hiss (1975a; 1975b, 1975c), Lambert (1978), Hiss (1980). Also included are very localized studies of the geohydrology of an area in which the analysis of aquifers is carried well into the Paleozoic: Borton (1958), Galloway (1959), West (1961), Cooper (1962), Mercer (1977). As noted below, these references

indicate that some fresh water (TDS less than 10,000 mg/l) does occur in a few of the Permian rock units.

5. References which provide information on geologic conditions below the base of the Triassic, which do not provide information related to the geo-hydrochemistry of fresh waters and thus are not directly relevant to the evaluation process. Specific citations include: Adams (1944), Stipp et al, (1956), Stipp and Haigler (1957), Hull (1960), Sweeney, et al. (1960), Brackbill and Gaines (1964), Runyan (1965), Meyer (1966), Kinney and Schutz (1967), Jones, et al. (1973), Hiss (1976).

Water wells do not penetrate the Permian in Lea County, and well logs are not available. Oil-well logs generally contain limited information of value for an evaluation of fresh-water occurrences. However, oil-well geophysical logs are a valuable resource and can be studied to verify water quality on the basis of resistivity measurements. Resistivity estimates confirm the presence of water with less than 10,000 mg/l TDS in much of Lea County. Moreover, the good water often occurs in association with zones of good porosity in the Artesia Group and San Andres Formation. Thus, this fresh water is capable of being produced by wells. The units are neither non-aquifers nor salt-water aquifers. They must be classified as protected aquifers unless there is some basis for exemption.

The literature information, as modified by the geophysical data, allow preparation of aquifer maps and cross-sections of the type prepared for the

Artesia area. As the rough draft maps and sections developed by this study are similar in format and content to those in the previous report, they have not been developed for formal presentation and are not presented in this report except for Figures 7 and 8, presented subsequently.

The important conclusion reached from the literature study is that there is some fresh-water in rocks of Paleozoic age, and a need to pursue the aquifer evaluation process with regard to these rock units. This is the same conclusion reached in Artesia, where the additional study showed the fresh-water occurs in non-aquifers.

REVISED CLASSIFICATION

Based on the detailed literature search, analysis of logs, and interpretation of geology in the study area, it is apparent that the detailed evaluation of aquifers in Lea County pursuant to UIC guidance does produce results which differ from the existing State regulatory program which is based on less detailed information. The differences can be summarized as follows.

	<u>State Program</u>	<u>UIC Program</u>
Basis:	General geohydrologic knowledge of area	Detailed geohydrological study
Result:	Aquifers protected to base of Triassic; deeper units classed as salt-water aquifers with the possible exception of the Capitan Formation	Some Paleozoic units contain fresh water in various locations and must be considered as aquifers into which injection is prohibited unless there is a basis for exempting the aquifers from protection

While the State program is generally excellent in its protection of water, any existing regulations should not be necessarily considered as complete with regard to such protection.

DELINEATION OF FRESH WATER

Geologic controls of the distribution of fresh water were studied to provide a basis for drawing the boundary within which UIC protection may be required. The results are illustrated in Figures 7 - 9. Most of the available information is taken from Hiss (1975c, 1980). The discussion which follows is technical and assumes familiarity with the classic geology of the reef facies of the Permian Basin.

Hiss (1975c) describes strata of Permian Guadalupian age which contain three separate aquifers - shelf, basin, and the Capitan reef (Figure 7). The Capitan occurs at depth within an ancient shelf-margin reef zone which surrounds the Delaware Basin in New Mexico and Texas. Most of the Capitan aquifer has permeabilities several magnitudes higher than those found in adjacent shelf facies and overlying Ochoan age lithologies.

A major paleogeographic feature of the area is known as the Hobbs Channel (Figure 8). This channel was a bathymetric low in the Permian and connected the Delaware and Midland Basins on the northern end of the Central Basin Platform. Shelf-interior skeletal sands prograded through the channel

with communication of water between the basins. Interfingering with the sands are subtidal muds which have proved more susceptible to subsequent dolomitization. These shelf-margin facies correspond to the Artesia Group and San Andres limestone.

Fresh water has been supplied to the Capitan aquifer from recharge areas in the Guadalupe Mountains within Eddy County, New Mexico and the Glass Mountains in Pecos County, Texas (Figure 9). Movement of fresh water northward from the Glass Mountains caused leaching of soluble minerals from the Capitan and from overlying rocks, increasing the permeability and hydraulic conductivity of the aquifer while also increasing the salinity of the formation fluids. A recharge area also occurs in the Guadalupe Mountains to the west, but little of the fresh water from that area reached Lea County due to the existence of intervening zones of decreased permeability caused by the presence of ancient submarine canyons which incised the reef and which were filled with less permeable silts and clays. Incision of the Pecos River in the Pleistocene (?) cut off even this small amount of recharge (Figure 9b).

When the Capitan fresh water encounters permeability barriers in the vicinity of the Lea/Eddy County line, the water then moves northward into the limestone sand facies of the Hobbs Channel. Fresh water entering these facies during the Cenozoic selectively dissolved the more soluble carbonates of the skeletal sands, creating excellent permeability yet a complex path of water flow. In contrast, the dolomitized muds retain a low permeability and seldom

contain fresh water. At any one elevation, permeable and impermeable rocks are complexly related according to tidal flat drainage patterns; there simply is no single widespread unit which can be described as an aquifer.

In summary, recharge from the Glass Mountains has moved northward along selectively dissolved flow paths in the Capitan Reef and Hobbs Channel. The result is the irregular occurrence of fresh water in the Capitan reef in southern Lea County and in the San Andres Formation and Artesia Group in an arcuate shaped zone which is generally along or to the east of the Capitan Reef trend (Figure 8). Hiss (1975c) provides tabular listings of water-quality data for wells in Lea County, located to the nearest section. This listing identifies approximately 175 wells which produce or tap fresh water from Paleozoic strata (where fresh water is defined as a TDS of less than 10,000 mg/l^a).

Today the San Andres Formation within Lea County is also a prolific oil producer and supports many enhanced recovery projects and salt water disposal wells. The Capitan aquifer is a major supply of water for oil field water-flood projects. With the exploitation of fluid reserves within these two aquifers, Hiss suggests that the effects of recharge are diminishing, reducing the hydraulic load and isolating fresher waters already in place (Figure 9c).

a. Where only chloride data are available a graphical relationship between TDS and chloride can be used to estimate TDS. According to Hiss, on the average a chloride of 5400 mg/l is equivalent to 10,000 mg/l TDS.

The initial irregular movement of fresh water, and its subsequent isolation, make it difficult to define a boundary for a protected aquifer. One may encounter oil and water at the same depth within close lateral proximity. A plot of the 175 wells with fresh water shows that some occur in total isolation from the main trends described above. For example, a few oil wells in northern Lea County produce fresh water; almost all are in rocks older than the San Andres Formation and Artesia Group (e.g. Abo Formation). Nothing in the literature or log data accounts for this fresh water, although conceivably it has migrated northward from the Hobbs Channel. For purposes of UIC, these occurrences are so isolated that there is no basis for concluding that a fresh-water aquifer exists.

A fresh-water aquifer does exist in the Capitan Formation and associated San Andres Formation and Artesia Group. Most of the fresh water is produced from wells which occur in clusters within the trend of the Capitan Reef and Hobbs Channel. However, within such clusters there are almost always wells producing saline water from the same depth. Neither data nor geologic theories allow the delineation of a boundary for fresh water.

NEED TO CONSIDER EXEMPTIONS

The Capitan Formation, San Andres Formation and Artesia Group aquifers of Lea County contain localized fresh water and therefore are subject to UIC protection. The Artesia Group and, especially, the San Andres Formation are

used for brine disposal and waterflood in the study area. Table 1 lists major salt-water disposal wells in the area which inject brines in the general area of deep fresh water. Perhaps one-fifth to one-quarter of all brine disposal in southeastern New Mexico occurs into zones which are potentially protected aquifers. If injection to these aquifers is disallowed, then all the wells listed in Table 1 would be out of compliance with UIC regulations. The alternative to injection in the San Andres (4,000 - 5,000 feet deep) would be to use Devonian strata, at depths of up to 10,000 feet. A change in injection practices will be expensive and should not be undertaken without further analysis.

The State has one obvious alternative to protecting the deep aquifers of Lea County and phasing out injection into those units. This option is to apply UIC provisions for exemptions.

EVALUATION OF EXEMPTION CRITERIA

Steps 5-8 of Figure 1 indicate the procedure for determining whether the deep aquifers of Lea County may be exempt from UIC regulations. Although EPA personnel were able to provide assistance in application of the regulations, the Agency has developed no formal guidance to assist in the interpretation of the exemption criteria. Therefore, in this study a significant effort was made to develop basic concepts which might apply to the exemption procedures. The conclusions presented are preliminary and may be revised when EPA criteria are established.

Step 5 of Figure 1 shows that injection may be allowed in a fresh-water aquifer which is 'unusable as a source of drinking water because it is mineral, hydrocarbon or geothermal energy producing'. As stated this criteria envisions the disruption of a drinking water resource by the production of other resources. In Lea County such disruption could occur only in the immediate proximity of an oil pool, where fresh water is drawn into the pool and co-produced with the hydrocarbons. Protection of such fresh water would have no benefit so long as the hydrocarbon production continues.

EPA probably intended Step 5 to apply to waterflood projects; if not then UIC would eliminate all brine waterfloods in fresh-water areas. Since the regulations contain many provisions intended to minimize adverse impacts on the oil industry, it seems improbable that there was intent to adversely affect secondary-recovery oil production in this country.

In effect, Step 5 seems to allow exemption of any portion of a fresh-water aquifer which occurs in hydrologic connection with an adjoining hydrocarbon reservoir, provided that there is a direct relationship between hydrocarbon production and conditions in the aquifer. Such an exemption would apply in much of Lea County. However, there remain a number of brine-disposal wells which inject into the San Andres Formation in areas relatively removed from the oil pools of that aquifer (see Table 1). The exemption of hydrocarbon producing areas would not in itself fully resolve the apparent conflict between UIC regulations and the current activities of the oil industry in Lea County.

Step 6 of Figure 1 shows that injection may be allowed in a fresh-water aquifer which is 'unusable as a source of drinking water because it is situated at a depth or location which makes recovery of water for drinking-water purposes economically or technologically impractical'. It is difficult to understand what is meant by 'technologically impractical'. By UIC definition, a fresh-water aquifer is capable of yielding significant quantities of water to a well. Therefore there should be no technological barrier to its production. Also the water would be of sufficiently good quality that treatment is certain to be feasible. It seems prudent to ignore this provision of the regulations, since evidently there are no circumstances to which it might apply.

The criteria of 'economic impracticality' suggests that exemption might be allowed if it made no economic sense to ever use a given aquifer as a drinking water resource. At least two situations could make it economically impractical to utilize a particular deep aquifer.

1. Economics could justify exemption if the costs of fresh water from the aquifer were not competitive with costs of alternative water supplies available to an area. For example, in regions with abundant sources of cheap drinking water there would be no reason to prohibit injection into a relatively deep aquifer containing water of marginal quality. In contrast, where drinking water is scarce, a deep aquifer containing slightly saline water might well be a potentially economic water supply deserving of UIC protection.

2. Economics could justify exemption if the value of the aquifer for brine disposal were greater than its potential value as a drinking-water source. This means that the water-supply analysis described above needs to go beyond direct costs and benefits. In the specific case of a deep aquifer it means that costs of using the aquifer for drinking water should take into account the costs of abandoning the aquifer as an injection zone.

For this study a preliminary analysis was made to see if the deep fresh-water aquifers of Lea County are an economically practical source of drinking water. The analysis is summarized in Table 2. The San Andres Formation contains the largest and freshest of the potential drinking-water resources in the Hobbs Channel; the City of Hobbs is the principal area where drinking water is needed. Therefore, the analysis assumed that the fresh water in the San Andres Formation was a potential source of drinking water for the largest city in the area, Hobbs. The need for water in Hobbs was estimated for a 100-year period, and alternatives were identified for meeting that need. The costs of each option were estimated roughly and compared to the costs of the San Andres water. As summarized in the Table, the economic analysis shows that Hobbs can obtain 1.5 million acre-feet of Ogallala water at \$75 per acre-foot, much less expensive than the \$900+ per acre-foot cost of San Andres water. If Ogallala water were not available, then the San Andres water might be a realistic source of supply for Hobbs, since its cost is of the same order of magnitude as the Eastern New Mexico Water Supply Project.

Table 2 indicates that the economics of using San Andres fresh water become even more negative when its value as an injection zone are considered; changes to existing brine disposal would cost \$4000 per acre-foot of fresh water protected.

It seems reasonable to conclude that the San Andres can be exempted from UIC protection on the grounds that it is economically impractical to use this aquifer as an underground source of drinking water instead of as a brine disposal zone. The same conclusion would be reached for the smaller amounts of fresh water in other aquifers such as the Artesia Group, as well as the more distant supplies in the Capitan Formation.

It is not necessary to apply steps 7 or 8 to Lea County, since all rock units have now been classified. However, for purposes of completing this analysis it is worth noting that neither step would allow exemption of the deep aquifers in Lea County. Step 7 provides exemptions for contaminated water supplies. As with step 6, it is difficult to envision any situation in which it would be technologically impractical to render water fit for human consumption. It is possible to imagine supplies which are so contaminated as to be economically unusable. However, it is not clear why injection would be allowed into such contaminated zones, since injection would cause the area of contamination to expand into portions of the aquifer which are not now contaminated.

Step 8 provides exemptions to aquifers associated with activities such as in-situ mining; such activities are absent from Lea County.

FINAL CLASSIFICATION

The study area contains the most likely part of Lea County for protection of Paleozoic aquifers. Thus the results should be applicable elsewhere in the County. The analysis of aquifers in Lea County produced results which differ from the existing State regulatory program. The differences can be summarized as follows.

	<u>State Program</u>	<u>UIC Program</u>
Basis:	General geohydrologic knowledge of area	Detailed geohydrological study
Result:	Aquifers protected to base of Triassic; deeper units classed as salt-water aquifers with the possible exception of the Capitan Formation	Some Paleozoic units contain fresh water in various locations; they are exempted from protection on the basis of economic considerations

For practical purposes, then, the approach of the State program is in compliance with the requirements of UIC.

SUMMARY OF IN-DEPTH STUDY

A general literature search indicates that the base of fresh water in Lea County occurs at the base of the Triassic. However, more detailed evaluations supplemented by analysis of geophysical logs demonstrate that the Permian Capitan Formation, San Andres Formation and Artesia Group contain extensive amounts of water having 5,000-10,000 mg/l total dissolved solids. This water is: intermixed with more saline fluids; occurs principally in the paleogeographic features known as the Capitan Reef and Hobbs Channel; and is fossil (that is, there is no recharge at present).

A review of UIC criteria for aquifer exemption indicates that the Permian aquifers of Lea County should be exempt from protection; existing injection activities need not be curtailed. The criteria indicate that waterflood wells are allowable because of their importance to hydrocarbon production. This conclusion would apply anywhere in New Mexico. Brine disposal wells are allowable because the economics of such disposal more than compensate for the economic value of the fresh water. This conclusion is limited to Lea County, where there is abundant low-cost fresh water available from the Ogallala Formation, such that the Permian water is clearly not a cost-effective source of drinking water in the area.

APPENDIX 1. SUMMARY OF GEOHYDROLOGY OF LEA COUNTY.

From the literature search a number of basic findings were reached regarding the geohydrology of the area. These are shown in the list of Formations and water-bearing characteristics at the end of the Appendix.

General Geology. The principal source of water in Lea County is the Tertiary Ogallala Formation, a fine-grained, poorly consolidated, calcareous sand which crops out at or near the surface of all but the western edge of the county. In northern Lea County, where it covers most of the High Plains, the Ogallala Formation ranges in thickness from 100-250 feet; in general, the lower half of the unit is saturated. High Plains water wells yield up to 1700 gpm. Because there are no permanent streams, all recharge in the High Plains is derived from local precipitation. Because the Ogallala dips very shallowly to the south and east, there is some ground-water movement in these directions.

The Ogallala Formation in southern Lea County thins to the west and locally is covered by Quaternary alluvium which ranges from 0-400 feet thick. In many localities the Ogallala is not saturated, but along stream valleys and over the Eunice Plain, not only the Ogallala but also some of the overlying alluvium may be saturated. Water wells completed in the Ogallala Formation of southern Lea County yield from 30-700 gpm. Recharge in the southern part of the county is from both local precipitation and through-flowing streams.

The Ogallala Formation is underlain in scattered locations by Cretaceous shales and limestones. The Cretaceous sedimentary rocks are a major source of water only in the northern part of the county where the Ogallala is very thin. They yield water which is slightly more saline than that from the Ogallala, but the water is still of good quality.

Sandstones and shales of the Triassic Dockum Group underlie the Cretaceous sedimentary rocks. The Dockum Group underlies most of Lea County, but water is produced from it primarily in the southwestern and far northwestern parts of the county where overlying sediments are thin and/or unsaturated. Wells completed in the Dockum generally yield 10-15 gpm. Dockum waters average 500 mg/l sulfate, considerably higher than the 200 mg/l average of the overlying units. Recharge of the Dockum results from precipitation on up-dip outcrops of the formations along the western side of the county and from infiltration from overlying formations.

Most data sources on Lea County ground-water depict the base of useable fresh water as the bottom of the Rustler Formation (Nicholson and Clebech, 1961). As discussed in the text, W.L. Hiss (1975c) presents evidence of ground water containing less than 10,000 mg/l TDS within aquifers at depths greater than the Rustler, although none is now being used for human consumption.

LIST OF PROBABLE AQUIFERS IN LEA COUNTY, NEW MEXICO (SPO, 1967)

<u>SYSTEM AND STRATIGRAPHIC UNIT</u>	<u>WATER-BEARING CHARACTERISTICS</u>
Quaternary alluvium	Yields small quantities of usually fresh water
Tertiary Ogallala Formation	Good aquifer where saturated thickness is adequate. Has yielded up to 1,700 gpm to wells in Lea Co. Generally yields fresh water.
Cretaceous Tucumcari shale	Sand and gravel at base yields small quantities of water. Generally yields fresh to slightly saline water.
Triassic Dockum Group	Small quantities of water pumped for stock, domestic use; not everywhere reliable aquifer. Lower unit might yield small quantities of fresh water if tested.
Permian sedimentary rocks	Permeable units predominantly contain only highly saline water.
Older Paleozoic sedimentary rocks	Permeable units predominantly contain only highly saline water.
Precambrian metamorphic and igneous rocks	Probably contain little or no water.

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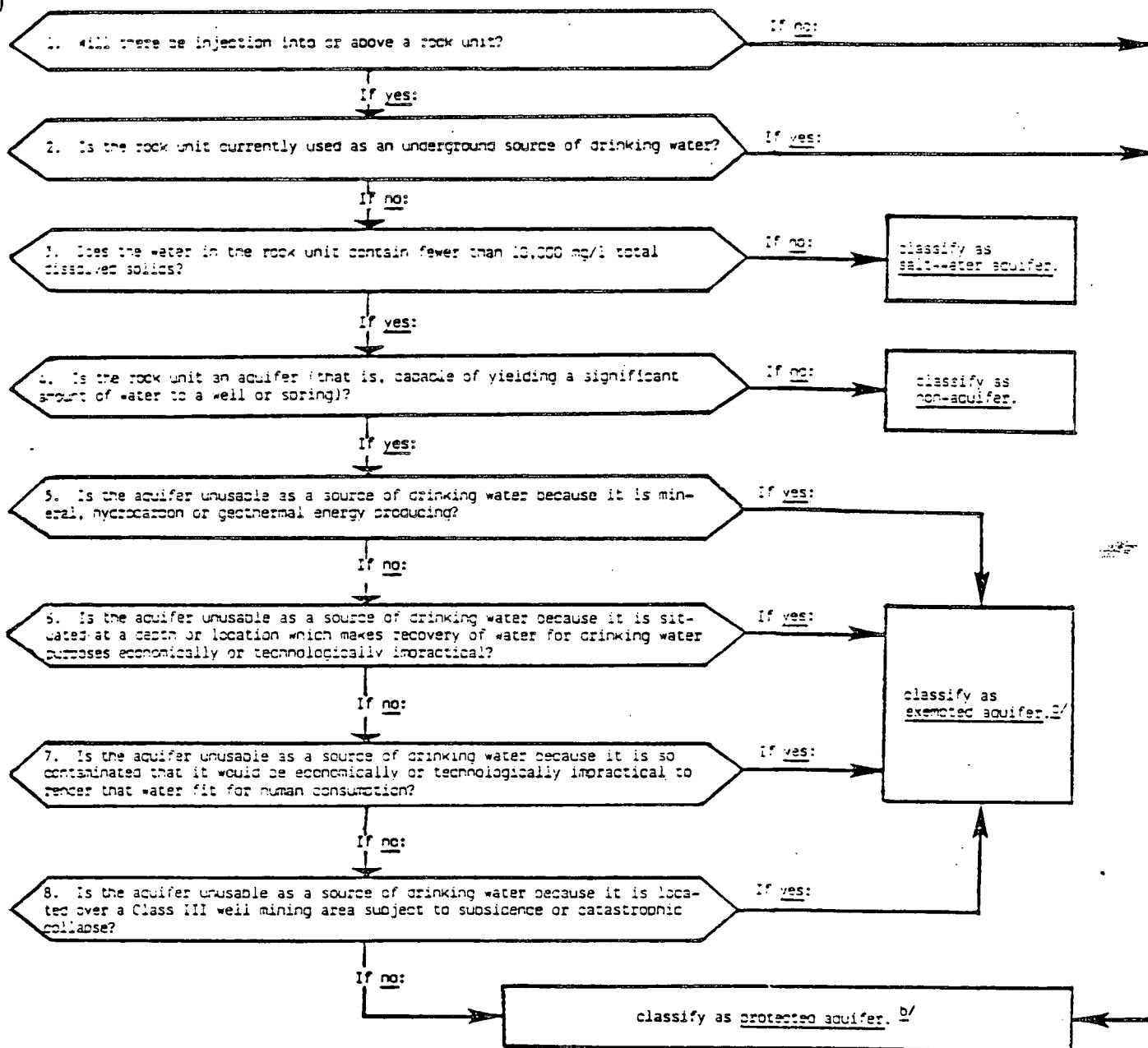
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FIGURE 1. AQUIFER EVALUATION PROCESS, UNDERGROUND INJECTION CONTROL PROGRAM

Based on guidance of UIC regulations in 40 CFR 143 and 146. The evaluation process involves questions about rock units ^{a/} which can be answered by yes or no. For each question, one of the answers is shown to lead to a particular classification of the rock unit, while the other answer leads to the asking of the next question. Every rock unit must be so classified; injection by Class I and Class 2 wells is not allowed into any interval which is nearer to the surface than the base of the deepest protected aquifer.



^{a/} A rock unit is a geological formation, or part thereof, which can be mapped and evaluated as to its general water-bearing and water-quality characteristics. This term is developed here because the UIC regulations contain no general term for the geological units which must be studied during aquifer classification.

^{b/} In the case of question 1, the classification as a protected aquifer is by default, since no regulatory action is required.

^{c/} The regulations require a public hearing prior to exemptions and explicit approval by EPA (in addition to approval by the Director of the State UIC Program). Other classifications (e.g. non-aquifer) do not appear to require a hearing and EPA approval.

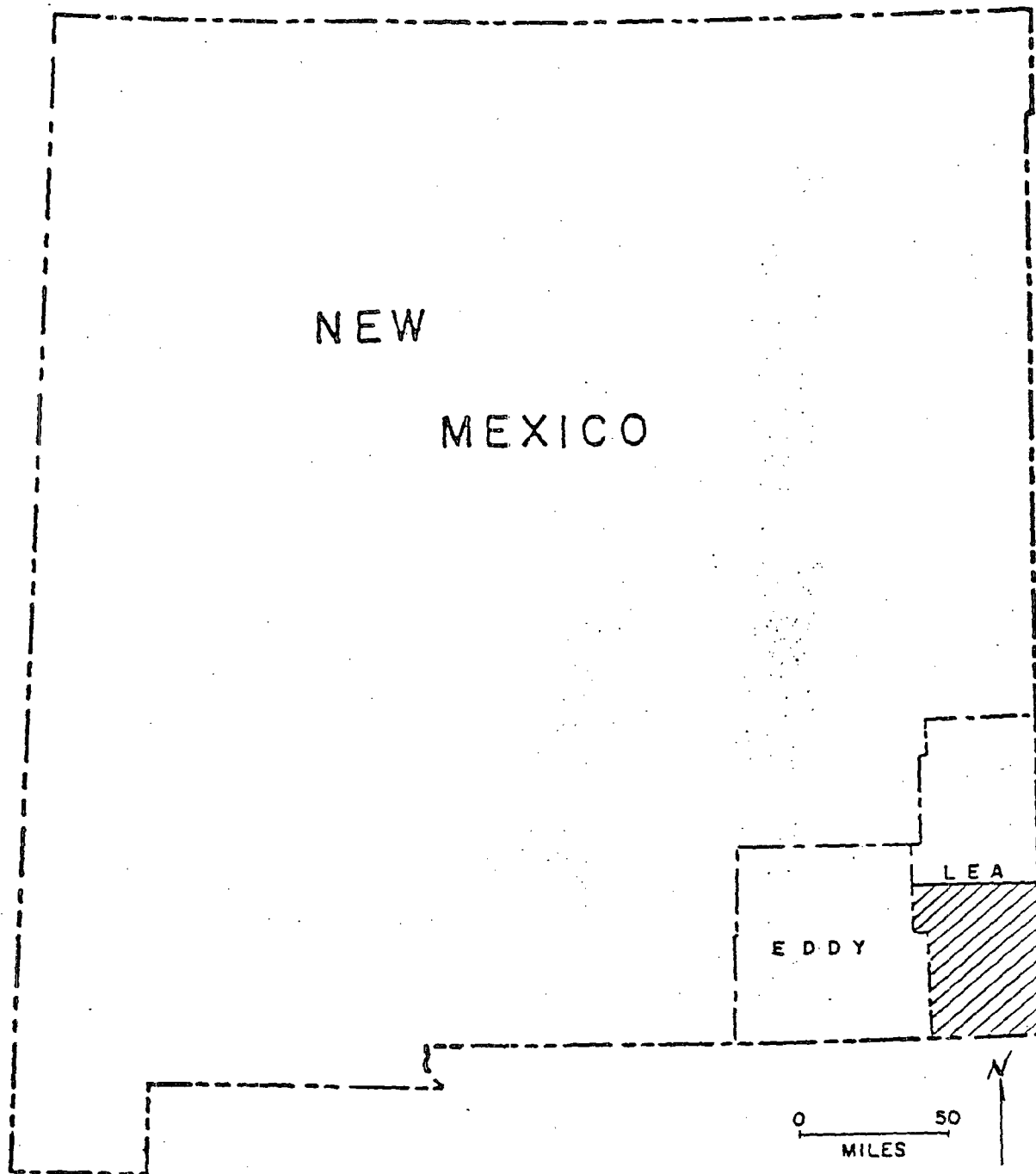


FIGURE 2. LOCATION OF STUDY AREA (LEA COUNTY, NEW MEXICO).
Slanted lines show area of intensive study.

Source: M. Holland, 1980.

GENERALIZED SECTIONS SOUTHEASTERN NEW MEXICO

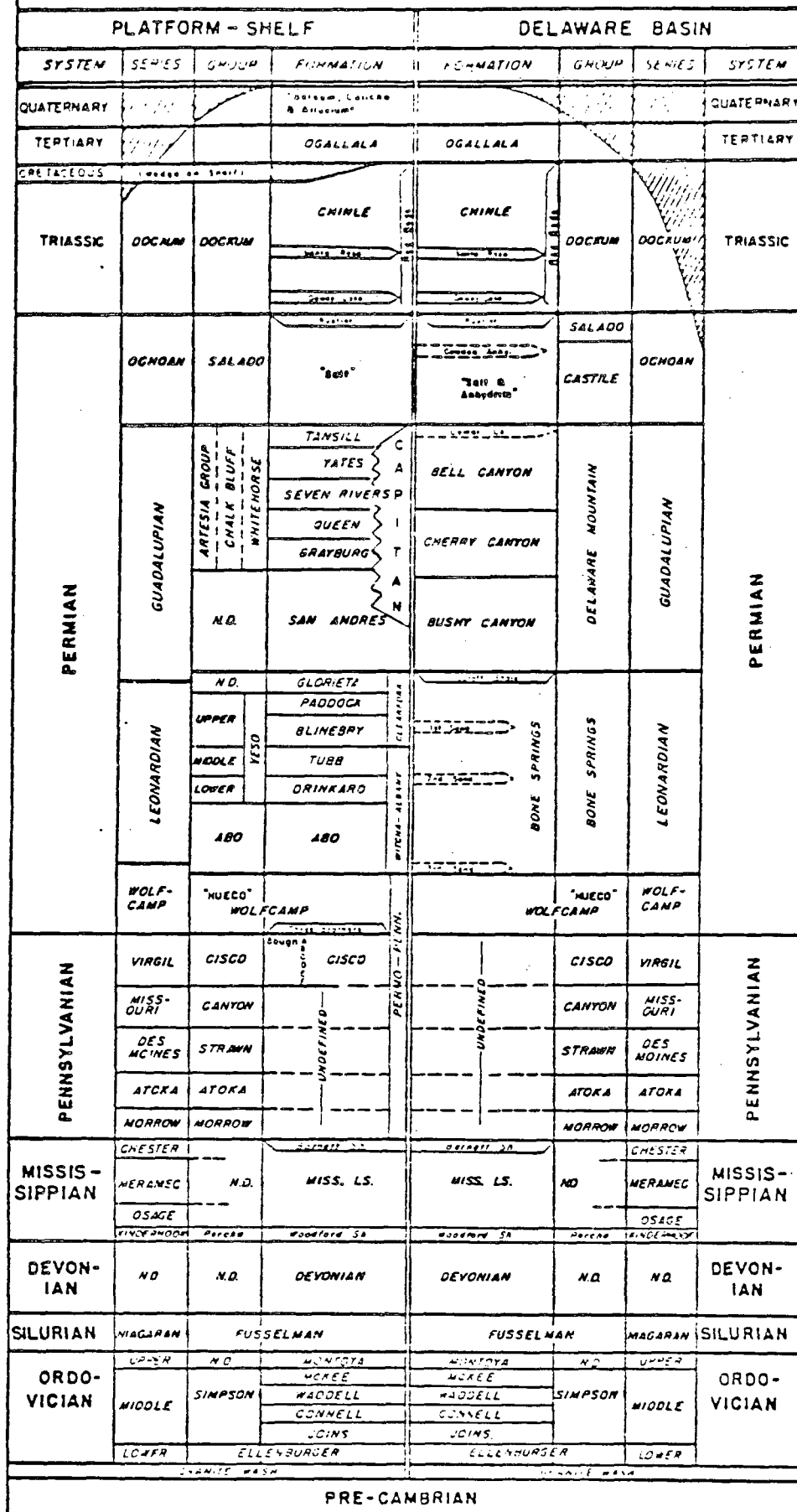


FIGURE 3. STRATIGRAPHIC COLUMN FOR THE STUDY AREA.

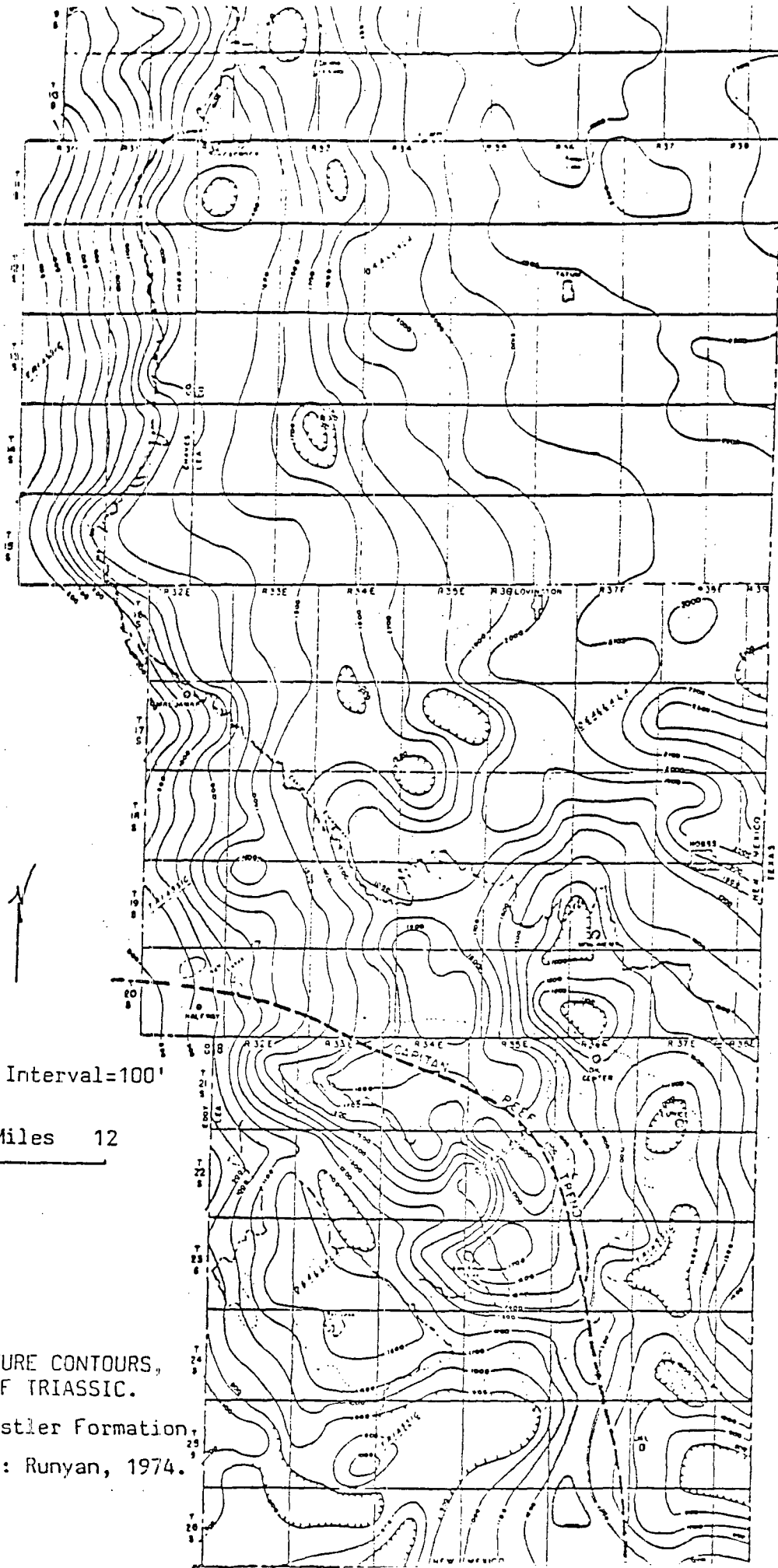
Contour Interval=100'

0 Miles 12

FIGURE 4. STRUCTURE CONTOURS,
BASE OF TRIASSIC.

Top of Permian Rustler Formation.

Source: Runyan, 1974.



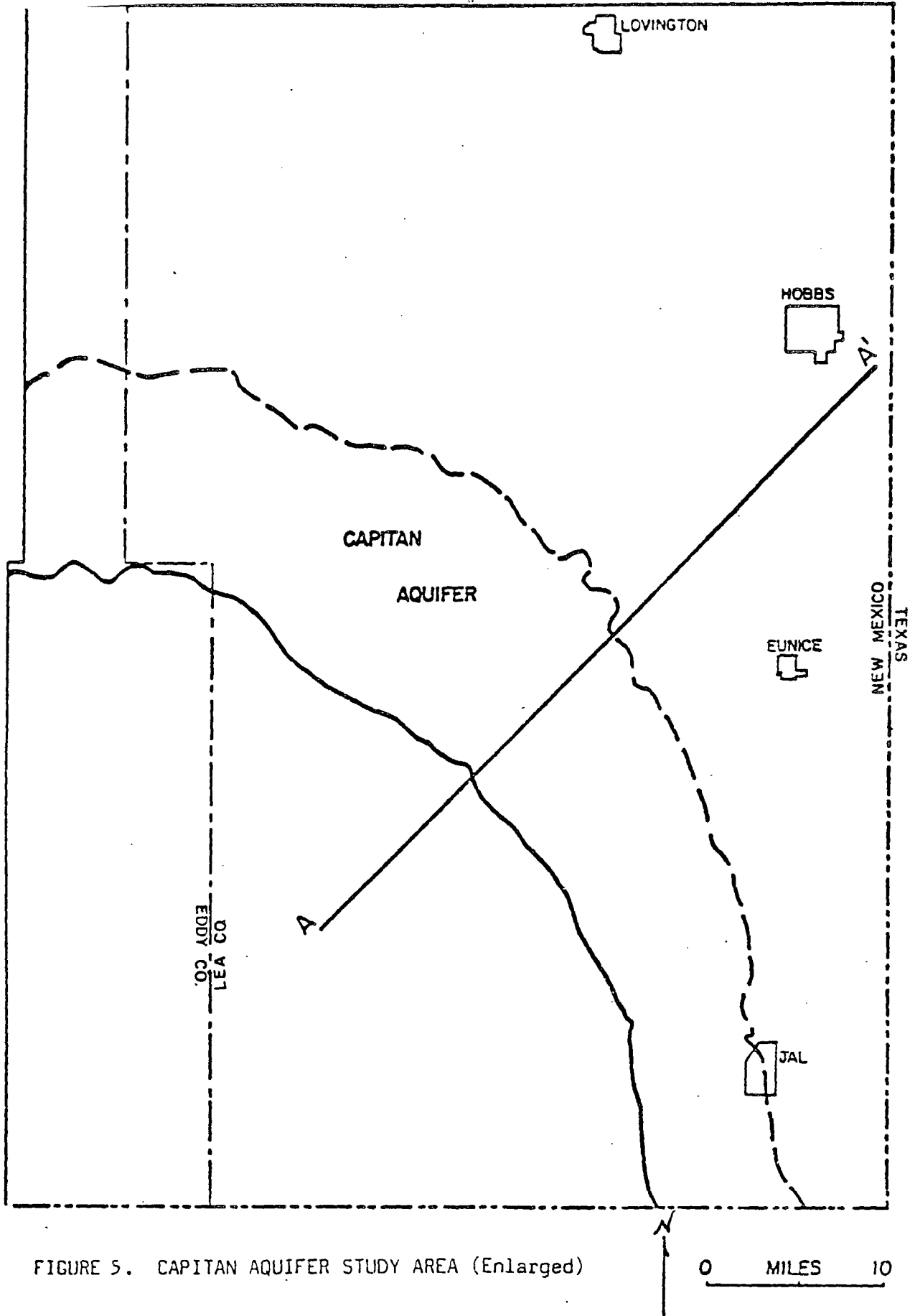


FIGURE 5. CAPITAN AQUIFER STUDY AREA (Enlarged)

- Capitan shelf edge
- - - Capitan basinal edge

Source: After W. Hiss, 1975.

FIGURE 6. AQUIFER STUDY REFERENCE FORM

Observer: _____

Date: _____

Citation: _____

Area: _____

Geologic Time: _____

General Subject: Geology; geohydrology; oil and gas; and other.

General level of detail/insight: _____

Subject	Text	Maps	X-sec	Data Tables	Quant. Anal.	Other (specify)
Lithology						
Stratigraphy						
Aquifer properties						
Water table						
Water use						
Water quality						
Salinity						
Oil and gas						
Other						

A

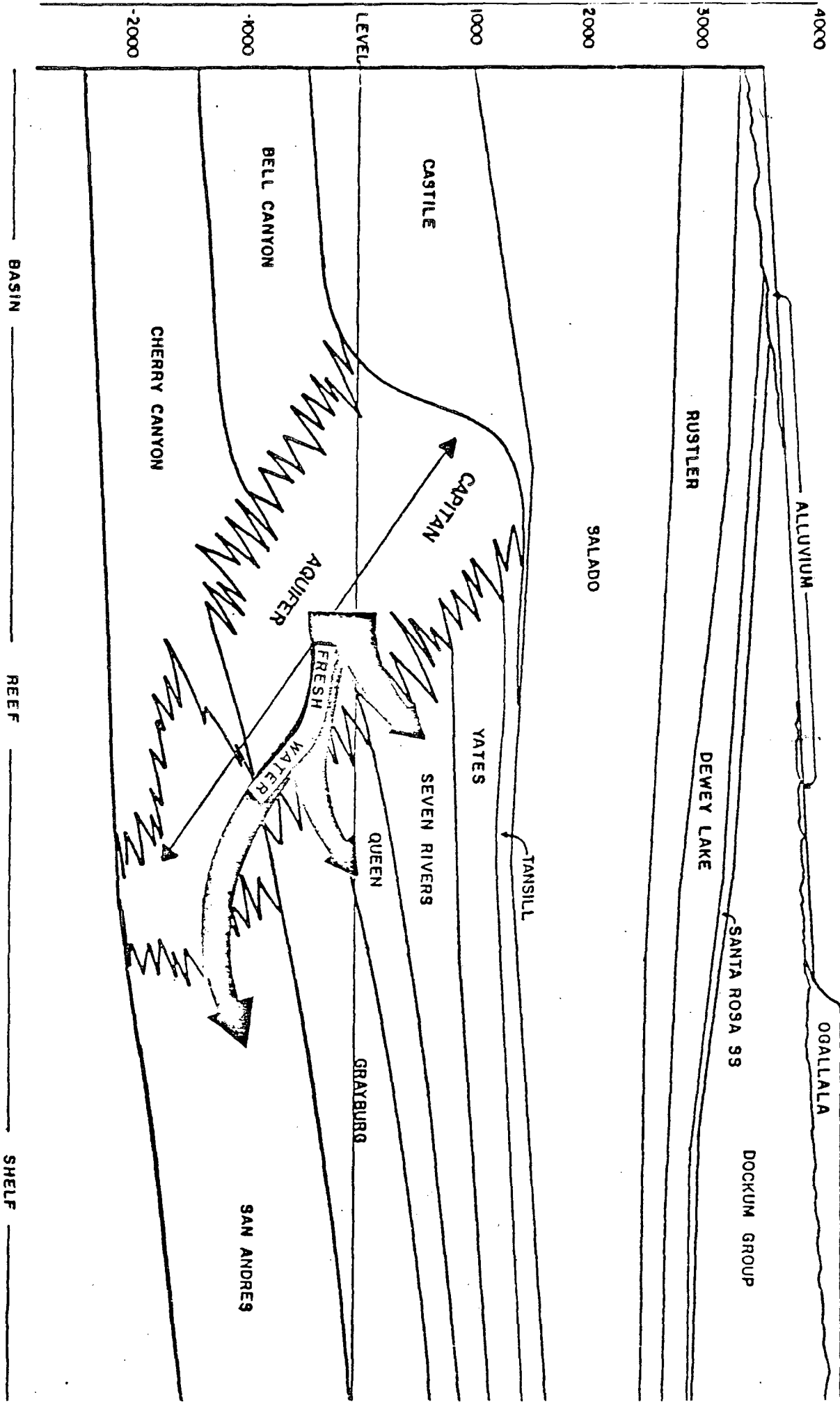


FIGURE 7. SCHEMATIC GEOLOGIC CROSS-SECTION OF THE STUDY AREA.

Source: H. Holland, 1980.

ACTUAL DATA

<u>Parameter</u>	<u>Formation</u>	<u>Value</u>	<u>Units</u>	<u>Comments</u>
Transmissivity				
Storage Coefficient				
Specific Storage				
Porosity				
Permeability				
Saturated Thickness				
Specific Yield				
Well Yields				
Specific Capacity				
Depth to Water				
Water-Table Elevation				
Water-Table Gradient				
Rate of Flow				
Leakance				
Diversion Rate				
Water Use				
TDS				
Other Quality				
Other Data				

Good References:

Items Xeroxed and Attached:

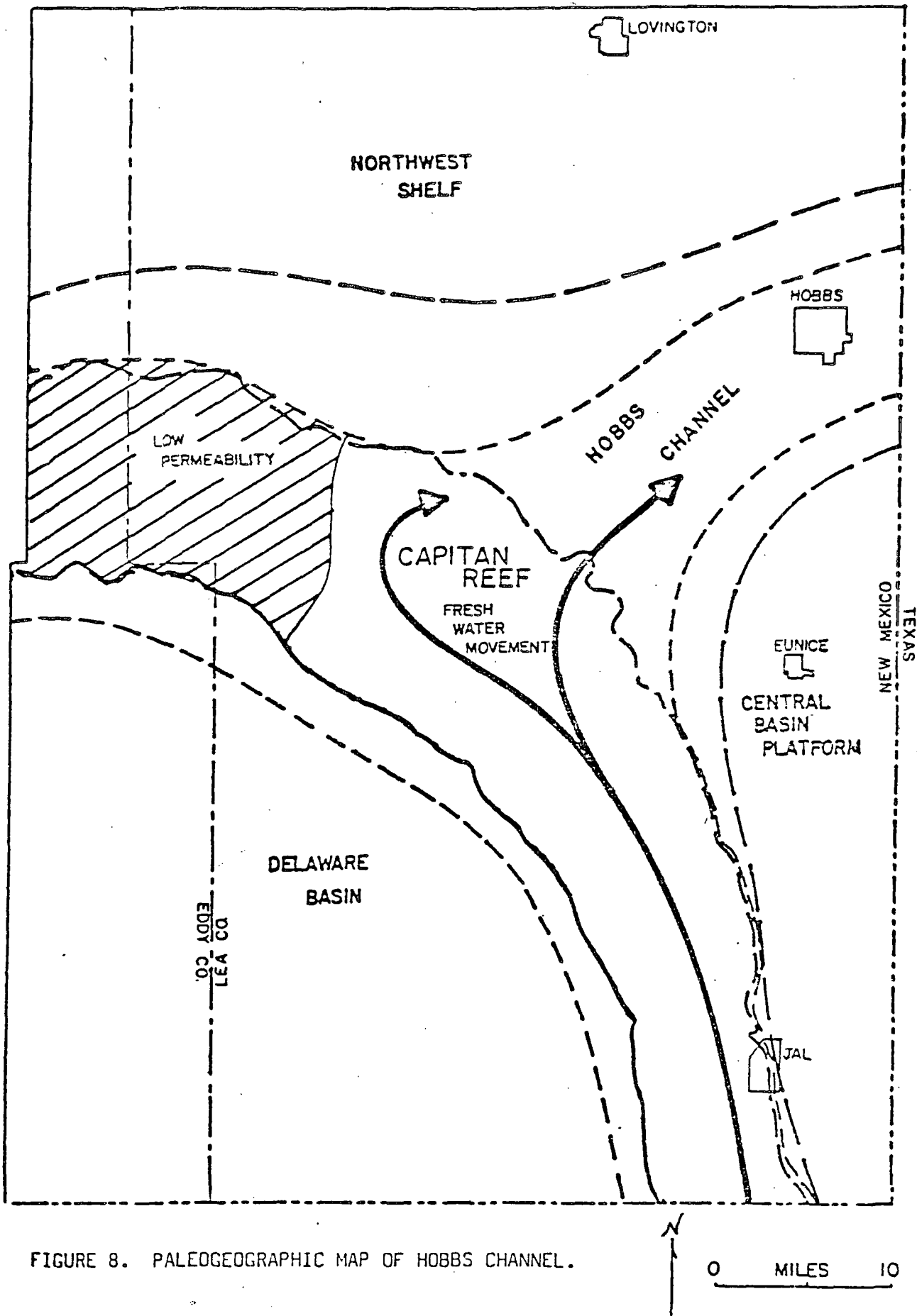
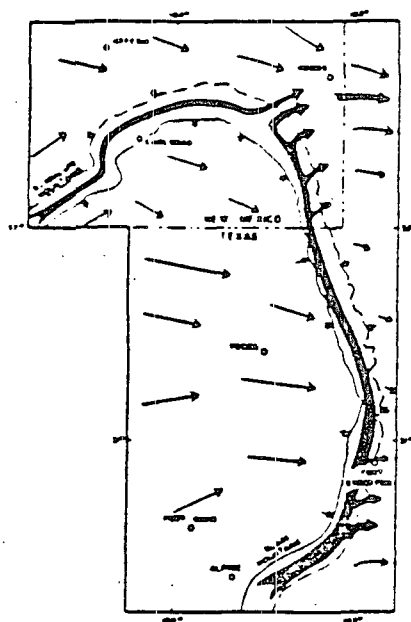
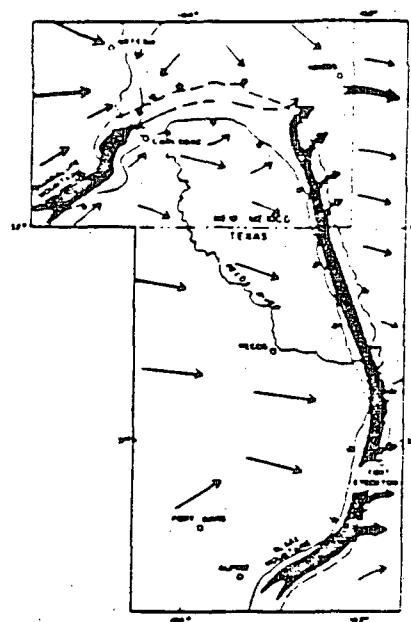


FIGURE 8. PALEOGEOGRAPHIC MAP OF HOBBS CHANNEL.

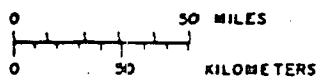
Source: Modified after W. Hiss, 1975
by M. Holland.



A. Regimen principally controlled by regional tectonics prior to development of the Pecos River.



B. Regimen influenced by erosion of Pecos River at Carlsbad downward into hydraulic communication with the Capitan aquifer.

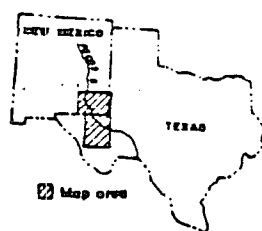


EXPLANATION

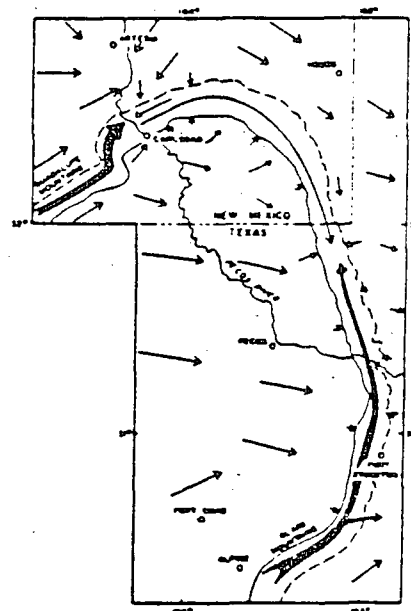
Capitan aquifer

Highly diagrammatic ground-water flow vectors:

1. Vector size indicates relative volume of ground-water flow.
2. Orientation indicates direction of ground-water movement.



INDEX MAP



C. Regimen influenced by both communication with the Pecos River at Carlsbad and the exploitation of ground-water and petroleum resources.

FIGURE 9. DIAGRAMMATIC MAPS DEPICTING THE EVOLUTION OF GROUND WATER REGIMENS IN STRATA OF PERMIAN GUADALUPIAN AGE IN SOUTHEASTERN NEW MEXICO AND WESTERN TEXAS.

Source: W. Hiss, 1974.

TABLE 1.

MAJOR SALT-WATER DISPOSAL WELLS WHICH OCCUR IN FRESH-WATER AREA OF
LEA COUNTY, NEW MEXICO.

Location = section, township (south), range (east).

Operator	Location	Injection Interval	Barrels Injected/month	Cumulative Injection
Rice	25-18-37	4446-4527	97,285	27,134,667
Rice	29-18-38	4469-4522	228,627	43,096,101
Rice	30-18-39	5105-5188	31,951	4,967,482
Rice	33-18-37	4500-4975	128,952	35,133,435
Rice	15-19-38	4634-4826	242,138	47,027,165
Rice	1-20-36	4300-4935	127,916	32,282,168
Rice	5-20-37	4515-4920	173,066	40,706,962
Rice	9-20-37	4396-4845	327,309	72,412,835
Rice	20-20-37	4451-4939	98,937	29,012,203
Rice	33-20-37	4500-5077	243,520	36,037,613
Rice	21-21-36		298,109	29,174,043
S & M Oil	5-18-39	5300-5854	17,390	646,793
Conoco	23-20-37	4547-4700	Disconnected	615,979
Truckers	6-21-36	4395-4435	25,170	1,086,652
McCasland	31-21-36		32,343	1,944,331
McCasland	6-22-36	3140-3295	32,343	1,805,883
Conoco	5-23-36	3710-52	Disconnected	70,444

Total injection = 2,105,056 barrels per month (for July 1980); 403,154,756 barrels cumulative in these wells. This is 18.5% of all 1979 injection in southeastern New Mexico.

TABLE 2. ECONOMIC TRADEOFFS FOR USE OF SAN ANDRES AQUIFER, HOBBS, N.M.

This summary analysis is not intended to serve as a detailed cost-benefit analysis. Estimated costs were obtained from Herkenhoff (1976) and from interviews with experts at OGD, City of Hobbs and elsewhere. Baseline data are on file at Lee Wilson and Associates, Inc.

A. DRINKING WATER

1. Hobbs, New Mexico has a projected population growth as follows (Herkenhoff, 1976).

<u>1970</u>	<u>1980</u>	<u>(Census 1980/ Town Est. 1980)</u>	<u>2000</u>	<u>2020</u>	<u>2080</u>
26,025	31,100	(29,200/32,900- 35,000)	49,833	59,325	87,801

2. If per capita water use remains at today's value (approximately 235 gallons per day), then in the year 2080 the annual demand for water would be approximately 23,000 acre-feet per year. For the 100-year period 1980-2080, cumulative demand is approximately 1.5 million acre-feet.

3. The Ogallala Formation near and north of Hobbs contains abundant fresh water. Based on present amounts of recoverable water in storage (11,000 acre-feet per square mile; Herkenhoff, 1976, p. 66) an area of 136 sq. miles would be needed to provide 1.5 million acre-feet.

4. The cost of developing the Ogallala supply (in today's dollars) is estimated at \$75 per acre-foot (Herkenhoff, 1976). Less than half this is for construction.

5. An alternative water supply which has been considered for (and rejected by) Hobbs is the Eastern New Mexico Water Supply Project which would divert water from Ute Dam in east-central New Mexico. The most recent evaluations indicate a dollar cost in excess of \$700/acre-foot for treated water available for storage and distribution within the City (Lloyd Calhoun, personal communication). The most optimistic estimate is that the project would supply less than 0.5 million acre-feet over its 50-year life.

6. The cost of San Andres water was roughly estimated assuming that there would be 6400 acre-feet of water available per square mile (500-foot saturated thickness; 2% specific yield) and that quality would average about 9,000 mg/l TDS. Based on Hiss (1975c) no more than half the wells in the Hobbs area would produce fresh water, so that the actual water supply would be no more than 3200 acre-feet per square mile. If so, the costs for developing supply pipelines would be similar to those for tapping the Ogallala. If we

assume that existing wells could be purchased at minimal cost, then the difference between Ogallala and San Andres water is that the latter must be pumped from depths of 1500 feet and must be treated to remove dissolved solids. (Although water is produced at 4,000 feet, artesian pressure produces a piezometric surface at 1,500 feet below the surface.) Pumping alone establishes that the San Andres will be more costly than Ogallala water. As a rough estimate, the pumping cost is about \$0.50 per thousand gallons (Note 1). Desalinization would be about \$2.25/thousand gallons based on estimates made for Alamogordo and El Paso (see note 2). The total cost of pumping and treatment would be about \$900 per acre-foot. Transmission and storage costs would probably be similar to the same costs for the Ogallala, \$25,000,000. This would add \$15-20/AF, a fraction of the pumping and treatment expense. Note that while San Andres water is much more expensive than Ogallala water, it is of the same order of magnitude as Ute Reservoir water.

B. INJECTION

1. To minimize the estimated value of the San Andres as an injection zone, we assume that energy production will not be affected by a change in disposal practices. The value of injection equals any increased costs which must be borne if disposal practices are changed. A simple estimate can be made by assuming that the annual increase in costs is approximately equal to the costs associated with changing disposal practices at the 15 existing wells listed in Table 1. That is, assume that these wells are the key to disposal over the next 20 years and estimate the increased costs which occur because of UIC regulations; then assume that although different wells may be involved thereafter, the annual dollar costs will be similar through the year 2030.

2. In order to dispose of 2 million barrels (42 gallons/barrel) of brine each month at the existing wells, the water could be desalted prior to injection into the fresh aquifers. Desalinization costs of at least \$2 per thousand gallons are likely, so that the total cost would amount to \$168,000 per month. Over a 20 year period this would cost \$40 million; over 100 years, \$200 million.

3. Following EPA guidance, each of the existing wells would not be expected to influence an area greater than 1/4 mile in radius. Thus, each well would influence at most 0.2 square mile of the aquifer; at 3,200 acre-feet of fresh water per square mile this means that at most each well would damage 640 acre-feet of water containing several thousand mg/l. Using the 20-year cost of treatment, the UIC regulations would impose a dollar cost of \$4,167 per acre-foot of fresh water protected. In reality, effects may occur over a much larger area, perhaps 1 square mile each; thus protection could extend to 3200 acre-feet of fresh water per well, at a cost of \$835/sq. foot.

4. Instead of treatment it would be possible to deepen each of the existing wells to inject into the Devonian, at a cost of \$500,000 each. For the 15 wells this amounts to a total cost of \$7.5 million; discounted over a 20-year period the total cost would be about \$0.7 million per year. This cost is less than the costs of treatment and results in the spending of about \$1000/AF to protect the San Andres fresh water (assuming 1/4 mile effect).

NOTES TO TABLE 2.

Note 1. Assumes 23.4 horsepower per million gallons per day per 100 feet of lift; 0.45 kilowatt hours per 1000 gallons of lift per 100 feet; \$2 per kWh.

Note 2. Treatment costs are as obtained for brine desalinization project in El Paso (Don Knorr, Parkhill, Smith and Cooper, personal communication) and Alamogordo (Joe Pierce, EID, personal communication). Note that desalinization produces brines which require safe disposal; costs of disposal are not included in this analysis.

UNDERGROUND INJECTION CONTROL PROGRAM FOR CLASS II WELLS
Memorandum of Agreement
Between
The State of New Mexico
and
The United States Environmental Protection Agency,
Region 6

I. General

This Memorandum of Agreement (Agreement) establishes policies, responsibilities, and procedures for the State of New Mexico Underground Injection Control Program for Class II injection wells (State Program) as authorized by Part C of Section 1425 of the Safe Drinking Water Act (Pub. L. 93-523, as amended) (SDWA or the Act).

This Agreement is entered into by the New Mexico Oil Conservation Division of the New Mexico Energy and Minerals Department and signed by Joe Ramey, Director of the Oil Conservation Division (the State) with the United States Environmental Protection Agency (EPA), Region 6 and signed by _____, EPA Regional Administrator (EPA or Regional Administrator). After it is signed by the State and the Regional Administrator, this Agreement shall become effective the date the notice of State Program approval is published in the Federal Register.

This Agreement may be modified upon the initiative of the State or EPA. Modifications must be in writing and must be signed by the Director and the Regional Administrator. Modifications may be made by revision prior to the effective date of this Agreement or after the effective date by consecutively numbered and dated addenda attached to this Agreement.

This Agreement shall remain in effect as long as the State has primary enforcement authority for the State Program.

When the State has a fully approved program, EPA will not take enforcement actions without providing prior notice to the State and otherwise complying with Section 1423 of the SDWA. Nothing in this Agreement shall restrict EPA's authority to take Federal enforcement action under Section 1423 of the SDWA.

The State shall administer the State Program in accordance with the program submissions, the SDWA, and the applicable regulations.

EPA shall promptly inform the State of the issuance, content, and meaning of Federal statutes, regulations, guidelines, standards, judicial decisions, policy decisions, directives, and any other factors which might affect the State Program.

The State shall promptly inform EPA of any proposed or pending modifications to laws, regulations, or guidelines, and any judicial decisions or administrative actions which might affect the State Program and the State's authority to administer the program. The State shall promptly inform EPA of any resource allocation changes (for example, personnel, budget, equipment, etc.) which might affect the State's ability to administer the program.

Prior to the use of an alternative test (a test not listed in Section d.3. of the Program Description) for mechanical integrity, the State shall submit a written request to the Regional Administrator and shall obtain his/her written approval. No approval shall be required for the State to conduct experimental test programs at any time.

An underground source of drinking water (USDW) shall be defined as an aquifer or portion thereof which supplies water for human consumption, or in which the ground water contains fewer than 10,000 mg/l TDS, and is not an exempted aquifer. An aquifer or portion thereof which would otherwise meet the definition of USDW and which is not otherwise exempt for the intended purpose under terms of the State Program may be exempted from protection under this program by the Director after public notice and opportunity for public hearing upon approval by the Regional Administrator. An aquifer or portion thereof may be exempted if it does not currently serve as a source of drinking water and it can not now and will not in the future serve as a source of drinking water because:

1. It is mineral, hydrocarbon or geothermal energy producing;
2. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
3. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption;
or
4. It is located over a Class III Well mining area subject to subsidence or catastrophic collapse.

All aquifer exemptions subsequent to program approval shall be subject to public hearing and to approval by the Regional Administrator.

II. Responsibilities

A. Sharing of Information on Class II Operations.

All information and records obtained or used in the administration of the State Program, including all underground injection control (UIC) permit files, shall be available to EPA or its authorized representative upon request without restriction. Any information obtained from the State by EPA which is subject to a claim of confidentiality shall be treated by EPA in accordance with EPA regulations governing confidentiality (40 CFR Part 2).

EPA shall furnish to the State the information in its files which the State needs to implement the State Program, subject to EPA regulations governing confidentiality (40 CFR Part 2).

The State shall retain records used in the administration of the program for 5 years (the current year plus four) unless an enforcement action is pending. In that event, all records pertaining to such action shall be retained until such action is resolved.

B. State Reports on Class II Operations.

The State shall submit to the Regional Administrator a mid-year and an annual report on the operation of the State Program.

The State shall submit to EPA no later than 30 days after the first 6 months of the fiscal year a mid-year report of the first 6 months. This report shall include a detailed description of the State's implementation of its program, suggested program changes, a description of activities by program element, including summaries of monitoring, surveillance and enforcement programs, an estimate of expenditures by program element, and an account of all UIC related complaints reviewed by the State and action taken.

The State shall submit to EPA no later than 45 days after the end of the fiscal year an annual program report of the entire year with emphasis on the last 6 months. This report shall include a detailed description of the State's implementation of its program, suggested program changes, a description of activities by program element, including summaries of monitoring, mechanical integrity testing and inspection, corrective action, surveillance and enforcement programs, an estimate of expenditures by program element, an account of all UIC related complaints reviewed by the State and action taken, and an updated inventory of active underground injection operations.

The State shall submit all reports in the format requested by EPA. Report formats shall normally be furnished to the State prior to the award of grant funds and any substantive changes shall have the concurrence of the State.

C. Program Evaluation for Class II Operations.

EPA shall conduct an annual evaluation of the State Program using the State reports and requested information to determine State Program consistency with the program submission, the SDWA, the applicable regulations, and applicable guidance and policies. The evaluation will include a review of financial expenditures.

EPA shall submit a draft of the program evaluation to the State for their review and comment within 15 working days after the submission of the annual program report. The State shall have 15 working days to submit comments on the draft evaluation to EPA. EPA shall make recommendations to the State based on the program evaluation.

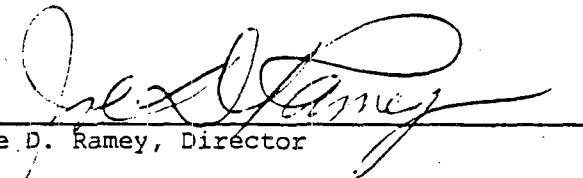
EPA may conduct a second evaluation during the year at their discretion.

D. Compliance Monitoring and Enforcement for Class II Operations.

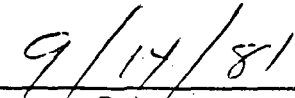
The State shall enforce the State Program in accordance with the enforcement procedures outlined in the program submission. The State shall take timely and appropriate enforcement actions against any person in violation of any State Program requirement. Situations endangering human health will receive immediate and paramount attention.

EPA shall conduct periodic site and activity inspections on Class II injection operations. The Regional Administrator will normally notify the State at least 7 days before any such inspection and allow opportunity for the State to accompany EPA on any such inspection.

OIL CONSERVATION DIVISION



Joe D. Ramey, Director



Date

ENVIRONMENTAL PROTECTION AGENCY, Region 6

Regional Administrator

Date

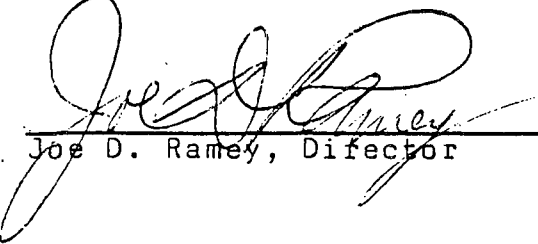
UNDERGROUND INJECTION CONTROL PROGRAM FOR CLASS II WELLS
Memorandum of Agreement
Between
The State of New Mexico
and
The United States Environmental Protection Agency,
Region 6

ADDENDUM NO. 1

That wells used for disposal of waters brought to the surface in connection with oil or natural gas production, when such waters are recovered at gas plants, will be regulated (permitted, reviewed, inspected, etc.) in the same manner as any such well on an individual lease or in a community disposal system.

That such wells will also be so regulated when said produced water is commingled with waste waters from any such gas plant where such plant is an integral part of production operations provided that the waters are not classified as a hazardous waste at the time of injection.

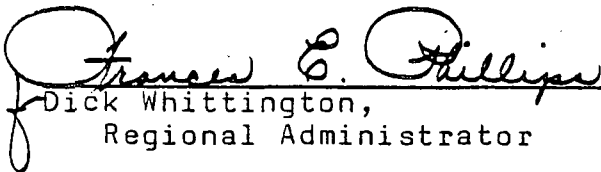
Oil Conservation Division



Joe D. Ramey, Director

June 10, 1982
Date

Environmental Protection Agency, Region 6



Dick Whittington,
Regional Administrator

June 28, 1982
Date

UNDERGROUND INJECTION CONTROL PROGRAM FOR CLASS II WELLS
Memorandum of Agreement
Between
The State of New Mexico
and
The United States Environmental Protection Agency,
Region 6

ADDENDUM No. 2

Section II.B. shall be edited as follows. Deletions are lined through and additions are underlined (underlined).

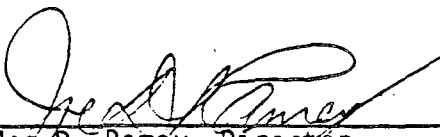
B. State Reports on Class II Operations.

The State shall submit to the Regional Administrator ~~a mid-year and~~ an annual report on the operation of the State Program.

~~The State shall submit to EPA no later than 30 days after the first 6 months of the fiscal year a mid-year report of the first 6 months. This report shall include a detailed description of the State's implementation of its program, suggested program changes, a description of activities by program element, including summaries of monitoring, surveillance and enforcement programs, an estimate of expenditures by program element, and an account of all UIC related complaints reviewed by the State and action taken.~~

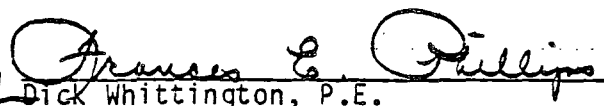
The State shall submit to EPA no later than 45 days after the end of the ~~fiscal~~ calendar year an annual program report of the entire year ~~with emphasis on the last 6 months~~. This report shall include a detailed description of the State's implementation of its program, suggested program changes, a description of activities by program element, including summaries of monitoring, mechanical integrity testing and inspection, corrective action, surveillance and enforcement programs, an estimate of expenditures by program element, an account of all UIC related complaints reviewed by the State and action taken, and an updated inventory of active underground injection operations.

The State shall submit all reports in the format requested by EPA. Report formats shall normally be furnished to the State prior to the award of grant funds and any substantive changes shall have the concurrence of the State.



Joe D. Ramey, Director
Oil Conservation Division

11-8-82
Date



Dick Whittington, P.E.
Environmental Protection Agency, Region 6

11.18.82
Date

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DEFINITIONS

ADJUSTED ALLOWABLE shall mean the allowable production a well or proration unit receives after all adjustments are made.

ALLOCATED POOL is one in which the total oil or natural gas production is restricted and allocated to various wells therein in accordance with proration schedules.

ALLOWABLE PRODUCTION shall mean that number of barrels of oil or standard cubic feet of natural gas authorized by the Division to be produced from an allocated pool.

AQUIFER shall mean a geological formation, group of formations, or a part of a formation that is capable of yielding a significant amount of water to a well or spring.

BACK ALLOWABLE shall mean the authorization for production of any shortage or underproduction resulting from pipeline prorationing.

BARREL shall mean 42 United States Gallons measured at 60 degrees Fahrenheit and atmospheric pressure at the sea level.

BARREL OF OIL shall mean 42 United States Gallons of oil, after deductions for the full amount of basic sediment, water, and other impurities present, ascertained by centrifugal or other recognized and customary test.

BOTTOM HOLE OR SUBSURFACE PRESSURE shall mean the gauge pressure in pounds per square inch under conditions existing at or near the producing horizon.

BRADENHEAD GAS WELL shall mean any well producing gas through wellhead connections from a gas reservoir which has been successfully cased off from an underlying oil or gas reservoir.

CARBON DIOXIDE GAS shall mean noncombustible gas composed chiefly of carbon dioxide occurring naturally in underground rocks.

CASINGHEAD GAS shall mean any gas or vapor or both gas and vapor indigenous to and produced from a pool classified as an oil pool by the Division. This also includes gas-cap gas produced from such an oil pool.

COMMISSION shall mean the Oil Conservation Commission.

COMMON PURCHASER FOR NATURAL GAS shall mean any person now or hereafter engaged in purchasing from one or more producers gas produced from gas wells within each common source of supply from which it purchases.

COMMON PURCHASER FOR OIL shall mean every person now engaged or hereafter engaging in the business of purchasing oil to be transported through pipelines.

COMMON SOURCE OF SUPPLY See Pool.

CONDENSATE shall mean the liquid recovered at the surface that results from condensation due to reduced pressure or temperature of petroleum hydrocarbons existing in a gaseous phase in the reservoir.

CONTIGUOUS shall mean acreage joined by more than one common point, that is, the common boundary must be at least one side of a governmental quarter-quarter section.

CONVENTIONAL COMPLETION shall mean a well completion in which the production string of casing has an outside diameter in excess of 2.875 inches.

CORRELATIVE RIGHTS shall mean the opportunity afforded, as far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practically determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for such purpose to use his just and equitable share of the reservoir energy.

CUBIC FOOT OF GAS OR STANDARD CUBIC FOOT OF GAS, for the purpose of these rules, shall mean that volume of gas contained in one cubic foot of space and computed at a base pressure of 10 ounces per square inch above the average barometric pressure of 14.4 pounds per square inch (15.025 psia), at a standard base temperature of 60 degrees Fahrenheit.

DEEP POOL shall mean a common source of supply which is situated 5000 feet or more below the surface.

DEPTH BRACKET ALLOWABLE shall mean the basic oil allowable assigned to a pool and based on its depth, unit size, or special pool rules, which, when multiplied by the market demand percentage factor in effect, will determine the top unit allowable for the pool.

DIVISION shall mean the Oil Conservation Division of the New Mexico Energy and Minerals Department.

EXEMPTED AQUIFER shall mean an aquifer that does not currently serve as a source of drinking water, and which cannot now and will not in the foreseeable future serve as a source of drinking water because:

(1) it is hydrocarbon producing; (2) it is situated at a depth or location which makes the recovery of water for drinking water purposes economically or technologically impractical; or, (3) it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption.

FIELD means the general area which is underlaid or appears to be underlaid by at least one pool; and field also includes the underground reservoir or reservoirs containing such crude petroleum oil or natural gas, or both. The words field and pool mean the same thing when only one underground reservoir is involved; however, field unlike pool may relate to two or more pools.

GAS LIFT shall mean any method of lifting liquid to the surface by injecting gas into a well from which oil production is obtained.

GAS-OIL RATIO shall mean the ratio of the casinghead gas produced in standard cubic feet to the number of barrels of oil concurrently produced during any stated period.

GAS-OIL RATIO ADJUSTMENT shall mean the reduction in allowable of a high gas-oil ratio unit to conform with the production permitted by the limiting gas-oil ratio for that particular pool during a particular proration period.

GAS TRANSPORTATION FACILITY shall mean a pipeline in operation serving gas wells for the transportation of natural gas, or some other device or equipment in like operation whereby natural gas produced from gas wells connected therewith can be transported or used for consumption.

GAS WELL shall mean a well producing gas or natural gas from a gas pool, or a well with a gas-oil ratio in excess of 100,000 cubic feet of gas per barrel of oil producing from an oil pool.

HIGH GAS-OIL RATIO PRORATION UNIT shall mean a unit with at least one producing oil well with a gas-oil ratio in excess of the limiting gas-oil ratio for the pool in which the unit is located.

ILLEGAL GAS shall mean natural gas produced from a gas well in excess of the allowable determined by the Division.

ILLEGAL OIL shall mean crude petroleum oil produced in excess of the allowable as fixed by the Division.

ILLEGAL PRODUCT shall mean any product of illegal gas or illegal oil.

INJECTION OR INPUT WELL shall mean any well used for the injection of air, gas, water, or other fluids into any underground stratum.

LIMITING GAS-OIL RATIO shall mean the gas-oil ratio assigned by the Division to a particular oil pool to limit the volumes of casinghead gas which may be produced from the various oil producing units within that particular pool.

LOAD OIL is any oil or liquid hydrocarbon which has been used in remedial operation in any oil or gas well.

LOG OR WELL LOG shall mean a systematic detailed and correct record of formations encountered in the drilling of a well.

MARGINAL UNIT shall mean a proration unit which is incapable of producing top unit allowable for the pool in which it is located.

MARKET DEMAND PERCENTAGE FACTOR shall mean that percentage factor of 100 percent or less as determined by the Division at an oil allowable hearing, which, when multiplied by the depth bracket allowable applicable to each pool, will determine the top unit allowable for that pool.

MINIMUM ALLOWABLE shall mean the minimum amount of production from an oil or gas well which may be advisable from time to time to the end that production will repay reasonable lifting cost and thus prevent premature abandonment and resulting waste.

MULTIPLE COMPLETION (COMBINATION) shall mean a multiple completion in which two or more common sources of supply are produced through a combination of two or more conventional diameter casing strings cemented in a common well-bore, or a combination of small diameter and conventional diameter casing strings of which might or might not be a Multiple Completion (Conventional).

MULTIPLE COMPLETION (CONVENTIONAL) shall mean a completion in which two or more common sources of supply are produced through one or more strings of tubing installed within a single casing string, with the production from each common source of supply completely segregated by means of packers.

MULTIPLE COMPLETION (TUBINGLESS) shall mean a completion in which two or more common sources of supply are produced through an equal number of casing strings cemented in a common well-bore, each such string of casing having an outside diameter of 2.875 inches or less, with the production from each common source of supply completely segregated by use of cement.

NATURAL GAS OR GAS shall mean any combustible vapor composed chiefly of hydrocarbons occurring naturally in a pool classified by the Division as a gas pool.

NON-MARGINAL UNIT shall mean a proration unit which is capable of producing top unit allowable for the pool in which it is located, and to which has been assigned a top unit allowable.

OFFICIAL GAS-OIL RATIO TEST shall mean the periodic gas-oil ratio test made by order of the Division by such method and means and in such manner as prescribed by the Division.

OIL, CRUDE OIL, OR CRUDE PETROLEUM OIL shall mean any petroleum hydrocarbon produced from a well in the liquid phase and which existed in a liquid phase in the reservoir.

OIL WELL shall mean any well capable of producing oil and which is not a gas well as defined herein.

OPERATOR shall mean any person or persons who, duly authorized, is in charge of the development of a lease or the operation of a producing property.

OVERAGE OR OVERPRODUCTION shall mean the amount of oil or the amount of natural gas produced during a proration period in excess of the amount authorized on the proration schedule.

OWNER means the person who has the right to drill into and to produce from any pool, and to appropriate the production either for himself or for himself and another.

PENALIZED UNIT shall mean a proration unit to which, because of an excessive gas-oil ratio, an allowable has been assigned which is less than top unit allowable for the pool in which it is located and also less than the ability of the well(s) on the unit to produce.

PERSON means any natural person, corporation, association, partnership, receiver, trustee, guardian, executor, administrator and fiduciary of any kind.

POOL means any underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both. Each zone of a general structure, which zone is completely separated from any other zone in the structure, is covered by the word "pool" as used herein. "Pool" is synonymous with "common source of supply" and with "common reservoir."

POTENTIAL shall mean the properly determined capacity of a well to produce oil, or gas, or both, under conditions prescribed by the Division.

PRESSURE MAINTENANCE shall mean the injection of gas or other fluid into a reservoir, either to maintain the existing pressure in such reservoir or to retard the natural decline in the reservoir pressure.

PRODUCER shall mean the owner of a well or wells capable of producing oil or natural gas or both in paying quantities.

PRODUCT means any commodity or thing made or manufactured from crude petroleum oil or natural gas, and all derivatives of crude petroleum oil or natural gas, including refined crude oil, crude tops, topped crude, processed crude petroleum, residue from crude petroleum, cracking stock, uncracked fuel oil, treated crude oil, fuel oil, residuum, gas oil, naphtha, distillate, gasoline, kerosene, benzine, wash oil, lubricating oil, and blends or mixtures of crude petroleum oil or natural gas or any derivative thereof.

PRORATION DAY shall consist of 24 consecutive hours which shall begin at 7 a.m. and end at 7 a.m. on the following day.

PRORATION MONTH shall mean the calendar month which shall begin at 7 a.m. on the first day of such month and end at 7 a.m. on the first day of the next succeeding month.

PRORATION PERIOD shall mean for oil the proration month and for gas the twelve-month period which shall begin at 7 a.m. January 1 of each year and end at 7 a.m. on January 1 of the succeeding year.

PRORATION SCHEDULE shall mean the order of the Division authorizing the production, purchase, and transportation of oil, casinghead gas, and natural gas from the various units of oil or of natural gas in allocated pools.

RECOMPLETE shall mean the subsequent completion of a well in a different pool from the pool in which it was originally completed.

SECONDARY RECOVERY shall mean a method of recovering quantities of oil or gas from a reservoir which quantities would not be recoverable by ordinary primary depletion methods.

SHALLOW POOL shall mean a pool which has a depth range from 0 to 5000 feet.

SHORTAGE OR UNDERPRODUCTION shall mean the amount of oil or the amount of natural gas during a proration period by which a given proration unit failed to produce an amount equal to that authorized in the proration schedule.

SHUT-IN PRESSURE shall mean the gauge pressure noted at the wellhead when the well is completely shut in, not to be confused with bottom hole pressure.

TANK BOTTOMS shall mean that accumulation of hydrocarbon material and other substances which settles naturally below crude oil in tanks and receptacles that are used in handling and storing of crude oil, and which accumulation contains in excess of two (2%) percent of basic sediment and water; provided, however, that with respect to lease production and for lease storage tanks, a tank bottom shall be limited to that volume of the tank in which it is contained that lies below the bottom of the pipeline outlet thereto.

TEMPORARY ABANDONMENT shall mean a state or period of suspended operations during which continuous drilling, production, injection, storage, or work-over operations have not taken place. Such period shall be 60 days for drilling wells and six months for all other classes of wells.

TOP UNIT ALLOWABLE FOR GAS shall mean the maximum number of cubic feet of natural gas, for the proration period, allocated to a gas producing unit in an allocated gas pool.

TOP UNIT ALLOWABLE FOR OIL shall mean the maximum number of barrels for oil daily for each calendar month allocated on a proration unit basis in a pool to non-marginal units. The top unit allowable for a pool shall be determined by multiplying the applicable depth bracket allowable by the market demand percentage factor in effect.

TREATING PLANT shall mean any plant constructed for the purpose of wholly or partially or being used wholly or partially for reclaiming, treating, processing, or in any manner making tank bottoms or any other waste oil marketable.

TUBINGLESS COMPLETION shall mean a well completion in which the production string of casing has an outside diameter of 2.875 inches or less.

UNDERGROUND SOURCE OF DRINKING WATER shall mean an aquifer which supplies water for human consumption or which contains ground water having a total dissolved solids concentration of 10,000 mg/l or less and which is not an exempted aquifer.

UNIT OF PRORATION FOR GAS shall consist of such multiples of 40 acres as may be prescribed by special pool rules issued by the Division.

UNIT OF PRORATION FOR OIL shall consist of one 40-acre tract or such multiples of 40-acre tracts as may be prescribed by special pool rules issued by the Division.

UNORTHODOX WELL LOCATION shall mean a location which does not conform to the spacing requirements established by the rules and regulations of the Division.

WASTE, in addition to its ordinary meaning, shall include:

- (a) Underground Waste as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy and water drive, or any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas.
- (b) Surface Waste as those words are generally understood in the oil and gas business, and in any event to embrace the unnecessary or excessive surface loss or destruction without beneficial use, however caused, of natural gas of any type or in any form or crude petroleum oil, or any product thereof, but including the loss or destruction, without beneficial use, resulting from evaporation, seepage, leakage, or fire, especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating or producing, well or wells, or incident to or resulting from the use of inefficient storage or from the production of crude petroleum oil or natural gas, in excess of the reasonable market demand.
- (c) The production of crude petroleum oil in this state in excess of the reasonable market demand for such crude petroleum oil. Such excess production causes or results in waste which is prohibited by the Oil and Gas Act. The words "reasonable market demand" as used herein with respect to crude petroleum oil, shall be construed to mean the demand for such crude petroleum oil, for reasonable current requirements for current consumption and use within or outside of the state, together with the demand for such amounts as are reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil or the products thereof, or both such crude petroleum oil and products.
- (d) The non-ratable purchase or taking of crude petroleum oil in this state. Such non-ratable taking and purchasing causes or results in waste, as defined in the subsections (a), (b), (c) of this section and causes waste by violating Section 65-3-13 of the Oil and Gas Act.
- (e) The production in this state of natural gas from any gas well or wells, or from any gas pool, in excess of the reasonable market demand from such source for natural gas of the type produced, or in excess of the capacity of gas transportation facilities for such type of natural gas. The words "reasonable market demand," as used herein with respect to natural gas, shall be construed to mean the demand for natural gas for reasonable current requirements, for current consumption and for use within or outside the state, together with the demand for such amounts as are necessary for building up or maintaining reasonable storage reserves of natural gas or products thereof, or both such natural gas and products.

B - MISCELLANEOUS RULES

RULE 1. SCOPE OF RULES AND REGULATIONS

(a) The following General Rules of statewide application have been adopted by the Oil Conservation Division of the New Mexico Energy and Minerals Department to conserve the natural resources of the State of New Mexico, to prevent waste, and to protect correlative rights of all owners of crude oil and natural gas. Special rules, regulations and orders have been and will be issued when required and shall prevail as against General Rules, Regulations and Orders if in conflict therewith. However, whenever these General Rules do not conflict with special rules heretofore or hereafter adopted, these General Rules shall apply.

(b) The Division may grant exceptions to these rules after notice and hearing, when the granting of such exceptions will not result in waste but will protect correlative rights or prevent undue hardship.

RULE 2. ENFORCEMENT OF LAWS, RULES AND REGULATIONS DEALING WITH CONSERVATION OF OIL AND GAS

The Division, its agents, representatives and employees are charged with the duty and obligation of enforcing all rules and statutes of the State of New Mexico relating to the conservation of oil and gas. However, it shall be the responsibility of all the owners or operators to obtain information pertaining to the regulation of oil and gas before operations have begun.

RULE 3. WASTE PROHIBITED

(a) The production or handling of crude petroleum oil or natural gas of any type or in any form, or the handling of products thereof, in such a manner or under such conditions or in such amount as to constitute or result in waste is hereby prohibited.

(b) All operators, contractors, drillers, carriers, gas distributors, service companies, pipe pulling and salvaging contractors, or other persons shall at all times conduct their operations in the drilling, equipping, operating, producing, plugging and abandonment of oil and gas wells in a manner that will prevent waste of oil and gas, and shall not wastefully utilize oil or gas, or allow either to leak or escape from a natural reservoir, or from wells, tanks, containers, pipe or other storage, conduit or operating equipment.

RULE 4. UNITED STATES GOVERNMENT LEASES

The Division recognizes that all persons drilling on United States Government land shall comply with the United States government regulations. Such persons shall also comply with all applicable State rules and regulations which are not in conflict therewith. Copies of "Application for Permit to Drill, Deepen or Plug Back," (USGS Form No. 9-331C), "Sundry Notices and Reports on Wells," (USGS Form No. 9-331), and "Well Completion or Recompletion Report and Log," (USGS Form No. 9-330), for wells on U.S. Government land shall be furnished by the Division.

RULE 5. CLASSIFYING AND DEFINING POOLS

The Division will determine whether a particular well or pool is a gas or oil well, or a gas or oil pool, as the case may be, and from time to time classify and reclassify wells and name pools accordingly, and will determine the limits of any pool or pools producing crude petroleum oil or natural gas and from time to time redetermine such limits.

RULE 6. FORMS UPON REQUEST

Forms for written notices, request and reports required by the Division will be furnished upon request.

RULE 7. AUTHORITY TO COOPERATE WITH OTHER AGENCIES

The Division may from time to time enter into arrangements with State and Federal governmental agencies, industry committees and individuals, with respect to special projects, services and studies relating to conservation of oil and gas.

C - DRILLING

RULE 101. PLUGGING BOND

(a) Any person, firm, corporation, or association who has drilled or acquired, is drilling, or proposes to drill or acquire any oil, gas, or service well on privately owned or state owned lands within this state shall furnish to the Division, and obtain approval thereof, a surety bond running to the State of New Mexico, in a form prescribed by the Division, and conditioned that the well be plugged and abandoned in compliance with the rules and regulations of the Division. Such bond may be a one-well plugging bond or a blanket plugging bond. All bonds shall be executed by a responsible surety company authorized to do business in the State of New Mexico.

(b) Blanket plugging bonds shall be in the amount of fifty thousand dollars (\$50,000) conditioned as above provided, covering all oil, gas, or service wells drilled, acquired or operated in this state by the principal on the bond.

One-well plugging bonds shall be in the amounts stated below in accordance with the depth and location of the well:

Chaves, Eddy, Lea, McKinley, Rio Arriba, Roosevelt, Sandoval, and San Juan Counties, New Mexico:

<u>Projected Depth of Proposed Well or Actual Depth of Existing Well</u>	<u>Amount of Bond</u>
Less than 5,000 feet	\$ 5,000
5,000 feet to 10,000 feet	\$ 7,500
More than 10,000 feet	\$10,000

All Other Counties in the State:

<u>Projected Depth of Proposed Well or Actual Depth of Existing Well</u>	<u>Amount of Bond</u>
Less than 5,000 feet	\$ 7,500
5,000 feet to 10,000 feet	\$10,000
More than 10,000 feet	\$12,500

Revised plans for an actively drilling well may be approved by the appropriate District Office of the Division for drilling as much as 500 feet deeper than the normal maximum depth allowed on the well's bond. Any well to be drilled more than 500 feet deeper than the normal depth bracket must be covered by a new bond in the amount prescribed for the deeper depth bracket.

The bond requirement for any intentionally deviated well shall be determined by the well's measured depth, and not its true vertical depth.

(c) Any bond required by this rule is a plugging bond, not a drilling bond, and shall endure until any well drilled or acquired under such bond has been plugged and abandoned and such plugging and abandonment has been approved by the Division, or has been covered by another bond approved by the Division.

(d) Transfer of a property does not of itself release a bond. In the event of transfer of ownership of a well, the appropriate form, C-103 or C-104, properly executed, shall be filed with the District Office of the Division in accordance with Rule 1103 or Rule 1104 by the new owner of the well. The District Office may approve the transfer providing that a new one-well bond covering the well, or a request that the well be covered by the new owners's blanket bond, has been approved by the Santa Fe office of the Division.

Upon approval of the bond and the Form C-103 or C-104, the transferor is released of plugging responsibility for the well, and upon request, the original bond will be released. No blanket bond will be released, however, until all wells covered by the bond have been plugged and abandoned or transferred in accordance with the provisions of this rule.

(e) All bonds shall be filed with the Santa Fe office of the Division, and approval of such bonds, as well as releases thereof, obtained from said office.

(f) All bonds required by these rules shall be conditioned for well plugging and location cleanup only, and not to secure payment for damages to livestock, range, water, crops, tangible improvements, nor any other purpose.

RULE 102. NOTICE OF INTENTION TO DRILL

(a) Prior to the commencement of operations, notice shall be delivered to the Division of intention to drill any well for oil or gas or for injection purposes and approval obtained on Form C-101.

(b) No permit shall be approved for the drilling of any well within the corporate limits of any city, town, or village of this state unless notice of intention to drill such well has been given to the duly constituted governing body of such city, town or village or its duly authorized agent. Evidence of such notification shall accompany the application for a permit to drill (Form C-101).

RULE 103. SIGN ON WELLS

All wells subject to these regulations, including drilling, production, and injection wells, shall be identified by a sign, posted on the derrick or not more than 20 feet from such well, and such sign shall be of durable construction and the lettering thereon shall be kept in legible condition and shall be large enough to be legible under normal conditions at a distance of 50 feet. The wells on each lease or property shall be numbered in non-repetitive, logical and distinctive sequence. Each sign shall show the number of the well, the name of the lease (which shall be different or distinctive for each lease), the name of the leasee, owner or operator, and the location by quarter section, township and range. The location, for each sign posted after March 1, 1968, shall indicate the quarter-quarter section, township, and range.

RULE 104. WELL SPACING: ACREAGE REQUIREMENTS FOR DRILLING TRACTS

A. CLASSIFICATION OF WELLS: WILDCAT WELLS AND DEVELOPMENT WELLS

Any well which is to be drilled a distance of one mile or more from (1) the outerboundary of any defined pool which has produced oil or gas from the formation to which the well is projected, and (2) any other well which has produced oil or gas from the formation to which the proposed well is projected, shall be classified as a wildcat well.

Any well which is not a wildcat well as defined above shall be classified as a development well for the nearest pool which has produced oil or gas from the formation to which the well is projected. Any such development well shall be spaced, drilled, operated, and produced in accordance with the rules and regulations in effect in such nearest pool, provided the well is completed in the formation to which it was projected.

Any well classified as a development well for a given pool but which is completed in a producing horizon not included in the vertical limits of said pool shall be operated and produced in accordance with the rules and regulations in effect in the nearest pool within one mile which is producing from that horizon. If there is no designated pool for said producing horizon within one mile, the well shall be re-classified as a wildcat well.

B. ACREAGE AND WELL LOCATION REQUIREMENTS FOR WILDCATS

I. Lea, Chaves, Eddy and Roosevelt Counties

(a) Wildcat Gas Wells

In Lea, Chaves, Eddy and Roosevelt Counties, a wildcat well which is projected as a gas well to a formation and in an area which, in the opinion of the engineer or supervisor approving the application to drill, may reasonably be presumed to be productive of gas rather than oil shall be located on a drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U.S. Public Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary.

Provided however, that any such wildcat gas well which is projected to the Wolfcamp or older formations shall be located on a drilling tract consisting of 320 surface contiguous acres, more or less, comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the U.S. Public Land Surveys. Any such "deep" wildcat gas well to which is dedicated more than 160 acres shall be located not closer than 660 feet to the nearest side boundary of the dedicated tract nor closer than 1980 feet to the nearest end boundary nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary. (For the purpose of this rule, "side" boundary is defined as one of the outer boundaries running lengthwise to the tract's greatest overall dimensions; "end" boundary is defined as one of the outer boundaries perpendicular to a side boundary and closing the tract across it least overall dimension.)

(b) Wildcat Oil Wells

In Lea, Chaves, Eddy, and Roosevelt Counties, a wildcat well which is not a wildcat gas well as defined above shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U.S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract.

In the event gas production is encountered in a well which was projected as an oil well and which is located accordingly but does not conform to the above gas well location rule, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of gas can be given.

II. San Juan, Rio Arriba, and Sandoval Counties

(a) Wildcat Gas Wells

In San Juan, Rio Arriba, and Sandoval Counties, a wildcat well which is projected to a gas-producing horizon shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U.S. Public Land Surveys, and shall be located not closer than 790 feet to any outer boundary of the tract nor closer than 130 feet to any quarter-quarter section or subdivision inner boundary.

In the event oil production is encountered in a well which was projected to a gas-producing horizon and which is located accordingly but does not conform to the oil well location rule below, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of oil can be given.

(b) Wildcat Oil Wells

A wildcat well which is projected to an oil-producing horizon as recognized by the Division shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of square which is a legal subdivision of the U.S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract.

In the event gas production is encountered in a well which was projected to an oil-producing horizon and which is located accordingly but does not conform to the above gas well location rules, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of gas can be given.

III. All counties except Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval

Any wildcat well in any county other than Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U.S. Public Land Surveys, or on a governmental quarter-quarter section or lot and shall be located not closer than 330 feet to any boundary of such tract.

C. ACREAGE AND WELL LOCATION REQUIREMENTS FOR DEVELOPMENT WELLS

I. Oil Wells, All Counties

Unless otherwise provided in special pool rules, each development well for a defined oil pool shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of square which is a legal subdivision of the U.S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract nor closer than 330 feet to the nearest well drilling to or capable of producing from the same pool, provided however, only tracts committed to active secondary recovery projects shall be permitted more than four wells.

II. Gas Wells

(a) Lea, Chaves, Eddy, and Roosevelt Counties

Unless otherwise provided in special pool rules, each development well for a defined gas pool in a formation younger than the Wolfcamp formation, or in the Wolfcamp formation which was created and defined by the Division prior to November 1, 1975, or in a Pennsylvanian age or older formation which was created and defined by the Division prior to June 1, 1964, shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section being a legal subdivision of the U.S. Public Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary nor closer than 1320 feet to the nearest well drilling to or capable of producing from the same pool.

Unless otherwise provided in the special pool rules, each development well for a defined gas pool in the Wolfcamp formation which was created and defined by the Division after November 1, 1975, or of Pennsylvanian age or older which was created and defined by the Division after June 1, 1964, shall be located on a designated drilling tract consisting of 320 surface contiguous acres, more or less, comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the U.S. Public Land Surveys. Any such well having more than 160 acres dedicated to it shall be located not closer than 660 feet to the nearest side boundary of the dedicated tract nor closer than 1980 feet to the nearest end boundary nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary. (For the purpose of this rule, "side" boundary and "end" boundary are as defined in Section B I(a) of this rule.)

(b) San Juan, Rio Arriba, and Sandoval Counties

Unless otherwise provided in special pool rules, each development well for a defined gas pool shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U.S. Public Land Surveys, and shall be located not closer than 790 feet to any outer boundary of the tract nor closer than 130 feet to any quarter-quarter section line or subdivision inner boundary.

(c) All Counties except Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval

Unless otherwise provided in special pool rules, each development well for a defined gas pool shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U.S. Public Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary nor closer than 1320 feet to the nearest well drilling to or capable of producing from the same pool.

D. ACREAGE ASSIGNMENT, COMPLETED WELLS

I. Well Tests and Classification

It shall be the responsibility of the operator of any wildcat gas well or development gas well to which more than 40 acres has been dedicated to conduct a potential test within 30 days following completion of the well and to file the same with the Division within 10 days following completion of the tests. (See Rule 401.)

Date of completion for a gas well shall be the date a Christmas tree is installed or 30 days following conclusion of active completion work on the well, whichever date comes first.

Upon making a determination that the well should not properly be classified as a gas well, the Division will reduce the acreage dedicated to the well.

Failure of the operator to file the aforesaid tests within the specified time will also subject the well to such acreage reduction.

II. Non-Standard Units

Any completed gas well which does not have the required amount of acreage dedicated to it for the pool or formation in which it is completed may not be produced until a standard unit for the well has been formed and dedicated or until a non-standard unit has been approved.

The Division Director may grant administrative approval to non-standard gas units without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the U.S. Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a single governmental quarter section if the well is completed in a pool or formation for which 160 acres is the standard unit size or wholly within a single governmental half section if the well is completed in a pool or formation for which 320 acres is the standard unit size.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the quarter section (for 160-acre pools or formations) or the half section (for 320-acre pools or formations) in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Director has received the application.

E. Form C-101, Application for Permit to Drill, Deepen, or Plug Back for any well shall designate the exact legal subdivision allotted to the well and no Form C-101 will be approved by the Division or any of its agents without such proper designation of acreage.

"F. The Division Director shall have authority to grant an exception to the well location requirements of Sections B and C above without notice and hearing when the necessity for such unorthodox location is based upon topographical conditions, the recompletion of a well previously drilled to another horizon, provided said well was drilled at an orthodox location for such original horizon, or to permit the completion of an efficient production and injection pattern within a secondary recovery or pressure maintenance project, provided that any such unorthodox location within such project is no closer than 330 feet to the outer boundary of the lease or the unitized area, nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

"Applications for administrative approval of unorthodox locations shall be filed in triplicate and shall be accompanied by plats, showing the ownership of all leases off-setting the proration or spacing unit for which the unorthodox location is sought, and also all wells completed thereon. If the proposed unorthodox location is based upon topography, the plat shall also show and describe the existent topographical conditions. If the proposed unorthodox location is based upon completion of an efficient production and injection pattern, the plat shall also show the project outline identifying all producing and injection wells therein, and the applicant shall further include a statement setting forth the necessity for such location.

"All operators of proration or spacing units offsetting the unit for which the unorthodox location is sought shall be notified of the application by certified or registered mail, and the application shall state that such notification has been given. The Division Director may approve the unorthodox location upon receipt of waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Director has received the application."

G. Whenever an exception is granted, the Division may take such action as will offset any advantage which the person securing the exception may obtain over other producers by reason of the unorthodox location.

H. If the drilling tract is within an allocated oil pool or is placed within such allocated pool at any time after completion of the well and the drilling tract consists of less than $39\frac{1}{2}$ acres or more than $40\frac{1}{2}$ acres, the top unit allowable for such well shall be increased or decreased in the proportion that the number of acres in the drilling tract bears to 40.

I. If the drilling tract is within an allocated gas pool or is subsequently placed within an allocated gas pool, and the drilling tract consists of less than 158 acres or more than 162 acres in 160-acre pools, or less than 316 acres or more than 324 acres in 320-acre pools, the top allowable for such well shall be decreased or increased in the proportion that the number of acres in the drilling tract bears to a standard unit for the pool.

J. In computing acreage under H and I above, minor fractions of an acre shall not be counted but $\frac{1}{2}$ acres or more shall count as 1 acre.

K. The provisions of H and I above shall apply only to wells completed after January 1, 1950. Nothing herein contained shall affect in any manner any well completed prior to the effective date of this rule and no adjustments shall be made in the allowable production for any such wells by reason of these rules.

L. In order to prevent waste the Division may, after notice and hearing, fix different spacing requirements and require greater acreage for drilling tracts in any defined oil pool or in any defined gas pool notwithstanding the provisions of B and C above.

M. The Division may approve the pooling or communitization of fractional lots of 20.49 acres or less with another oil proration unit when:

1. The units involved are contiguous;
2. They are part of the same basic lease, carrying the same royalty interest; and
3. The ownership of the units involved is common.

Application to the Division for pooling shall be accompanied by three (3) copies of a certified plat showing the dimensions and acreage involved in the pooling, the ownership of all leases and royalty interests involved, and the location of any proposed wells.

Applicant shall furnish all operators who directly and diagonally offset the units involved a copy of the application to the Division and shall include with his application a written statement that all offset operators have been properly notified. Offset operators shall include only those operators who have offset properties within the State of New Mexico. The Division shall wait at least ten days before approving any such pooling, and shall approve such pooling only in the absence of objection from any offset operator. In the event that an operator objects to the pooling, the Division shall consider the matter only after proper notice and hearing.

The Division may waive the ten-day waiting period requirement if the applicant furnishes the Division with the written consent to the pooling by all offset operators involved.

The Division may consider that the requirements of subparagraphs 2 and 3 of paragraph M of this rule have been fulfilled if the applicant furnishes with each copy of each application to the Division a copy of executed pooling agreement communitizing the units involved.

Each well drilled on any communitized tract shall be located in the approximate geographical center of the combined units with a tolerance of 150 feet for topographical conditions, but in any event shall not be located closer than 330 feet to the outer boundaries of the proposed proration unit or communitized tract.

RULE 105. PIT FOR CLAY, SHALE, AND DRILL CUTTING

In order to assure a supply of proper material for mud-laden fluid to confine oil, gas, or water to their native strata during the drilling of any well, operators shall provide before drilling is commenced on adequate pit for the accumulation of drill cuttings.

RULE 106. SEALING OFF STRATA

(a) During the drilling of any oil well, injection well or any other service well, all oil, gas, and water strata above the producing and/or injection horizon shall be sealed or separated in order to prevent their contents from passing into other strata.

(b) All fresh waters and waters of present or probable value for domestic, commercial, or stock purposes shall be confined to their respective strata and shall be adequately protected by methods approved by the Division. Special precautions by methods satisfactory to the Division shall be taken in drilling and abandoning wells to guard against any loss of artesian water from the strata in which it occurs, and the contamination of artesian water by objectionable water, oil, or gas.

(c) All water shall be shut off and excluded from the various oil and gas bearing strata which are penetrated. Water shut-offs shall ordinarily be made by cementing casing.

RULE 107. CASING AND TUBING REQUIREMENTS

(a) Any well drilled for oil or natural gas shall be equipped with such surface and intermediate casing strings and cement as may be necessary to effectively seal off and isolate all water-, oil-, and gas-bearing strata and other strata encountered in the well down to the casing point. In addition thereto, any well completed for the production of oil or natural gas shall be equipped with a string of properly cemented production casing at sufficient depth to ensure protection of all oil- and gas-bearing strata encountered in the well, including the one(s) to be produced.

Sufficient cement shall be used on surface casing to fill the annular space behind the casing to the top of the hole, provided however, that authorized field personnel of the Division may, at their discretion, allow exceptions to the foregoing requirement when known conditions in a given area render compliance impracticable.

All cementing shall be by pump and plug method unless some other method is expressly authorized by the Division.

All cementing shall be with conventional-type hard-setting cements to which such additives (lighteners, densifiers, extenders, accelerators, retarders, etc.) have been added to suit conditions in the well.

Authorized field personnel of the Division may, when conditions warrant, allow exceptions to the above paragraph and permit the use of oil-base casing packing material in lieu of hard-setting cements on intermediate and production casing strings; provided however, that when such materials are used on the intermediate casing string, conventional-type hard-setting cements shall be placed throughout all oil- and gas-bearing zones and throughout at least the lowermost 300 feet of the intermediate casing string. When such materials are used on the production casing string, conventional-type hard-setting cements shall be placed throughout all oil- and gas-bearing zones and shall extend upward a minimum of 500 feet above the uppermost perforation or, in the case of an open-hole completion, 500 feet above the production casing shoe.

All casing strings shall be tested and proved satisfactory as provided in paragraph (c) below.

(b) After cementing, but before commencing tests required in paragraph (c) below, all casing strings shall stand cemented in accordance with Option 1 or 2 below. Regardless of which option is taken, the casing shall remain stationary and under pressure for at least eight hours after the cement has been placed. Casing shall be "underpressure" if some acceptable means of holding pressure is used or if one or more float valves are employed to hold the cement in place.

OPTION 1

Allow all casing strings to stand cemented a minimum of eighteen (18) hours prior to commencing tests. Operators using this option shall report on Form C-103 the actual time the cement was in place before initiating tests.

OPTION 2

(May be used in the counties of San Juan, Rio Arriba, McKinley, Sandoval, Lea, Eddy, Chaves, and Roosevelt only.) Allow all casing strings to stand cemented until the cement has reached a compressive strength of at least 500 pounds per square inch in the "zone of interest" before commencing tests, provided however, that no tests shall be commenced until the cement has been in place for at least eight (8) hours.

The "zone of interest" for surface and intermediate casing strings shall be the bottom 20 percent of the casing string, but shall be no more than 1000 feet nor less than 300 feet of the bottom part of the casing unless the casing is set at less than 300 feet. The "zone of interest" for production casing strings shall include the interval or intervals where immediate completion is contemplated.

To determine that a minimum compressive strength of 500 pounds per square inch has been attained, operators shall use the typical performance data for the particular cement mix used in the well, at the minimum temperature indicated for the zone of interest by Figure 107-A, Temperature Gradient Curves. Typical performance data used shall be that data furnished by the cement manufacturer or by a competent materials testing agency, as determined in accordance with the latest edition of API Code RP 10 B "Recommended Practice for Testing Oil-Well Cements."

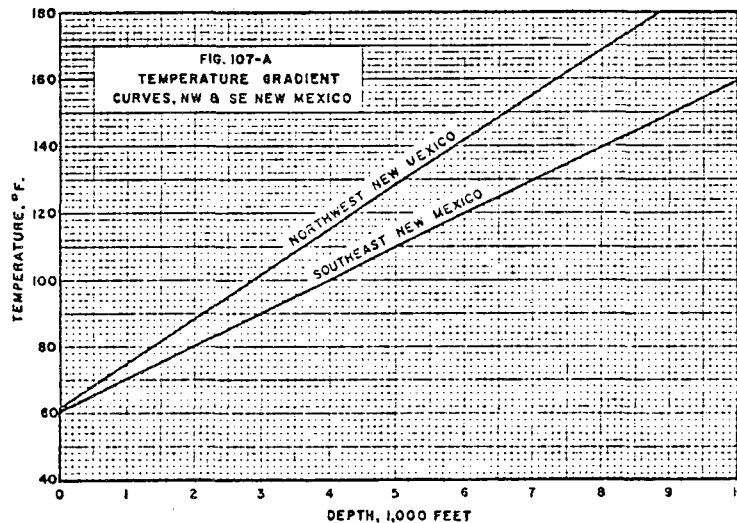


Figure 107-A

Operators using the compressive strength criterion (Option 2) shall report the following information on Form C-103:

- (1) Volume of cement slurry (cu. ft.) and brand name of cement and additives, percent additives used, and sequence of placement if more than one type cement slurry is used.
- (2) Approximate temperature of cement slurry when mixed.
- (3) Estimated minimum formation temperature in zone of interest.
- (4) Estimate of cement strength at time of casing test.
- (5) Actual time cement in place prior to starting test.

(c) All casing strings except conductor pipe shall be tested after cementing and before commencing any other operations on the well. Form C-103 shall be filed for each casing string reporting the grade and weight of pipe used. In the case of combination strings utilizing pipe of varied grades or weights, the footage of each grade and weight used shall be reported. The results of the casing test, including actual pressure held on pipe and the pressure drop observed shall also be reported on the same Form C-103.

(1) Casing strings in wells drilled with rotary tools shall be pressure tested. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure except that the test pressure shall not be less than 600 pounds per square inch and need not be greater than 1500 pounds per square inch. In cases where combination strings are involved, the above test pressures shall apply to the lowest pressure rated casing used. Test pressures shall be applied for a period of 30 minutes. If a drop of more than 10 percent of the test pressure should occur, the casing shall be considered defective and corrective measures shall be applied.

(2) Casing strings in wells drilled with cable tools may be tested as outlined in sub-paragraph (c) (1) above, or by bailing the well dry in which case the hole must remain satisfactorily dry for a period of at least one (1) hour before commencing any further operations on the well.

(d) Requirements for tubing of wells are as follows:

- (1) All flowing oil wells equipped with casing larger in size than 2 7/8-inch OD shall be tubed.
- (2) All gas wells equipped with casing larger in size than 2 7/8-inch OD shall be tubed.
- (3) Tubing shall be set as near the bottom as practical and tubing Perforations shall not be more than 250 feet above the top of the pay.
- (4) The Division Director may, upon proper application, grant administrative exceptions to the provisions of sub-paragraphs (2) and (3) above, without notice and hearing, provided waste will not be caused thereby.

(e) The Division's District Supervisors or their representatives shall have authority to approve tubingless completions without the necessity of administrative approval or notice and hearing when the following conditions exist:

- (1) The well is to be completed with a total depth of 5,000 feet or less,
- (2) The well is not a wildcat (it is not more than one mile from an existing well producing from the same common source of supply to which it is projected).
- (3) No known corrosive or pressure problems exist which might make the tubingless method of completion undesirable,
- (4) The well will not be a dual completion,
- (5) The tubing used as a substitute for casing will be either 2 3/8-inch OD or 2 7/8-inch OD.

RULE 108. DEFECTIVE CASING OR CEMENTING

In any well that appears to have a defective casing program or faultily cemented or corroded casing which will permit or may create underground waste, the operator shall proceed with diligence to use the appropriate method and means to eliminate such hazard of underground waste. If such hazard of waste cannot be eliminated, the well shall be properly plugged and abandoned.

RULE 109. BLOWOUT PREVENTION (See Rule 114 (b) also)

(a) Blowout preventers shall be installed and maintained in good working order on all drilling rigs operating in areas of known high pressures at or above the projected depth of the well and in all areas where pressures which will be encountered are unknown, and on all workover rigs working on wells in which high pressures are known to exist.

(b) Blowout preventers shall be installed and maintained in good working order on all drilling rigs and workover rigs operating within the corporate limits of any city, town, or village, or within 1320 feet of a habitation, school, or church, wherever located.

(c) All operators, when filing Form C-101, Application for Permit to Drill, Deepen, or Plug Back, or Form C-103, Sundry Notices, for any operation requiring blowout prevention equipment in accordance with Sections (a) and (b) above, shall submit a proposed blowout prevention program for the well. The program is submitted may be modified by the District Supervisor if, in his judgment, such modification is necessary.

RULE 110. PULLING OUTSIDE STRINGS OF CASING

In pulling outside strings of casing from any oil or gas well, the space outside the casing left in the hole shall be kept and left full of mud-laden fluid or cement of adequate specific gravity to seal off all fresh and salt water strata and any strata bearing oil or gas not producing.

RULE 111. DEVIATION TESTS AND DIRECTIONAL DRILLING

(a) Any well which is drilled or deepened with rotary tools shall be tested at reasonably frequent intervals to determine the deviation from the vertical. Such tests shall be made at least once each 500 feet or at the first bit change succeeding 500 feet. A tabulation of all deviation tests run, sworn to and notarized, shall be filed with Form C-104, Request for Allowable and Authorization to Transport Oil and Natural Gas. When the deviation averages more than five degrees in any 500-foot interval, the Division Director may require that a directional survey be run to establish the location of the producing interval(s).

The Division Director, at the request of an offset operator, may require any operator to make a directional survey of any well. Said directional survey and all associated costs shall be at the expense of the requesting party and shall be secured in advance by a \$5,000.00 indemnity bond posted with and approved by the Division. The requesting party may designate the well survey company, and said survey shall be witnessed by the Division.

(b) No well shall be intentionally deviated without special permission from the Division. Permission to deviate toward the vertical to straighten a crooked hole, to deviate toward the vertical or in an indeterminate direction to sidetrack junk in the hole, or to drill a relief well to control a blow-out shall be obtained from the appropriate District Office of the Division on Division Form C-103 with copies of said Form C-103 being furnished to all offset operators. Permission to deviate a well in any other manner or for any other reason will be granted only after notice and hearing. Upon request from the Division Director, any well which was deviated in an indeterminate direction or toward the vertical shall be directionally surveyed. In addition, a directional survey of the entire well bore must be made on any well which was deviated in a predetermined direction, except toward the vertical. The District Office of the Division shall be notified of the approximate time all directional surveys are to be conducted. All directional surveys run on any well which was intentionally deviated in any manner for any reason must be filed with the Division upon completion of the well. The Division will not assign an allowable to a well until the operator has submitted an affidavit that all such directional surveys have been filed.

RULE 112-A. MULTIPLE COMPLETIONS

I. The multiple completion of any well may be permitted only by order of the Division after notice and hearing, except as hereinafter provided. Multiple completion of any well without prior approval by the Division shall be solely at the operator's risk and shall be no way commit the Division to subsequent approval thereof.

II. MULTIPLE COMPLETIONS (CONVENTIONAL)

The Division Director shall have the authority to grant an exception to the requirements of Rule 112-A (I) and approve the dual or triple completion of a well to produce from more than one common source of supply without notice and hearing when application for such approval has been filed on Form C-107; and

(a) The Division has previously authorized the similar multiple completion of a well in the same common sources of supply as proposed, after notice and hearing; provided however, that in Rio Arriba, San Juan, Sandoval, and McKinley Counties, a proposed multiple completion may be approved if the Division has previously authorized the similar multiple completion of a well in the same formations as proposed, after notice and hearing; and

(b) The applicant proposes to utilize one of the mechanical installations described below:

(1) The well is to be completed as a gas-gas dual or as a gas-gas-gas triple and the hydrocarbons from each of the zones can be safely and efficiently produced through parallel strings of tubing or a combination of tubing string(s) and the tubing-casing annulus.

(2) The well is to be completed as an oil-oil dual or as an Oil-oil-oil triple and the hydrocarbons from each of the zones can be safely and efficiently produced through parallel strings of tubing.

(3) The well is to be completed as a combination oil and gas multiple completion and the hydrocarbons from each oil zone can be safely and efficiently produced through parallel strings of tubing and the hydrocarbons from each gas zone can be safely and efficiently produced through parallel string(s) of tubing or through a combination of tubing and the tubing-casing annulus; and

(c) All strings of tubing used for the production of oil in the proposed multiple completion will have a nominal inside diameter of not less than 1.670 inches nor greater than 2.50 inches; and

(d) The packer(s) used to segregate the separate zones of the multiple completion will be production-type packer(s) and shall effectively prevent communication between all producing zones.

III. MULTIPLE COMPLETIONS (TUBINGLESS AND COMBINATION)

The Division Director shall have the authority to grant an exception to the requirements of Rule 112-A (I) and approve the multiple completion of a well without notice and hearing where application has been filed on Form C-107; and

(a) The Division has previously authorized the similar multiple completion of a well in the same common sources or supply as proposed, after notice and hearing; provided however, that in Rio Arriba, San Juan, Sandoval, and McKinley Counties, a proposed multiple completion may be approved if the Division has previously authorized the similar multiple completion of a well in the same formations after notice and hearing; and

(b) The applicant proposes to employ one of the following methods of completion:

- (1) Multiple Completion (Tubingless) utilizing two or more small diameter casing strings (2.875 inches OD or less), one to each common source of supply, all cemented in a common well-bore.
- (2) Multiple Completion (Combination) utilizing a combination of small diameter (2.875 inches OD or less) and conventional diameter (greater than 2.875 inches) casing strings, all cemented in a common well-bore. Provided however, that if any conventional diameter casing in said multiple completion is used for the production of more than one common source of supply, the rules pertaining to Multiple Completions (Conventional) in Rule 112-A (II) above shall also apply; and

(c) Sufficient cement will be used in said multiple completion to extend throughout each pay and a minimum of 100 feet above; and

(d) Centralizers and/or turbolizers will be installed on each joint of casing throughout each pay and on a minimum of three joints above; and

(e) Directional perforating equipment will be used in perforating all intervals in any casing string in said multiple completion which intervals are in a zone through which one or more other casing strings pass.

(f) The requirements of paragraphs (c) and (d) may be modified for multiple completions within given common sources of supply and within a given area if, in the opinion of the Division Director, circumstances warrant such modification.

IV. ADMINISTRATIVE PROCEDURE

Application for administrative approval of a multiple completion shall be made in QUADRUPLICATE, with two copies of the application to be mailed to the Division's Santa Fe Office, and two copies to the District Office for the area in which the well is located. Application shall be made on the Division Form C-107, Application for Multiple Completion, and shall be accompanied by the following:

- (a) Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location of packers, side door chokes, and such other information as may be pertinent.
- (b) Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
- (c) Waivers consenting to such multiple completion from each offset operator, or in lieu thereof evidence that said offset operators have been furnished copies of the application.
- (d) Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as hereinafter provided.)

The Division Director may approve the multiple completion if, after a period of 20 days following the filing of the application, no operator has filed objection to the proposed multiple completion.

V. Application for public hearing to authorize a multiple completion shall be made in TRIPLICATE to the Division's Santa Fe Office. Application shall be made on the Division Form C-107, Application for Multiple Completion, and shall set forth all material facts relative to the common sources of supply involved and the manner and method of completion proposed. Application shall be accompanied by an exhibit showing the location of all wells on applicant's lease and all offset wells on offset leases.

VI. All multiple completions, whether approved after hearing or by administrative procedure, shall be subject to the following rules:

- (a) Prior to actual multiple completion of a well, operator shall make adequate pressure tests of the casing to determine that no casing leaks exist. Results of casing tests shall be reported to the Division on Form C-103.
- (b) The well shall be completed and thereafter produced in such a manner that there will be no comingling of hydrocarbons from the separate strata.
- (c) The operator shall commence a segregation test and/or packer-leakage test not later than

seven (7) days after actual multiple completion of the well. Segregation tests and/or packer-leakage tests shall also be made any time the packer is disturbed and at such other intervals as the Division may prescribe. The Operator shall also make all other tests and determinations deemed necessary by the Division. The Division shall be notified of the time such tests are to be commenced and tests may be witnessed by the Division at its election. Representatives of offset operators may witness such tests at their election and shall advise the producer in writing if they desire to be notified when such tests are to be conducted. Results of such tests shall be filed with the Division within fifteen (15) days after the completion of tests; provided, however, that in the event a segregation test or packer-leakage test indicates that there is communication between the separate strata, the operator shall immediately notify the Division and commence remedial action on the well.

- (d) A packer setting report shall accompany the report of the initial segregation test and packer-leakage test, if applicable.
- (e) The well shall be so equipped that reservoir pressures may be determined for each of the separate strata and further be so equipped that meters may be installed and the gas, oil and gas, and oil produced from each of the separate strata may be accurately measured, and the gas-oil ratio or the gas-liquid ratio thereof determined.
- (f) Within 15 days after the completion of the well, the operator shall furnish the Division with a diagrammatic sketch of the mechanical installation which was actually used in completing the well together with a report of the gravity, gas-oil ratio or gas-liquid ratio, and reservoir pressure for each of the separate zones, and the log of the well if the same has not been previously submitted.

RULE 112-B. BRADENHEAD GAS WELLS

(a) The production of gas from a bradenhead gas well may be permitted only by order of the Division upon hearing, except as noted by the provisions of paragraph (c) of this rule.

(b) The application for such hearings shall be submitted in triplicate and shall include an exhibit showing the location of all wells on applicant's lease and all offset wells on offset leases, together with a diagrammatic sketch showing the casing program, formation tops, estimated top of cement on each casing string run and any other pertinent data, including drill stem tests.

(c) The Division Director shall have authority to grant an exception to the requirements of paragraph (a) above without notice and hearing where application has been filed in due form, and when the lowermost producing zone involved in the completion is an oil or gas producing zone within the defined limits of an oil or gas pool and the producing zone to be produced through the bradenhead connection is a gas producing zone within the defined limits of a gas pool.

Applicants shall furnish all operators who offset the lease upon which the subject well is located a copy of the application to the Division, and applicant shall include with his application a written stipulation that all offset operators have been properly notified. The Division Director shall wait at least 10 days before approving the production of gas from the bradenhead gas well, and shall approve such production only in the absence of objection from any offset operator. In the event an operator objects to the completion the Division Director shall consider the matter only after proper notice and hearing.

The Division may waive the 10-day waiting period requirement if the applicant furnishes the Division with the written consent to the production of gas from the bradenhead connection by all offset operators involved.

This rule shall apply only to wells hereinafter completed as bradenhead gas wells.

RULE 113. SHOOTING AND CHEMICAL TREATMENT OF WELLS

If injury results to the producing formation, casing or casing seat from shooting or treating a well, the operator shall proceed with diligence to use the appropriate method and means for rectifying such damage. If shooting or chemical treating results in irreparable injury to the well the Division may require the operator to properly plug and abandon the well.

RULE 114. SAFETY REGULATIONS

(a) All oil wells shall be cleaned into a pit or tank, not less than 40 feet from the derrick floor and 150 feet from any fire hazard. All flowing oil wells must be produced through an oil and gas separator of ample capacity and in good working order. No boiler or portable electric lighting generator shall be placed or remain nearer than 150 feet to any producing well or oil tank. Any rubbish or debris that might constitute a fire hazard shall be removed to a distance of at least 150 feet from the vicinity of wells and tanks. All waste shall be burned or disposed of in such manner as to avoid creating a fire hazard.

(b) When coming out of the hole with drill pipe, drilling fluid shall be circulated until equalized and subsequently drilling fluid level shall be maintained at a height sufficient to control subsurface pressures. During course of drilling blowout preventors shall be tested at least once each 24-hour period.

RULE 115. WELL AND LEASE EQUIPMENT

Christmas tree fittings or wellhead connections shall be installed and maintained in first class condition so that all necessary pressure tests may easily be made on flowing wells. On oil wells the Christmas tree fittings shall have a test pressure rating at least equivalent to the calculated or known pressure in the reservoir from which production is expected. On gas wells the Christmas tree fittings shall have a test pressure equivalent to at least 150 per cent of the calculated or known pressure in the reservoir from which production is expected.

Valves shall be installed and maintained in good working order to permit pressures to be obtained on both casing and tubing. Each flowing well shall be equipped to control properly the flowing of each well, and in case of an oil well, shall be produced into an oil and gas separator of a type generally used in the industry.

RULE 116. NOTIFICATION OF FIRE, BREAKS, LEAKS, SPILLS, AND BLOWOUTS

The Division shall be notified of any fire, break, leak, spill, or blowout occurring at any injection or disposal facility or at any oil or gas drilling, producing, transporting, or processing facility in the State of New Mexico by the person operating or controlling such facility.

"Facility," for the purpose of this rule, shall include any oil or gas well, any injection or disposal well, and any drilling or workover well; any pipe line through which crude oil, condensate, casinghead or natural gas, or injection or disposal fluid (gaseous or liquid) is gathered, piped, or transported (including field flow-lines and lead-lines but not including natural gas distribution systems); any receiving tank, holding tank, or storage tank, or receiving and storing receptacle into which crude oil, condensate, injection or disposal fluid, or casinghead or natural gas is produced, received, or stored; any injection or disposal pumping or compression station including related equipment; any processing or refining plant in which crude oil, condensate, or casinghead or natural gas is processed or refined; and any tank or drilling pit or slush pit associated with oil or gas well or injection or disposal well drilling operations or any tank, storage pit, or pond associated with oil or gas production or processing operations or with injection or disposal operations and containing hydrocarbons or hydrocarbon waste or residue, salt water, strong caustics or strong acids, or other deleterious chemicals or harmful contaminants.

Notification of such fire, break, leak, spill, or blowout shall be in accordance with the provisions set forth below:

1. Well Blowouts. Notification of well blowouts and/or fires shall be "immediate notification" described below. ("Well blowout" is defined as being loss of control over and subsequent eruption of any drilling or workover well, or the rupture of the casing, casinghead, or wellhead of any oil or gas well or injection or disposal well, whether active or inactive, accompanied by the sudden emission of fluids, gaseous or liquid, from the well.)

2. "Major" Breaks, Spills, or Leaks. Notification of breaks, spills, or leaks of 25 or more barrels of crude oil or condensate, or 100 barrels or more of salt water, none of which reaches a watercourse or enters a stream or lake; breaks, spills, or leaks in which one or more barrels of crude oil or condensate or 25 barrels or more of salt water does reach a watercourse or enters a stream or lake; and breaks, spills, or leaks of hydrocarbons or hydrocarbon waste or residue, salt water, strong caustics or strong acids, gases, or other deleterious chemicals or harmful contaminants of any magnitude which may with reasonable probability endanger human health or result in substantial damage to property, shall be "immediate notification" described below.

3. "Minor" Breaks, Spills, or Leaks. Notification of breaks, spills, or leaks of 5 barrels or more but less than 25 barrels of crude oil or condensate, or 25 barrels or more but less than 100 barrels of salt water, none of which reaches a watercourse or enters a stream or lake, shall be "subsequent notification" described below.

4. Gas Leaks and Gas Line Breaks. Notification of gas leaks from any source or of gas pipe line breaks in which natural or casinghead gas of any quantity has escaped or is escaping which may with reasonable probability endanger human health or result in substantial damage to property shall be "immediate notification" described below. Notification of gas pipe line breaks or leaks in which the loss is estimated to be 1000 or more MCF of natural or casinghead gas but in which there is no danger to human health nor of substantial damage to property shall be "subsequent notification" described below.

5. Tank Fires. Notification of fires in tanks or other receptacles caused by lightning or any other cause, if the loss is, or it appears that the loss will be, 25 or more barrels of crude oil or condensate, or fires which may with reasonable probability endanger human health or result in substantial damage to property, shall be "immediate notification" as described below. If the loss is, or it appears that the loss will be at least 5 barrels but less than 25 barrels, notification shall be "subsequent notification" described below.

6. Drilling Pits, Slush Pits, and Storage Pits and Ponds. Notification of breaks and spills from

any drilling pit, slush pit, or storage pit or pond in which any hydrocarbon or hydrocarbon waste or residue, strong caustic or strong acid, or other deleterious chemical or harmful contaminant endangers human health or does substantial surface damage, or reaches a watercourse or enters a stream or lake in such quantity as may with reasonable probability endanger human health or result in substantial damage to such watercourse, stream, or lake, or the contents thereof, shall be "immediate notification" as described below. Notification of breaks or spills of such magnitude as to not endanger human health, cause substantial surface damage, or result in substantial damage to any watercourse, stream, or lake, or the contents thereof, shall be "subsequent notification" described below, provided however, no notification shall be required where there is no threat of any damage resulting from the break or spill.

IMMEDIATE NOTIFICATION. "Immediate Notification" shall be as soon as possible after discovery and shall be either in person or by telephone to the district office of the Division district in which the incident occurs, or if the incident occurs after normal business hours, to the District Supervisor, the Oil and Gas Inspector, or the Deputy Oil and Gas Inspector. A complete written report ("Subsequent Notification") of the incident shall also be submitted in duplicate to the appropriate district office of the Division within ten days after discovery of the incident.

SUBSEQUENT NOTIFICATION. "Subsequent Notification" shall be a complete written report of the incident and shall be submitted in duplicate to the district office of the Division district in which the incident occurred within ten days after discovery of the incident.

CONTENT OF NOTIFICATION. All reports of fires, breaks, leaks, spills, or blowouts, whether verbal or written, shall identify the location of the incident by quarter-quarter, section, township, and range, and by distance and direction from the nearest town or prominent landmark so that the exact site of the incident can be readily located on the ground. The report shall specify the nature and quantity of the loss and also the general conditions prevailing in the area, including precipitation, temperature, and soil conditions. The report shall also detail the measures that have been taken and are being taken to remedy the situation reported.

WATERCOURSE, for the purpose of this rule, is defined as any lake-bed or gully, draw, stream bed, wash, arroyo, or natural or man-made channel through which water flows or has flowed.

RULE 117. WELL LOG, COMPLETION AND WORKOVER REPORTS

Within 20 days after the completion of a well drilled for oil or gas, or the recompletion of a well into a different common source of supply, a completion report shall be filed with the Division on Form C-105. For the purpose of this rule, any hole drilled or cored below fresh water or which penetrates oil or gas-bearing formations or which is drilled by an "owner" as defined herein shall be presumed to be a well drilled for oil or gas.

D - ABANDONMENT AND PLUGGING OF WELLS

RULE 201. NOTICE

Notice of intention to plug must be filed with the Division by the owner or his agent prior to the commencement of plugging operations on Form C-103, Sundry Notices and Reports on Wells, which notice shall state the name and location of the well and the name of the operator. In the case of a newly completed dry hole, the operator may commence plugging by securing the approval of the Division as to the method of plugging and the time plugging operations are to begin. He shall, however, file the regular notification form.

RULE 202. PLUGGING AND ABANDONMENT

A. PLUGGING

Before any well is abandoned, it shall be plugged in a manner which will permanently confine all oil, gas, and water in the separate strata originally containing them. This operation shall be accomplished by the use of mud-laden fluid, cement and plugs, used singly or in combination as may be approved by the Division. The exact location of abandoned wells shall be shown by a steel marker at least four inches in diameter set in concrete, and extending at least four feet above mean ground level. The name and number of the well and its location (unit letter, section, township, and range) shall be welded, stamped, or otherwise permanently engraved into the metal of the marker. Seismic, core or other exploratory holes drilled to or below sands containing fresh water shall be plugged and abandoned in accordance with the applicable provisions recited above. Permanent markers are not required on seismic holes.

Within thirty days following the completion of plugging operations on any well, a record of the work done shall be filed with the Division in TRIPLICATE, on Form C-103. Such report shall be filed by the owner of the well and shall include the date the plugging operations were begun along with the date the work was completed; a detailed account of the manner in which the work was performed; the depths and lengths of the various plugs set; the nature and quantities of materials employed in plugging operations; the amount, size and depth of all casing left in the hole and the weight of mud employed in plugging the well and any other pertinent information. No plugging report submitted on Form C-103 shall be approved by the Division unless such report specifically states that pits have been filled and the location levelled and cleared of junk. The filing of Form C-105, Well Completion or Recompletion Report and Log is also necessary to obtain Division approval of a plugging report.

It shall be the responsibility of the owner of the plugged well to contact the appropriate District Office of the Division to arrange for an inspection of the plugged well and the location by a Division representative.

B. TEMPORARY ABANDONMENT

No well in this state shall be temporarily abandoned for a period in excess of six months unless a permit for such temporary abandonment has been approved by the Division. Such permit shall be for a period not to exceed one year and shall be requested from the appropriate District Office of the Division by filing Form C-103 in triplicate. No such permit shall be approved unless evidence is furnished that the condition of the well is such as to prevent damage to the producing zone, migration of hydrocarbons or water, the contamination of fresh water or other natural resources, or the leakage of any substance at the surface.

The District Supervisor of the appropriate District Office of the Division shall have authority to grant one extension to the permit for temporary abandonment. Such extension shall not exceed one year and shall be requested in the same manner as the original permit for temporary abandonment. No extension shall be approved unless good cause therefor is shown, and evidence is furnished that the continued condition of the well is as described above.

Upon expiration of the permit for temporary abandonment and any extension thereto, the well shall be put to beneficial use or shall be permanently plugged and abandoned, unless it can be shown to the Division after notice and hearing that good cause exists why the well should not be plugged and abandoned, and a further extension to the temporary abandonment permit should be issued. Prior to issuing such "further extension," the Division may at its option require the operator of the well to post with the Division a one-well plugging bond for the well, in an amount determined by the Division to be satisfactory to meet the particular requirements of the well.

The Division Director shall have the authority to waive the above requirement for notice and hearing and grant further extension to a permit for temporary abandonment in the case of:

- (1) a remote and unconnected commercial gas well or a presently non-commercial gas well which may reasonably be expected to be commercial within the foreseeable future; or
- (2) a well in an oil pool in which secondary recovery operations have, by actual performance, been shown to be commercially feasible, and which well may, with reasonable certainty, be expected to be included in a bona fide secondary recovery project within the foreseeable future.

Prior to issuing such further extension, the Division Director may at his option require the operator of the well to post with the Division a one-well plugging bond for the well, in an amount determined by the Director to be satisfactory to meet the particular requirements of the well.

No "further extension," whether issued by the Division or by the Division Director, shall be of more than two years duration, but may be renewed if circumstances warrant.

C. DRILLING WELLS

When drilling operations on a well have been suspended for 60 days, the well shall be plugged and abandoned unless a permit for temporary abandonment has been obtained for the well in accordance with Section B above.

RULE 203. WELLS TO BE USED FOR FRESH WATER

When the well to be plugged may safely be used as a fresh water well and such utilization is desired by the landowner, the well need not be filled above sealing plug set below the fresh water formation, provided that written agreement for such use shall be secured from the landowner and filed with the Division.

RULE 204. LIABILITY

The owner of any well drilled for oil or gas or for injection, or any seismic, core or other exploratory hole, whether cased or uncased, shall be responsible for the plugging thereof.

E - OIL PRODUCTION OPERATING PRACTICES

RULE 301. GAS-OIL RATIO AND PRODUCTION TESTS

(a) Each operator shall take a gas-oil ratio test no sooner than 20 days nor later than 30 days following the completion or recompletion of each oil well, if (1) the well is a wildcat, or (2) the well is located in a pool which is not exempt from the requirements of this rule. (Wells completed within one mile of the outer boundary of a defined oil pool producing from the same formation shall be governed by the provisions of this rule which are applicable to the pool.) The results of the test shall be reported to the Division on Form C-116 within 10 days following completion of the test. The gas-oil ratio thus reported shall become effective for proration purposes on the first day of the calendar month following the date they are reported.

Each operator shall also take an annual gas-oil ratio test of each producing oil well, located within a pool not exempted from the requirements of this rule, during a period prescribed by the Division. A gas-oil ratio survey schedule shall be established by the Division setting forth the period in which gas-oil ratio test applicable shall be such test designated by the Division, made by such method and means, and in such manner as the Division in its discretion may prescribe from time to time.

(b) The results of gas-oil ratio tests taken during survey periods shall be filed with the Division on Form C-116 not later than the 10th of the month following the close of the survey period for the pool in which the well is located. The gas-oil ratios thus reported shall become effective for proration purposes on the first day of the second month following the close of the survey period. Unless Form C-116 is filed within the required time limit, no further allowable will be assigned the affected well until Form C-116 is filed.

(c) In the case of special tests taken between regular gas-oil ratio surveys, the gas-oil ratio shall become effective for proration purposes upon the date Form C-116, reporting the results of such test, is received by the proration department. A special test does not exempt any well from the regular survey.

(d) During gas-oil ratio test, no well shall be produced at a rate exceeding top unit allowable for the pool in which it is located by more than 25 per cent. No well shall be assigned an allowable greater than the amount of oil produced on official tests during a 24-hour period.

(e) The Division Director shall have the authority to exempt such pools as he may deem proper from the gas-oil ratio test requirements of this rule. Such exemption shall be by executive order directed to all operators in the pool being exempted.

(f) The Division Director shall have the authority to require annual productivity tests of all oil wells in pools exempt from gas-oil ratio tests, during a period prescribed by the Division. An oil well productivity survey schedule shall be established by the Division setting forth the period in which productivity tests are to be taken for each pool wherein such tests are required.

(g) The results of productivity tests taken during survey periods shall be filed with the Division on Form C-116 (with the word "Exempt" inserted in the column normally used for reporting gas production) not later than the 10th of the month following the close of the survey period for the pool in which the well is located. Unless Form C-116 is filed within the required time limit, no further allowable will be assigned the affected well until Form C-116 is filed.

(h) In the case of special productivity tests taken between regular test survey periods, which result in a change of allowable assigned to the well, the allowable change shall become effective upon the date the Form C-116 is received by the proration department. A special test does not exempt any well from the regular survey.

(i) During the productivity test, no well shall be produced at a rate exceeding top unit allowable for the pool in which it is located by more than 25 per cent. No well shall be assigned an allowable greater than the amount of oil produced on test during a 24-hour period.

RULE 302. SUBSURFACE PRESSURE TESTS

The operator shall make a subsurface pressure test on the discovery well of any new pool hereafter discovered, and shall report the results thereof to the Division within 30 days after the completion of such discovery well. On or before December 1 of each calendar year the Division shall designate the months in which subsurface pressure tests shall be taken in designated pools. Included in the designated list shall be listed the required shut-in pressure time and datum of tests to be taken in each pool. In the event a newly discovered pool is not included in the Division's list, the Division shall issue a supplementary Bottom Hole Pressure Schedule. Tests as designated by the Division shall only apply to flowing wells in each pool. This test shall be made by a person qualified by both training and experience to make such test, and with an approved subsurface pressure instrument which shall be calibrated against an approved dead-weight tester at intervals frequent enough to ensure its accuracy within one per cent. Unless otherwise

designated by the Division all wells shall remain completely shut in for at least 24 hours prior to the test. In the event a definite datum is not established by the Division the subsurface determination shall be obtained as close as possible to the mid-point of the productive sand of the reservoir. The report shall be on Form C-124 and shall state the name of the pool, the pool datum (if established), the name of the operator and lease, the well number, the wellhead elevation above sea level, the date of the test, the total time the well was shut in prior to the test, the subsurface temperature in degrees Fahrenheit at the test depth, the depth in feet at which the subsurface pressure test was made, the observed pressure in pounds per square inch gauge (corrected for calibration and temperature), the corrected pressure computed from applying to the observed pressure the appropriate correction for difference in test depth and reservoir datum plane and any other information as required by Form C-124.

RULE 303. SEGREGATION OF PRODUCTION FROM POOLS

A. SEGREGATION REQUIRED

Each pool shall be produced as a single common source of supply and the wells therein shall be completed, cased, maintained, and operated so as to prevent communication, within the well-bore, with any other specific pool or horizon, and the production therefrom shall at all times be actually segregated, and the commingling or confusion of such production, before marketing, with the production from any other pool or pools is strictly prohibited.

B. SURFACE COMMINGLING

The Division Director shall have the authority to grant an exception to Rule 303-A to permit the commingling in common facilities of the commonly owned production from two or more common sources of supply, without notice and hearing, provided that the liquid hydrocarbon production from each common source of supply is to be accurately measured or determined prior to such commingling in accordance with the applicable provisions of the Division "Manual for the Installation and Operation of Commingling Facilities," then current.

Applications for administrative approval to commingle the production from two or more common sources of supply shall be filed in triplicate with the Santa Fe Office of the Division. The application must contain detailed data as to the gravities of the liquid hydrocarbons, the values thereof, and the volumes of the liquid hydrocarbons from each pool, as well as the expected gravity and value of the commingled liquid hydrocarbons production; a schematic diagram of the proposed installation; a plat showing the location of all wells on the applicant's lease and the pool from which each well is producing. The application shall also state specifically whether the actual commercial value of such commingled production will be less than the sum of the values of the production from each common source of supply and, if so, how much less.

Where State or Federal lands are involved, applicant shall furnish evidence that the Commissioner of Public Lands for the State of New Mexico or the Regional Supervisor of the United States Geological Survey has consented to the proposed commingling.

C. DOWN-HOLE COMMINGLING

1. The Division Director shall have the authority to grant an exception to Rule 303-A to permit the commingling in the well-bore of dually completed oil wells when the following facts exist and the following conditions are met:

- (a) Both zones to be commingled in the well-bore are classified as oil zones.
- (b) The total daily production from both zones before commingling (as determined in accordance with Section 2, paragraphs (d) and (e) below) does not exceed the following:

<u>Bottom perforation, lowermost pool</u>	<u>Bbls/day</u>
Less than 4,999 feet	20
5,000 feet to 5,999 feet	30
6,000 feet to 6,999 feet	40
7,000 feet to 7,999 feet	50
8,000 feet to 8,999 feet	60
9,000 feet to 9,999 feet	70
More than 10,000 feet	80

- (c) Both zones require artificial lift, or, both zones are capable of flowing. (Special consideration may be given to an exception of this latter requirement in the case in which a particular well's characteristics may justify same; however, the commingled production must be artificially lifted if either zone required artificial lift prior to commingling.)
- (d) Neither zone produces more water than the combined oil limit as determined in paragraph (b) above.

- (e) The fluids from each zone are compatible with the fluids from the other, and combining the fluids will not result in the formation of precipitates which might damage either reservoir.
- (f) The total value of the crude will not be reduced by commingling.
- (g) Ownership of the two zones to be commingled is common (including working interest, royalty, and overriding royalty).
- (h) The commingling will not jeopardize the efficiency of present or future secondary recovery operations in either of the zones to be commingled.

2. To obtain approval for down-hole commingling, the operator of the well shall submit the following in duplicate to the Division Director plus one copy to the appropriate District Office of the Division.

- (a) Name and address of the operator.
- (b) Lease name, well number, well location.
- (c) Names of the pools the well is completed in and the Division order number which authorized the dual completion.
- (d) A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas, and water produced from each zone.
- (e) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes. (This requirement may be dispensed with in the case of a newly completed or recently completed well which has little or no production history. However, a complete resume of the well's completion history including description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be submitted.)
- (f) Estimated bottom-hole pressure for each artificially lifted zone. A current (within 30 days) measured bottom-hole pressure for each zone capable of flowing.
- (g) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.
- (h) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams.
- (i) A statement that all offset operators and, in the case of a well on Federal land, the United States Geological Survey, have been notified in writing of the proposed commingling.

3. The Division Director may approve the proposed down-hole commingling in the absence of a valid objection within 20 days after the receipt of the application if, in his opinion, there is no disqualifying disparity of bottomhole pressures of other reservoir characteristics, waste will not result thereby, and correlative rights will not be violated. The 20-day waiting period may be dispensed with upon receipt of waivers of objection from all parties mentioned in Section 2, paragraph (i).

4. Upon such approval, the well shall be operated in accordance with the provisions of the administrative order which authorized the commingling, and allocation of the commingled production from the well to each of the producing zones shall be in accordance with the allocation formula set forth in the order. The production from the well shall be subject to the lower of the daily gas-oil ratio limitations applicable to the reservoirs. Wells shall be tested on a commingled basis annually, except that a well penalized for a high gas-oil ratio shall be tested semi-annually.

5. The Division Director may rescind authority to commingle production in the well-bore and require both zones to be produced separately, if, in his opinion, waste or reservoir damage is resulting thereby or the efficiency of any secondary recovery project is being impaired, or if any change of conditions renders the installation no longer eligible for down-hole commingling under the provisions of Section 1, paragraphs (2) through (h).

RULE 304. CONTROL OF MULTIPLE COMPLETED WELLS

Multiple completed wells which have been authorized by the Division shall at all times be operated, produced, and maintained in a manner to ensure the complete segregation of the various common sources of supply. The Division may require such tests as it deems necessary to determine the effectiveness of the segregation of the different common sources of supply.

RULE 305. METERED CASINGHEAD GAS

The owner of a lease shall not be required to measure the exact amount of casinghead gas produced and used by him for fuel purposes in the development and normal operation of the lease. All casinghead gas produced

and sold or transported away from a lease, except small amounts of flare gas, shall be metered and reported in standard cubic feet monthly to the Division. The amount of casinghead gas sold in small quantities for use in the field may be calculated upon a basis generally acceptable in the industry, or upon a basis approved by the Division in lieu of meter measurements.

RULE 306. CASINGHEAD GAS

(a) No casinghead gas produced from any well in this state shall be flared or vented after 60 days following completion of the well.

(b) Any operator seeking an exception to the foregoing shall file an application therefor on Division Form C-129, Application for Exception to No-Flare Rule 306. Form C-129 shall be filed in triplicate with the appropriate district office of the Division. The district supervisor may grant an exception when the same appears reasonably necessary to protect correlative rights, prevent waste, or prevent undue hardships on the applicant. The district supervisor shall either grant the exception within ten days after receipt of the application or refer it to the Division Director who will advertise the matter for public hearing if a hearing is desired by the applicant.

(c) The flaring or venting by an operator of gas from any well in violation of this rule will result in suspension of the allowable assigned to the well.

(d) No extraction plant processing gas in the State of New Mexico shall flare or vent such gas unless such flaring or venting is made necessary by mechanical difficulty of a very limited temporary nature or unless the gas flared or vented is of no commercial value.

In the event of a more prolonged mechanical difficulty or in the event of plant shut-downs or curtailment because of scheduled or non-scheduled maintenance or testing operations or other reasons, or in the event a plant is unable to accept, process, and market all of the casinghead gas produced by wells connected to its system, the plant operator shall notify the Division as soon as possible of the full details of such shut-down or curtailment, following which the Division shall take such action as is necessary to reduce the total flow of gas to such plant.

(e) Pending connection of a well to a gas-gathering facility, or when a well has been excepted from the provisions of Section (a) of this rule, all gas produced and not utilized shall be burned, and the estimated volume reported on the monthly production report, Form C-115.

(f) The provisions of Section (2) of this rule shall not be applicable to wells completed prior to January 1, 1971, in pools which had no gas-gathering facilities on that date, provided however, said provisions shall be applicable to all wells in such a pool 60 days after the date of first casinghead gas connection in the pool.

RULE 307. USE OF VACUUM PUMPS

Vacuum pumps or other devices shall not be used for the purpose of creating a partial vacuum in any stratum containing oil or gas.

RULE 308. SALT OR SULPHUR WATER

Operators shall report monthly on Form C-115 the amount of percentage of salt or sulphur water produced with the oil by each well making 2 percent or more water.

RULE 309-A CENTRAL TANK BATTERIES - AUTOMATIC CUSTODY TRANSFER EQUIPMENT

Oil shall not be transported from a lease until it has been received and measured in a facility of an approved design located on the lease. Such facilities shall permit the testing of each well at reasonable intervals and may be comprised of manually gauged closed stock tanks for which proper strapping tables have been prepared, with a maximum of sixteen proration units producing into said tanks, or of automatic custody transfer (ACT) equipment. The use of such automatic custody transfer equipment shall be permitted only after compliance with the following:

1. The operator shall file with the Division Form C-106, Notice of Intention to Utilize Automatic Custody Transfer Equipment, and shall receive approval thereof prior to transferring oil through the ACT system. The carrier shall not accept delivery of oil through the ACT system until Form C-106 has been approved.

2. Form C-106 shall be submitted in quadruplicate to the appropriate District Office of the Division and shall be accompanied (in quadruplicate) by the following:

- (a) Plat of the lease showing thereon all wells which will be produced into the ACT system.

- (b) Schematic diagram of the ACT equipment, showing thereon all major components such as surge tanks and their capacity, extra storage tanks and their capacity, transfer pumps, monitors, reroute valves, treaters, samplers, strainers, air and gas eliminators, back pressure valves,

metering devices (indicating type and capacity, i.e., whether automatic measuring tank, positive volume metering chamber, weir-type measuring vessel, or positive displacement meter). Schematic diagram shall also show means employed to prove accuracy of measuring device.

(c) Letter from transporter agreeing to utilization of ACT system as shown on schematic diagram.

3. Form C-106 will not be approved by the Division unless the ACT system is to be installed and operated in compliance with the following:

- (a) Provision must be made for accurate determination and recording of uncorrected volume and applicable temperature, or of temperature corrected volume. The overall accuracy of the system shall equal or surpass manual methods.
- (b) Provision must be made for representative sampling of the oil transferred for determination of API gravity and BS&W content.
- (c) Provision must be made if required by either the producer or the transporter of the oil to give adequate assurance that only merchantable oil is run by the ACT system.
- (d) Provision must be made for set-stop counters to stop the flow of oil through the ACT system at or prior to the time the allowable has been run. All counters shall provide non-reset totalizers which shall be visible for inspection at all times.
- (e) All necessary controls and equipment must be enclosed and sealed, or otherwise be so arranged as to provide assurance against, or evidence of, accidental or purposeful mismeasurement resulting from tampering.
- (f) All components of the ACT system shall be properly sized to ensure operation within the range of their established ratings. All components of the system which require periodic calibration and/or inspection for proof of continued accuracy must be readily accessible. The frequency and methods of such calibration and/or inspection shall be set forth in Rule 309-A, 4-c.
- (g) The control and recording system must include adequate fail-safe features which will provide assurance against mismeasurement in the event of power failure, or the failure of the ACT system's component parts.
- (h) 1. The ACT system and allied facilities shall include such fail-safe equipment as may be necessary, including high level switches in the surge tank or overflow storage tank which, in the event of power failure or malfunction of the ACT or other equipment, will shut down all artificially lifted wells connected to the ACT system and will shut in all flowing wells at the well-head or at the header manifold, in which latter case all flowlines shall be pressure-tested to at least $1\frac{1}{2}$ times the maximum well-head shut-in pressure prior to initial use of the ACT system and each two years thereafter.

2. As an alternative to the requirements of paragraph (b) 1 above, the producer shall provide and shall at all times maintain a minimum of available storage capacity above the normal high working level of the surge tank to receive and hold the amount of oil which may be produced during maximum unattended time of lease operation.

4. (a) In all ACT systems employing automatic measuring tanks, weir-type measuring vessels, positive volume metering chambers, or any other volume measuring container, the container and allied components shall be properly calibrated prior to initial use and shall be operated, maintained, and inspected as necessary to ensure against incrustation, changes in clingage factors, valve leakage or other leakage, and improper action of floats, level detectors, etc.
- (b) In all ACT systems employing positive displacement meters, the meter(s) and allied components shall be properly calibrated prior to initial use and shall be operated, maintained, and inspected as necessary to ensure against mismeasurement of oil.

(c) The measuring and recording devices of all ACT systems shall be checked for accuracy at least once each month unless exception to such determination has been obtained from the Division Director. API Standard 1101, "Measurement of Petroleum Liquid Hydrocarbons by Positive Displacement Meter," shall be used where applicable. Meters may be proved against Master Meters, Portable Prover Tanks, or Prover Tanks permanently installed on the lease. If permanently installed Prover Tanks are used, the distance between the opening and closing levels and the provision for determining the opening and closing readings shall be sufficient to detect variations of 5/100 of one percent. Reports of determination shall be filed on the Division Form entitled "Meter Test Report," or on another acceptable form and shall be submitted in duplicate to the appropriate District Office of the Division.

(d) To obtain exception to the requirement of paragraph (c) above that all measuring and recording devices be checked for accuracy once each month, either the producer or transporter may file such a request with the Division Director setting forth all facts pertinent to such exception. The

application shall include a history of the average factors previously obtained, both tabulated and plotted on a graph of factors versus time, showing that the particular installation has experienced no erratic drift. The applicant shall also furnish evidence that the other interested party has agreed to such exception. The Division Director may then set the frequency for determination of the system's accuracy at the interval which he deems prudent.

5. Failure to operate an automatic custody transfer system in compliance with this rule shall subject the approval thereof to revocation by the Division.

RULE 309-B. ADMINISTRATIVE APPROVAL, LEASE COMMINGLING

The Division Director shall have authority to grant exceptions to Rule 309-A to permit the commingling of production from two or more separate leases in a common tank battery without notice and hearing, provided application has been filed in triplicate with the Division and is accompanied by plats of the leases showing thereon the wells on the leases and the formations in which they are completed, and schematic diagrams of the commingling facility, showing it to be of an acceptable design in accordance with the Division "Manual for the Installation and Operation of Commingling Facilities," then current, and provided further that:

1. All production is from the same common source of supply or an exception to Rule 303 (a) has been obtained.

2. Adequate facilities will be provided for accurately determining production from each well at reasonable intervals.

3. All parties owning an interest in the leases and the purchaser of the commingled production therefrom have consented in writing to the commingling of production from the separate leases.

4. In lieu of paragraph 3 of this rule, the applicant may furnish proof of the fact that said parties were notified by registered or certified mail of his intent to commingle production from the separate leases. The Division Director may approve the application if, after a period of 20 days following receipt of the application, no party has made objection to the application.

5. In addition to the foregoing requirements for administrative approval to commingle production from two or more separate leases, the following requirements shall also apply:

(a) To commingle production from two or more separate leases in a common tank battery without first separately measuring the production from each such lease, the ownership of the leases must be common throughout. This shall include working interest ownership, royalty ownership, and overriding royalty ownership.

(b) To commingle production from two or more separate leases in a common tank battery where there is a diversity of ownership (whether in working interest, royalty interest, or overriding royalty interest) the hydrocarbon production from each lease shall be accurately measured and determined in accordance with the applicable provisions of the Division "Manual for the Installation and Operation of Commingling Facilities," then current.

RULE 309-C. ADMINISTRATIVE APPROVAL, OFF-LEASE STORAGE

For good cause shown, the Division Director shall have authority to grant an exception to Rule 309-A to permit the production from one lease to be transported prior to measurement to another lease for storage thereon, provided an application reflecting ownership of the leases has been filed in triplicate with the Division and is accompanied by plats of the leases showing thereon the wells on the leases and the formations in which they are completed and the proposed location of the tank battery, and provided further that:

1. All production is from the same common source of supply.

2. Commingling of production from the two leases will not result.

3. There will be no intercommunication of the handling, separating, treating, or storage facilities designated to each lease.

4. All parties owning an interest in the leases have consented in writing to the off-lease storage.

5. In lieu of paragraph 4 of this rule, the applicant may furnish proof of the fact that said parties were notified by registered or certified mail of his intent to transport prior to measurement the production from one lease to another lease for storage. The Division Director may approve the application if, after a period of 20 days following receipt of the application, no party has made objection to the application.

6. Where State or Federal lands are involved, the applicant shall furnish evidence that the Commissioner of Public Lands for the State of New Mexico or the Regional Supervisor of the United States Geological Survey has consented to the proposed off-lease storage.

RULE 310. OIL TANKS AND FIRE WALLS

Oil shall not be stored or retained in earthen reservoirs, or in open receptacles. Dikes or fire walls shall not be required except such fire walls must be erected and kept around all permanent oil tanks, or battery of tanks that are within the corporate limits of any city, town, or village, or where such tanks are closer than 150 feet to any producing oil or gas well or 500 feet to any highway or inhabited dwelling or closer than 1000 feet to any school or church, or where such tanks are so located as to be deemed an objectionable hazard within the discretion of the Division. Where fire walls are required, fire walls shall form a reservoir having a capacity one-third larger than the capacity of the enclosed tank or tanks.

RULE 311. SEDIMENT OIL

(a) "Sediment Oil" is defined as tank bottoms and any other accumulations of liquid hydrocarbons on an oil and gas lease, which hydrocarbons are not merchantable through normal channels.

(b) No sediment oil shall be burned or otherwise destroyed unless and until the Division has approved an application to destroy the same on Form C-117-A (Sediment Oil Destruction Permit). Unless the authorization to burn sediment oil is utilized within ten (10) days after approval of the Form C-117-A, such authorization is automatically revoked. However, the District Supervisor may approve one ten (10) day extension in writing for a good cause shown. No sediment oil destruction permit shall be required when the sediment oil is put to beneficial use on the originating lease for purposes of oiling lease roads, fire walls, tank grades, or other similar purposes.

(c) When sediment oil is to be removed from a lease for reclamation, the person removing such sediment oil shall obtain a permit (Form C-117-B) from the appropriate District Office of the Division prior to removal of the oil from the lease. Any merchantable oil recovered from sediment oil shall be charged against the allowable for the wells on the originating lease. All such recovered oil shall be reported by the operator of the lease on Form C-115 (Operator's Monthly Report). Nothing contained in paragraph (c) of this Rule shall apply to reclaiming of pipeline break oil or the treating of tank bottoms occurring at a pipeline break oil or the treating of tank bottoms occurring at a pipeline station, crude oil storage terminal, or refinery, to the treating by a gasoline plant operator of oil and other catchings collected in traps and drips in the gas gathering lines connected to gasoline plants and in scrubbers at such plants, nor to the treating or reclamation of oil and other catchings collected in community salt water disposal systems.

RULE 312. TREATING PLANTS

No treating plant shall operate except in conformity with the following provisions:

(a) Prior to the construction of a treating plant, a written application shall be filed for a treating plant permit stating in detail the location and type and capacity of the plant contemplated. The Division, in not less than 30 days, will set such application for hearing to determine whether the proposed plant and method of processing will efficiently process, treat, and reclaim sediment oil. Before beginning actual operations, the permittee shall file with the Division a performance bond in the amount of \$10,000, conditioned upon substantial compliance with applicable statutes of the State of New Mexico and all rules, regulations, and orders of the Oil Conservation Division.

(b) Such permit shall entitle the treating plant operator to an approved Form C-104, Request for Allowable and Authorization to Transport Oil and Natural Gas for the total amount of products secured from sediment oils processed by the operator. All permits shall be revocable, after notice and hearing, upon showing of good cause.

(c) All treating plant operators shall file a monthly report which shall support the Division Form C-104 for the net oil recovered and sold during the preceding month. See Rule 1118.

The operator of each lease from which sediment oil is removed for reclamation shall be promptly notified by the treating plant operator of the amount of pipeline oil recovered therefrom. In the event sediment oil from two or more separate leases is to be commingled prior to treating, the treating plant operator shall determine the amount of pipeline oil attributable to each lease by testing a representative sample of the sediment oil from said lease in accordance with the standard centrifugal test prescribed by the API Code for Measuring, Sampling, and Testing Crude Oil, Number 25, Section 5.

RULE 313. EMULSION, BASIC SEDIMENTS, AND TANK BOTTOMS

Wells producing oil shall be operated in such a manner as will reduce as much as practicable the formation of emulsion and basic sediments. These substances and tank bottoms shall not be allowed to pollute streams or cause surface damage. If tank bottoms are removed to surface pits, the pits shall be fenced and the fence shall be kept in good repair.

RULE 314. GATHERING, TRANSPORTING AND SALE OF DRIP

(a) "Drip" is defined as any liquid hydrocarbon incidentally accumulating in a gas gathering or transportation system.

(b) The waste of drip is hereby prohibited when it is economically feasible to salvage the same.

(c) The movement and sale of drip is hereby authorized, provided the provisions of this Rule are complied with.

(d) No drip shall be transported nor sold until the gas transporter has filed Division Form C-104 designating the drip transporter authorized to remove the drip from its gas gathering or transportation system.

(e) Every person transporting drip within the State of New Mexico shall file Division Form C-112 each month, showing the amount, source, and disposition of all drip handled during the reporting period, and such other reports as may hereafter be required by the Division.

(f) Prior to commencement of operations, every person transporting drip directly from a gas gathering or transportation system shall file with the Division plats drawn to scale, locating and identifying each drip trap which he is authorized to service.

(g) Every person transporting drip directly from a gas gathering or transportation system shall keep a record of daily acquisitions from each drip trap which he is authorized to service, which records shall be made available at all reasonable times for inspection by the Division or its authorized representatives.

(h) Every gas transporter in the State of New Mexico shall, on or before the first day of November of each year, file with the Division maps of its entire gas gathering and transportation systems within the State of New Mexico, locating and identifying thereon each drip trap in said systems, said maps to be accompanied by a report, on a form prescribed by the Division, showing the disposition being made of the drip from each of said drip traps.

F - NATURAL GAS PRODUCTION OPERATING PRACTICE

RULE 401. METHOD OF DETERMINING NATURAL GAS WELL POTENTIAL

All operators shall conduct tests to determine the daily open flow potential volumes of all natural gas wells from which gas is being used or marketed. Such tests shall be reported on forms prescribed by the Division within 60 days after: (1) the date of initial connection of the well to a gas transportation facility and (2) the date of reconnection following workover.

To establish comparable open flow capacity, wells shall be tested in accordance with the Oil Conservation Division "Manual for Back-Pressure Testing of Natural Gas Well." In the event the Division approves the alternate method for testing, all wells producing from a common source of supply shall be tested in a uniform and comparable manner.

All gas wells which are not connected to a gas gathering facility shall be tested within 30 days following the installation of a Christmas tree. Tests shall be taken in accordance with the Rules of Procedure for Testing Unconnected Gas Well contained in the Oil Conservation Division "Manual for Back-Pressure Testing of Natural Gas Wells." Tests shall be reported on Form C-122 in compliance with Rule 1122 and shall be filed within 10 days following completion of the test.

RULE 402. METHOD AND TIME OF SHUT-IN PRESSURE TESTS

(a) Shut-in pressure tests shall be taken on all natural gas wells annually. Such tests shall be taken by the operator of the well during the months of July, August, or September unless otherwise specified by special pool rules or special directive. Tests shall be reported to the appropriate District Office of the Division on Form C-125 not later than October 15 of the same year.

(b) Shut-in pressures shall be taken with a dead-weight gauge after a minimum shut-in period of 24 hours. When the shut-in period exceeds 24 hours, the length of time the well was shut in shall be reported to the Division.

(c) The Division Director may prescribe special shut-in pressure test periods and procedures for pools when he deems the same necessary in order to obtain more accurate pressure data.

RULE 403. NATURAL GAS FROM GAS WELLS TO BE MEASURED

All natural gas produced shall be accounted for by metering or other method approved by the Division and reported to the Division by the common purchaser of the gas. Gas produced from a gas well and delivered to a gas transportation facility shall be reported by the owner or operator of the gas transportation facility. Gas produced from a gas well and required to be reported under this rule, which is not delivered to and reported by a gas transportation facility, shall be reported by the operator of the well.

RULE 404. NATURAL GAS UTILIZATION

(a) After the completion of a natural gas well, no gas from such well shall be (1) permitted to escape to the air, (2) used expansively in engines or pumps and then vented, or (3) used to gas-lift wells unless all gas produced is processed in a gasoline plant, used in the manufacture of carbon black, or beneficially used thereafter without waste.

(b) Carbon black plants may utilize natural gas only in those instances in which all casinghead gas and residue gas produced in the vicinity of or which may reasonably be reached from the carbon black plant, is being used beneficially.

(c) Any carbon black plant constructed after June 10, 1954, or any then existing carbon black plant which enlarges or expands its facilities for the manufacture of carbon black, may utilize natural gas in the manufacture of carbon black only after permission of the Division is obtained upon due notice and hearing.

RULE 405. STORAGE GAS

With the exception of the requirement to meter and report monthly the amount of gas injected and the amount of gas withdrawn from storage, in the absence of waste these rules and regulations shall not apply to gas being injected into or removed from storage. (See Rule 1131.)

RULE 406. CARBON DIOXIDE

The statewide regulations relating to gas and natural gas, gas wells, and gas reservoirs including, but not limited to, those provisions relating to well locations, acreage dedication requirements, casing and cementing requirements, and measuring and reporting of production shall also apply to carbon dioxide gas, carbon dioxide wells, and carbon dioxide reservoirs.

RULE 407. DISCONNECTION OF GAS WELLS

All gas wells which are disconnected from intrastate gas transportation facilities shall be reported to the Division by the operator of the well or wells within 30 days of the date of disconnection. Such notice must be filed on Form C-130 in compliance with Rule 1130.

G - OIL PRORATION AND ALLOCATION

RULE 501. REGULATION OF OIL POOLS

(a) To prevent waste, the Division shall prorate and distribute the allowable production among the producers in a pool upon a reasonable basis and recognizing correlative rights.

(b) After notice and hearing, the Division in order to prevent waste and protect correlative rights, may promulgate special rules, regulations, or orders pertaining to any pool.

RULE 502. RATE OF PRODUCING WELLS

I. Daily Tolerance

(a) It is recognized that oil wells located on units capable of producing their allowables may over-produce one day and underproduce another. No unit capable of producing its allowable, except for the purpose of testing, in the process of completing or recompleting a well or for tests made for the purpose of obtaining scientific data, shall produce any day more than 125% of the daily top unit allowable for the pool in which the same is located. (Subject to the foregoing, any underproduction may be made up by production from the same unit within the same month, and in like manner any overproduction shall be adjusted or balanced by underproduction from the same unit, within the same proration period.)

(b) It is also recognized that certain wells must, as a matter of practicality, be produced at daily rates in excess of 125% of the daily top unit allowable for the pool in which such wells are located. The Division Director is hereby given authority to grant exceptions to the provisions of paragraph (a) above, without formal hearing, where application is filed in due form setting out the reasons for such requested exception; applicants for such exceptions shall, at the time of filing, also furnish each operator in the pool in which the subject well is located, a copy of such application. Included in any application for exception or attached thereto, filed under authority hereof, shall be a formal written statement by the applicant that every operator in the pool in which the subject well is located has been served with a copy of such application. The Division Director shall wait at least ten (10) days after receipt before approving any such application, and shall approve the same only in absence of objection from any operator or interested party, or in his discretion. In the event the Director for any reason fails to approve such application, the Division after notice will hear and determine the matter.

II. Monthly Tolerance

No unit shall produce during any one proration period more than the allowable production of such unit for the proration period plus a tolerance of not to exceed five (5) days allowable production. This permissive tolerance of overproduction from a unit shall be subject to all other provisions of Rule 502 and particularly to the provisions of Paragraph IV. This permissive tolerance of overproduction from a unit shall be adjusted or balanced by subsequent corresponding underproduction from the same unit. Overproduction within the permitted tolerance shall be considered as oil produced against the allowable production assigned to the unit for the proration period during which such overproduction is adjusted or balanced by underproduction.

III. Production in Excess of Monthly, Allowable, Plus Tolerance

Oil produced from any unit in excess of the assigned monthly allowable plus the permissive proration period tolerance shall be "illegal oil" as defined in the Oil and Gas Act, unless (a) such excess oil be produced as a result of mistake or error, (b) mechanical failure beyond the immediate control of the operator, or, (c) resulting from essential tests of the unit within the purview of Oil Conservation Rules. Whenever production from any unit for a proration period is in excess of the assigned allowable, plus the permitted tolerance authorized herein and the cause of such excess reasonably falls within (a), (b), or (c) of this paragraph, the producer or operator shall briefly set forth the cause of such excess production together with a proposed plan of adjustment thereof, upon all copies of the operator's monthly report (Form C-115) for the month in which such excess production occurs. Such excess production shall be considered as oil produced against the allowable assigned to the unit for the following proration period, and it may be transported from the lease tanks only as and when the unit accrues daily allowable to offset such excess production.

IV. General

The tolerance permitted on a daily or monthly basis as provided hereinabove shall not be construed to increase the allowable of a producing unit or to grant authority to any operator to market or to any transporter to transport any quantity of oil in excess of the unit's allowable.

The possession of a quantity of oil in lease storage at the end of any proration period in excess of five days allowable plus any rerun allowable oil shall be construed as violation of this Rule, unless reported in the manner and within the time provided for filing Form C-115 provided by Section III above.

V. Storage Records

All producers and all transporters of oil are required to maintain adequate records showing unrun allowable oil in storage at the end of each proration period. Such storage oil shall be the amount of oil in tanks from which oil is measured and delivered to the transporter.

RULE 503. AUTHORIZATION FOR PRODUCTION OF OIL

(a) Except as provided below, the daily top unit allowable for any oil pool shall be 100 percent of the depth bracket allowable for the pool determined pursuant to the provisions of Rule 505.

(b) Every other month the Division shall, within five days prior to the end of the month, make a determination as to the likelihood of the total producing capacity of all oil wells in the state being in excess of anticipated reasonable market demand for crude petroleum oil from this state.

If the Division determines that such capacity may be in excess of the anticipated reasonable market demand, and that a market demand factor of less than 100 percent may be necessary to prevent waste, then it shall immediately institute proper proceedings for a hearing to be held before the 20th day of the following month to determine actual reasonable market demand for the next two succeeding months.

(c) At said hearing the Division shall consider all evidence of market demand for crude petroleum oil from this state, and if it is determined that the market demand percentage factor should be less than 100 percent, an order shall be issued establishing the market demand factor for the ensuing two-month period and setting a date for the next market demand hearing.

(d) The market demand factor thus established shall be multiplied by the applicable depth bracket allowable for each well and each pool to determine its top unit allowable. Any fraction of a barrel shall be regarded as a full barrel in determining top unit allowable.

Upon initial establishment of a market demand factor, and from time to time thereafter, the Division shall issue a proration schedule authorizing the production of oil from the various proration units in the various pools in the state. Any well completed or recompleted after the issuance of said schedule and for which Form C-104 has been approved, shall, by supplement to the schedule, be authorized a daily allowable equal to the ability of the well to produce up to and including the top unit allowable in effect. The allowable for such well shall become effective at 7:00 a.m. on the date of completion, provided Form C-104 is submitted and approved within ten days following date of completion; otherwise the allowable shall be effective on the date the C-104 is approved. (As provided in Rule 1104, "date of completion" is the date when new oil is delivered into the stock tanks.)

(e) A non-marginal unit is defined as being a proration unit which is capable of producing top unit allowable for the pool in which it is located and to which has been assigned a top unit allowable. Any such non-marginal unit shall be permitted to produce said top unit allowable without waste and subject to the provisions of Rules 301, 502, and 506, and all other applicable units. Top unit allowable will be assigned only to those units which by tests have demonstrated their ability to produce top unit allowable.

A marginal unit is defined as being a proration unit which is incapable of producing top unit allowable for the pool in which it is located as evidenced by well test, production history, or other report or form filed by the operator with the Division. Any such marginal unit shall be permitted to produce any amount of oil which it is capable of producing without waste up to top unit allowable for the pool, subject to the provisions of Rules 301, 502, and 506, and all other applicable rules, provided that an allowable has been assigned to the unit to authorize such production.

A penalized unit is defined as being a proration unit to which, because of an excessive gas-oil ratio, an allowable has been assigned which is less than top unit allowable for the pool and also less than the ability of the well(s) on the unit to produce. Such penalized allowable shall be determined in accordance with the procedure set forth in Rule 506. In calculating a penalized allowable, any fraction of a barrel shall be regarded as a full barrel.

(f) Any change in the allowable assigned to any unit-non-marginal, marginal, or penalized, shall be accomplished through issuance of a new proration schedule or by supplement to a previously issued proration schedule. A periodic tabulation of all supplement to the current proration schedule shall be made and distributed by the Division.

(g) The provisions of Rule 104(h) et seq. shall be adhered to in fixing top unit allowables.

(h) In the event it becomes necessary for any transporter of crude petroleum to resort to pipeline proration in New Mexico, such transporter shall, as soon as possible and not later than 24 hours after the effective date thereof, notify the Division of its decision to so prorate; upon receipt of such notice from such transporter, the Division may take such emergency action, as may be deemed proper, and/or upon its own motion, after notice, hold a hearing for the purpose of considering any action within its authority, to preserve and protect correlative rights.

In case of pipeline proration any operator affected thereby has the right to make application to the Division for authorization to have any shortage or underproduction resulting therefrom included in subsequent proration schedules. Such applications shall be made upon a form hereby authorized to be prescribed by the Division and filed therewith within thirty days after the close of the first proration period in which such pipeline proration shortage occurred, and such authorization shall be limited in any event to wells capable of producing the daily top unit allowable for such period.

In approving any such application the Division shall determine the period of time during which such shortage shall be made up without injury to the well or pool, and shall include the same in the regularly approved proration schedules following the conclusion of pipeline proration.

RULE 504. AUTHORIZATION FOR PRODUCTION OF OIL WHILE COMPLETING, RECOMPLETING, OR TESTING AN OIL WELL

(a) In the event an operator does not have sufficient lease storage to hold oil produced from a well during the process of its drilling, completing, recompleting, or testing, the operator of said well shall be permitted to produce and sell from said well an amount of oil as may be necessary to drill, complete, recomplete or test said well; provided however, that the operator of said well shall file with the Division a written application stating the circumstances at said well and setting forth therein the estimate amount of oil to be produced during the aforementioned process of operations, and provided further that said application is approved by the Division. Oil produced during the process of drilling, completion or re-completion, or testing a well shall be charged against the allowable production of said well.

(b) No well shall be placed on the proration schedule until Form C-104 has been filed with and approved by the Division.

RULE 505. DEPTH BRACKET ALLOWABLES

(a) Subject to the market demand percentage factor determined pursuant to the provisions of Rule 503, the daily oil allowable for each oil pool in the state shall be equal to the appropriate depth bracket allowable below. The depth of the casing shoe or the top perforation in the casing, whichever is higher, in the first well completed in the pool shall determine the depth classification for the pool. Daily oil allowables for each of the several ranges of depth and spacing patterns shall be as follows:

POOL DEPTH RANGE	DEPTH BRACKET ALLOWABLE		
	40 Acres	80 Acres	160 Acres
0 to 4,999 feet	80 bbls.	160 bbls.	
5,000 to 5,999 "	107 "	187 "	347 bbls.
6,000 to 6,999 "	142 "	222 "	382 "
7,000 to 7,999 "	187 "	267 "	427 "
8,000 to 8,999 "	230 "	310 "	470 "
9,000 to 9,999 "	275 "	355 "	515 "
10,000 to 10,999 "	320 "	400 "	560 "
11,000 to 11,999 "	365 "	445 "	605 "
12,000 to 12,999 "	410 "	490 "	650 "
13,000 to 13,999 "	455 "	535 "	695 "
14,000 to 14,999 "	500 "	580 "	740 "
15,000 to 15,999 "	545 "	625 "	785 "
16,000 to 16,999 "	590 "	670 "	830 "
17,000 to 17,999 "	635 "	715 "	875 "

(b) The 40-acre depth bracket allowables shall apply to all undesignated wells not governed by special pool rules and to all pools developed on the normal 40-acre statewide spacing unit.

(c) The 80-acre and 160-acre depth bracket allowables shall apply to wells governed by applicable special pool rules promulgated by the Division as an exception to the normal 40-acre statewide spacing unit.

(d) The Division may, where the same is deemed available, assign to a given pool a special depth bracket allowable at variance to the depth bracket allowable normally assigned to a pool of similar depth and spacing. Such special allowable may be more or less than the regular depth bracket allowable and shall be assigned only after notice and hearing.

In assigning a lesser than regular depth bracket allowable, the Division may consider, among other pertinent factors, reservoir damage, casinghead gas production and disposition, water production and disposition, transportation facilities, the prevention of surface or underground waste, and the protection of correlative rights.

Assignment of a greater than regular depth bracket allowable shall be made only after sufficient reservoir information is available to ensure that said allowable can be produced without damage to the reservoir

and without causing surface or underground waste. The Division shall also consider the availability of crude oil transportation and marketing facilities, casinghead gas transportation, processing, and marketing facilities, water disposal facilities, the protection of correlative rights, and other pertinent factors.

RULE 506. GAS-OIL RATIO LIMITATION

(a) In allocated pools containing a well or wells producing from a reservoir which contains both oil and gas, each proration unit shall be permitted to produce only that volume of gas equivalent to the applicable limiting gas-oil ratio multiplied by the top unit oil allowable for the pool. In the event the Division has not set a gas-oil ratio limit for a particular oil pool, the limiting gas-oil ratio shall be 2,000 cubic feet of gas for each barrel of oil produced. In allocated oil pools all producing wells, whether oil or casinghead gas, shall be placed on the oil proration schedule.

(b) Unless heretofore or hereafter specifically exempted by order of the Division issued after hearing, a gas-oil ratio limitation shall be placed on all allocated oil pools, and all proration units having a gas-oil ratio exceeding the limit for the pool shall be penalized in accordance with the following formula:

(1) Any proration unit which, on the basis of the latest official gas-oil ratio test, has a gas-oil ratio in excess of the limiting gas-oil ratio for the pool in which it is located shall be permitted to produce daily that number of barrels of oil which shall be determined by multiplying the current top unit allowable by a fraction, the numerator of which shall be the limiting gas-oil ratio for the pool and the denominator of which shall be the official gas-oil ratio test of the well.

(2) Any unit containing a well or wells producing from a reservoir which contains both oil and gas shall be permitted to produce only that volume of gas equivalent to the applicable limiting gas-oil ratio multiplied by the top unit allowable currently assigned to the pool.

(3) A marginal unit shall be permitted to produce the same volume of gas which it would be permitted to produce if it were a non-marginal unit.

(c) All proration units to which gas-oil ratio adjustments are applied shall be so indicated in the proration schedule with adjusted allowables stated.

(d) In cases of new pools, the limit shall be 2,000 cubic feet per barrel until such time as changed by order of the Division issued after a hearing. Upon petition and after notice and hearing according to law, the Division will determine or redetermine the specific gas-oil ratio limit which is applicable to a particular allocated oil pool.

RULE 507. UNITIZED AREAS

After petition and notice and hearing, the Division may grant approval for the combining of contiguous developed proration units into a unitized area.

RULE 508. RECOVERED LOAD OIL

Recovered load oil may be run from the lease on which it is recovered, provided Division approval is obtained by means of Form C-126. Form C-126 must be filed in quadruplicate with the appropriate district office of the Division. Upon approval, one copy will be returned to the operator and one copy will be sent to the designated transporter as authority to transport the oil.

This rule applies only to oil which has been obtained from a source other than the lease on which it is used.

Recovered load oil as used herein is any oil or liquid hydrocarbon which has been used in any operation in an oil or gas well, and which has been recovered as a merchantable product.

RULE 509. OIL DISCOVERY ALLOWABLE

In addition to the normally assigned allowable, an oil discovery allowable may be assigned to a well completed as a bona fide discovery well in a new common source of supply. Said oil discovery allowable shall be in the amount of 5 barrels for each foot of depth of said well from the surface of the ground to the top of the perforations in the new pool or the depth of the casing shoe, whichever is higher. In counties where there is no other current oil production, and in any county when the discovery is the deepest oil production in the county, the oil discovery allowable shall be 10 barrels per foot of depth.

Date of discovery to determine the well which should properly receive the oil discovery allowable for any new pool shall be the date the well is completed and new oil is run into stock tanks, provided however, any operator drilling through and discovering a new oil pool in the course of drilling to a lower horizon

may file an affidavit of such discovery within seven days after drill stem tests were made of said pool, accompanying said affidavit with all available pool data. If, prior to completion of said well, another operator claims discovery of a similar pool and there are reasonable grounds to believe the pools are one and the same, no discovery allowable will be assigned to either well until after the initial well for which the affidavit was filed has been completed. If at that time the operator of the initial well makes formal application for the discovery allowable in said pool, it will be determined after hearing which well shall receive the discovery allowable.

To obtain an oil discovery allowable, the owner of a discovery well shall file two copies of Division Form C-109, Application for Discovery Allowable and Creation of a New Pool, with the appropriate District Office of the Division and one with the Santa Fe office. Each copy of said form shall be accompanied by the following:

1. A map depicting all wells within a two-mile radius of the discovery well. All producing oil and gas wells and the formations from which they are producing or have produced are to be clearly shown as well as all dry holes and the depths to which they were drilled. Maps shall be on a scale one inch equals 1,000 feet and shall also indicate the names of all lessees of record in the depicted area.
2. A complete electrical log of the subject well with the tops and bottoms of producing formations in the subject well and in nearby wells identified thereon.
3. If application is based on horizontal separation, a sub-surface structural map of the producing formation(s) for which the discovery allowable is sought, showing seismic or geological interpretation of the subject structure and any troughs, faults, pinch-outs, etc., which separate the subject well from nearby wells producing from the same formation(s).
4. A geological cross-section prepared from electrical logs of the subject well and nearby establishing horizontal as well as vertical separation from other wells depicted on the plat which are producing or have produced from the discovery formation(s).
5. A summary of all available reservoir data including bottom hole pressure data, fluid levels, core analyses, reservoir liquid characteristics and any other pertinent data on the subject reservoir as well as other nearby reservoirs which may help establish whether the subject well is in fact a discovery.

If, in the opinion of the Division staff, good cause exists to bring the pool on for hearing as a discovery, and no objection has been received from any other operator, the pool will be placed on the first available hearing docket for inclusion by the staff in its regular pool nomenclature case. If the staff is not in agreement with the applicant's contention that a new pool has been discovered, or if, within ten days after receiving a copy of the application another operator files with the Division an objection to the creation of a new pool and the assignment of a discovery allowable, the applicant will be so notified, and he will be expected to present the evidence supporting his case. Or, if the applicant so desires, the application may be set for separate hearing on other than the nomenclature docket for presentation of evidence by the applicant.

Effective date of a well's discovery allowable will be 7:00 a.m. on the first day of the month next succeeding the month in which the Division approves the discovery.

The total discovery attributable to each zone in the well shall be produced over a two-year period commencing with the time of authorization. The well's daily allowable for each pool receiving the discovery allowable shall not exceed the daily top unit allowable for the pool plus the total pool discovery allowable divided by 730 days (731 days if a leap year is included).

A discovery well shall be permitted to produce only that volume of gas equivalent to the applicable limiting gas-oil ratio for the pool multiplied by the top unit allowable for the pool plus the daily oil discovery allowable. In addition to all other statewide rules not specifically excepted herein, the provisions of Division Rule 502 relating to daily tolerance, monthly tolerance, and underproduction and overproduction, shall apply to oil discovery allowables as well as to regular allowables for discovery wells.

Nothing herein contained shall be construed as prohibiting the Division from curtailing the discovery allowables of wells during times of depressed market demand, provided however, such discovery allowables shall be reinstated for production at the earliest possible date. Further, when it appears reservoir damage or waste might result from production of the oil discovery allowable within the normal two-year period, the Division may, after notice and hearing, extend said period.

H - GAS PRORATION AND ALLOCATION

RULE 601. ALLOCATION OF GAS PRODUCTION

When the Division determines that allocation of gas production in a designated gas Pool is necessary to prevent waste, the Division, after notice and hearing, shall consider the nominations of purchasers from that gas pool and other relevant data, and shall fix the allowable production of that pool, and shall allocate production among the gas wells in the pool delivering to a gas transportation facility upon a reasonable basis and recognizing correlative rights. The Division shall include in the proration schedule of such pool any gas well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility which is reasonably capable of handling the type of gas produced by such well.

RULE 602. PRORATION PERIOD

The proration period shall be at least six months and the pool allowable and allocations thereof shall be made at least 30 days prior to each proration period.

RULE 603. ADJUSTMENT OF ALLOWABLES

When the actual market demand from any allocated gas pool during a proration period is more than or less than the allowable set by the Division for the pool for the period, the Division shall adjust the gas proration unit allowables for the pool for the next proration period so that each gas proration unit shall have a reasonable opportunity to produce its fair share of the gas production from the pool and so that correlative rights shall be protected.

RULE 604. GAS PRORATION UNITS

Before issuing a proration schedule for an allocated gas pool, the Division after notice and hearing, shall fix the gas proration unit for that pool.

I. SECONDARY OR OTHER ENHANCED RECOVERY, PRESSURE MAINTENANCE, SALT WATER DISPOSAL,
AND UNDERGROUND STORAGE

RULE 701. INJECTION OF FLUIDS INTO RESERVOIRS

A. Permit for Injection Required

The injection of gas, liquefied petroleum gas, air, water, or any other medium into any reservoir for the purpose of maintaining reservoir pressure or for the purpose of secondary or other enhanced recovery or for storage or the injection of water into any formation for the purpose of water disposal shall be permitted only by order of the Division after notice and hearing, unless otherwise provided herein.

B. Method of Making Application

1. Applications for authority for the injection of gas, liquefied petroleum gas, air, water or any other medium into any formation for any reason, including but not necessarily limited to the establishment of or the expansion of water flood projects, enhanced recovery projects, pressure maintenance projects, and salt water disposal, shall be by submittal of Division Form C-108 complete with all attachments.
2. The applicant shall furnish, by certified or registered mail, a copy of the application to the owner of the surface of the land on which each injection or disposal well is to be located and to each leasehold operator within one-half mile of the well.

3. Administrative Approval

If the application is for administrative approval rather than for a hearing, it must also be accompanied by a copy of a legal publication published by the applicant in a newspaper of general circulation in the county in which the proposed injection well is located. (The details required in such legal notice are listed on Side 2 of Form C-108.)

No application for administrative approval may be approved until 15 days following receipt by the Division of Form C-108 complete with all attachments including evidence of mailing as required under paragraph 2 above and proof of publication as required by paragraph 3 above.

If no objection is received within said 15-day period, and a hearing is not otherwise required, the application may be approved administratively.

C. Hearings

If a written objection to any application for administrative approval of an injection well is filed within 15 days after receipt of a complete application, or if a hearing is required by these rules or deemed advisable by the Division Director, the application shall be set for hearing and notice thereof given by the Division.

D. Salt Water Disposal Wells

1. The Division Director shall have authority to grant an exception to the requirements of Rule 701-A for water disposal wells only, without notice and hearing, when the waters to be disposed of are mineralized to such a degree as to be unfit for domestic, stock, irrigation, or other general use, and when said waters are to be disposed of into a formation older than Triassic (Lee County only) which is nonproductive of oil or gas within a radius of two miles from the proposed injection well, and provided no objections are received pursuant to Rule 701-B(3).
2. Disposal will not be permitted into zones containing waters having total dissolved solids concentrations of 10,000 mg/l or less except after notice and hearing, provided however, that the Division may establish exempted aquifers for such zones wherein such injection may be approved administratively.
3. Notwithstanding the provisions of paragraph 2. above, the Division Director may authorize disposal into such zones if the waters to be disposed of are of higher quality than the native water in the disposal zone.

E. Pressure Maintenance Projects

1. Pressure maintenance projects are defined as those projects in which fluids are injected into the producing horizon in an effort to build up and/or maintain the reservoir pressure in an area which has not reached the advanced or "stripper" state of depletion.
2. All applications for establishment of pressure maintenance projects shall be set for hearing. The project area and the allowable formula for any pressure maintenance project shall be fixed by the Division on an individual basis after notice and hearing.
3. Pressure maintenance projects may be expanded and additional wells placed on injection only upon authority from the Division after notice and hearing or by administrative approval.

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for the conversion to injection of additional wells within a project area provided that any such well is necessary to develop or maintain efficient pressure maintenance within such project and provided that no objections are received pursuant to Rule 701-B(3).

F. Water Flood Projects

1. Water flood projects are defined as those projects in which water is injected into a producing horizon in sufficient quantities and under sufficient pressure to stimulate the production of oil from other wells in the area, and shall be limited to those areas in which the wells have reached an advanced state of depletion and are regarded as what is commonly referred to as "stripper" wells.
2. All applications for establishment of water flood projects shall be set for hearing.

The project area of a water flood project shall comprise the proration units owned or operated by a given operator upon which injection wells are located plus all proration units owned or operated by the same operator which directly or diagonally offset the injection tracts and have producing wells completed on them in the same formation; provided however, that additional proration units not directly nor diagonally offsetting an injection tract may be included in the project area if, after notice and hearing, it has been established that such additional units have wells completed thereon which have experienced a substantial response to water injection.

3. The allowable assigned to wells in a water flood project area shall be equal to the ability of the wells to produce and shall not be subject to the depth bracket allowable for the pool nor to the market demand percentage factor.

Nothing herein contained shall be construed as prohibiting the assignment of special allowables to wells in buffer zones after notice and hearing. Special allowables may also be assigned in the limited instances where it is established at a hearing that it is imperative for the protection of correlative rights to do so.

4. Water flood projects may be expanded and additional wells placed on injection only upon authority from the Division after notice and hearing or by administrative approval.

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for conversion to injection of additional wells provided that any such well is necessary to develop or maintain thorough and efficient waterflood injection for any authorized project and provided that no objections are received pursuant to Rule 701-B(3).

G. Storage Wells

The Division Director shall have authority to grant an exception to the hearing requirements of Rule 701-A for the underground storage of liquafied petroleum gas or liquid hydrocarbons in secure caverns within massive salt beds, and provided no objections are received pursuant to Rule 701-B(3).

In addition to the filing requirements of Rule 701-B, the applicant for approval of a storage well under this rule shall file the following:

1. With the Division Director:
 - (a) A plugging bond in accordance with the provisions of Rule 101;
2. With the appropriate district office of the Division in TRIPLICATE:
 - (a) Form C-101, Application for Permit to drill, Deepen, or Plug Back;
 - (b) Form C-102, Well Location and Acreage Dedication Plat; and
 - (c) Form C-105, Well Completion or Recompletion Report and Log.

RULE 702. CASING AND CEMENTING OF INJECTION WELLS

Wells used for injection of gas, air, water, or any other medium into any formation shall be cased with safe and adequate casing or tubing so as to prevent leakage, and such casing or tubing shall be so set and cemented as to prevent the movement of formation or injected fluid from the injection zone into any other zone or to the surface around the outside of any casing string.

RULE 703. OPERATION AND MAINTENANCE

Injection wells shall be equipped, operated, monitored, and maintained to facilitate periodic testing and to assure continued mechanical integrity which will result in no significant leak in the tubular goods and packing materials used and no significant fluid movement through vertical channels adjacent to the well bore.

Injection projects, including injection wells and producing wells and all related surface facilities shall be operated and maintained at all times in such a manner as will confine the injected fluids to the interval or intervals approved and prevent surface damage or pollution resulting from leaks, breaks, or spills.

Failure of any injection well, producing well, or surface facility, which failure may endanger underground sources of drinking water, shall be reported under the "Immediate Notification" procedure of Rule 116.

Injection well or producing well failures requiring casing repair or cementing are to be reported to the Division prior to commencement of workover operations.

Injection wells or projects which have exhibited failure to confine injected fluids to the authorized injection zone or zones may be subject to restriction of injection volume and pressure, or shut-in, until the failure has been identified and corrected.

RULE 704. TESTING AND MONITORING

A. Testing

Prior to commencement of injection, wells shall be tested to assure the initial integrity of the casing and the tubing and packer, if used, including pressure testing of the casing-tubing annulus.

At least once every five years thereafter, injection wells shall be tested to assure their continued mechanical integrity. Tests demonstrating continued mechanical integrity shall include the following:

- (a) measurement of annular pressures in wells injecting at positive pressures under a packer or a balanced-fluid seal;
- (b) pressure testing of the casing-tubing annulus for wells injecting under vacuum conditions; and,

- (c) such other tests which are demonstrably effective and which may be approved for use by the Division.

Notwithstanding the test procedures outlined above, the Division may require more comprehensive testing of the injection wells when deemed advisable, including the use of tracer surveys, noise logs, temperature logs, or other test procedures or devices.

In addition, the Division may order special tests to be conducted prior to the expiration of five years if conditions are believed to so warrant. Any such special test which demonstrates continued mechanical integrity of a well shall be considered the equivalent of an initial test for test scheduling purposes, and the regular 5-year testing schedule shall be applicable thereafter.

The injection well operator shall advise the Division of the date and time any initial, 5-year, or special tests are to be commenced in order that such tests may be witnessed.

B. Monitoring

Injection wells shall be so equipped that the injection pressure and annular pressure may be determined at the wellhead and the injected volume may be determined at least monthly.

Injection wells used for storage shall be so equipped that both injected and produced volumes may be determined at any time.

RULE 705. COMMENCEMENT, DISCONTINUANCE, AND ABANDONMENT OF INJECTION OPERATIONS

The following provisions shall apply to all injection projects, storage projects, salt water disposal wells and special purpose injection wells:

A. Notice of Commencement and Discontinuance

1. Immediately upon the commencement of injection operations in any well, the operator shall notify the Division of the date such operations began.
2. Within 30 days after permanent cessation of gas or liquefied petroleum gas storage operations or within 30 days after discontinuance of injection operations into any other well, the operator shall notify the Division of the date of such discontinuance and the reasons therefor. No injection well may be temporarily abandoned for a period exceeding six months unless the injection interval has been isolated by use of cement or a bridge plug. The Director of the Division may delay the cement or bridge plug requirements above upon a demonstration that there is a continuing need for such a well, that the well exhibits mechanical integrity, and that continued temporary abandonment will not endanger underground sources of drinking water.
3. Before any injection well is plugged, the operator shall obtain approval for the well's plugging program from the appropriate District Office of the Division in the same manner as when plugging oil and gas wells or dry holes.

B. Abandonment of Injection Operations

1. Whenever there is a continuous six-month period of non-injection into any injection project, storage project, salt water disposal well, or special purpose injection well, such project or well shall be considered abandoned, and the authority for injection shall automatically terminate ipso facto.
2. For good cause shown, the Division Director may grant an administrative extension or extensions of injection authority as an exception to Paragraph 1. above.

RULE 706. RECORDS AND REPORTS

The operator of an injection well or project for secondary or other enhanced recovery, pressure maintenance, natural gas storage, salt water disposal, or injection of any other fluids shall keep accurate records and shall report monthly to the Division gas or fluid volumes injected, stored, and/or produced as required on the appropriate form listed below:

1. Secondary or Other Enhanced Recovery on Form C-115;
2. Pressure Maintenance on Form C-115 and as otherwise prescribed by the Division;

3. Salt Water Disposal on Form C-120-A;
4. Natural Gas Storage on Form C-131-A; and
5. Injection of other fluids on a form prescribed by the Division.

The operator of a liquefied petroleum gas storage project shall report annually on Form C-131-B, Annual LPG Storage Report.

RULE 707. RECLASSIFICATION OF WELLS

The Division Director shall have authority to reclassify an injection well from any category defined in Rule 701-B to any other category without notice and hearing upon request and proper showing by the operator thereof.

RULE 708. TRANSFER OF AUTHORITY TO INJECT

Authority to inject granted under any order of the Division is not transferable except upon approval of the Division. Approval of transfer of authority to inject may be obtained by filing Form C-104 in accordance with Rule 1104(5).

The Division may require a demonstration of mechanical integrity prior to approving transfer of authority to inject.

J - OIL PURCHASING AND TRANSPORTING

RULE 801. ILLEGAL SALE PROHIBITED

The sale or purchase or acquisition, or the transporting, refining, processing, or handling in any other way, of crude petroleum oil or of any crude petroleum produced in excess of the amount allowed by any statute of this state, or by any rule, regulation, or order of the Division made thereunder, is prohibited.

RULE 802. RATABLE TAKE: COMMON PURCHASER

(a) Every person now engaged or hereafter engaging in the business of purchasing oil to be transported through pipelines shall be a common purchaser thereof, and shall without discrimination in favor of one producer as against another in the same field, purchase an oil tendered to it which has been lawfully produced in the vicinity of, or which may be reasonably reached by pipelines through which it is transporting oil, or the gathering branches thereof, or which may be delivered to the pipeline or gathering branches thereof by truck or otherwise, and shall fully perform all the duties of a common purchaser. If any common purchaser shall not have need for all such oil lawfully produced within a field, or if for any reason it shall be unable to purchase all such oil, then it shall purchase from each producer in a field ratably, taking and purchasing the same quantity of oil from each well to the extent that each well is capable of producing its ratable portions; provided, however, nothing herein contained shall be construed to require more than one pipeline connection for each producing well. In the event any such common purchaser of oil is likewise a producer or is affiliated with a producer, directly or indirectly, it is hereby expressly prohibited from discriminating in favor of its own production or in favor of the production of an affiliated producer as against that of others and the oil produced by such common purchaser, or by the affiliate of such common purchaser shall be treated as that of any other producer, for the purposes of ratable taking.

(b) It shall be unlawful for any common purchaser, to unjustly or unreasonably discriminate as to the relative quantities of oil purchased by it in various fields of the state; the question of the justice or reasonableness to be determined by the Division, taking into consideration the production and age of wells in the respective fields and all other factors. It is the intent of this rule that all fields shall be allowed to produce and market a just and equitable share of the oil produced and marketed in the State, insofar as the same can be effected economically and without waste.

(c) In order to preclude premature abandonment, the common purchaser within its purchasing area is authorized and directed to make 100 percent purchases from units of settled production producing ten (10) barrels or less daily of crude petroleum in lieu of ratable purchases or takings. Provided, however, where such purchaser's takings are curtailed below ten (10) barrels per unit of crude petroleum daily, then such purchaser is authorized and directed to purchase equally from all such units within its purchasing area, regardless of their producing ability insofar as they are capable of producing.

RULE 803. PRODUCTION OF LIQUID HYDROCARBONS FROM GAS WELLS

All liquid hydrocarbons produced incidental to the authorized production of gas from a well classified by the Division as a gas well shall, for all purposes, be legal production.

For purposes of this rule, all gas produced from a gas well shall be considered to be authorized production with the following exceptions:

- (1) When the well is being produced without an approved Form C-104, designating the gas transporter and the oil or condensate transporter for said well.
- (2) When the well has been directed to be shut in by the Division.

In the event a gas well is directed to be shut in by the Division, both the gas transporter and oil transporter named on the well's Form C-104 shall be immediately notified of such fact.

K - GAS PURCHASING AND TRANSPORTING

RULE 901. ILLEGAL SALE PROHIBITED

The sale, purchase or acquisition, or the transporting, refining, processing or handling in any other way, of natural gas in whole or in part (or of any product of natural gas so produced) produced in excess of the amount allowed by any statute of this state, or by any rule, regulation or order of the Division made thereunder, is prohibited.

RULE 902. RATABLY TAKE

(a) Any person now or hereafter engaged in purchasing from one or more producers, gas produced from gas wells shall be a common purchaser thereof within each common source of supply from which it purchases, and as such it shall purchase gas lawfully produced from gas wells with which its gas transportation facilities are connected in the pool and other gas wells with which its gas transportation facilities are connected in the pool and other gas lawfully produced within the pool and tendered to a point on its gas transportation facilities. Such purchases shall be made without unreasonable discrimination in favor of one producer against another in the price paid, the quantities purchased, the bases of measurement or the gas transportation facilities afforded for gas of like quantity, quality and pressure available from such wells. In the event any such person is likewise a producer, he is prohibited to the same extent from discriminating in favor of himself on production from gas wells in which he has an interest, direct or indirect, as against other production from gas wells in the same pool. For the purposes of this rule reasonable differences in prices paid or facilities afforded, or both, shall not constitute unreasonable discrimination if such differences bear a fair relationship to differences in quality, quantity or pressure of the gas available or to the relative lengths of time during which such gas will be available to the purchaser. The provisions of this subsection shall not apply (1) to any wells or pools used for storage and withdrawal from storage of natural gas originally produced not in violation of the rules, regulations or orders of the Division, (2) to purchases of casinghead gas from oil wells, and (3) to persons purchasing gas principally for use in the recovery or production of oil or gas.

(b) Any common purchaser taking gas produced from gas wells from a common source of supply shall take ratably under such rules, regulations and orders, concerning quantity, as may be promulgated by the Division consistent with this rule. The Division, in promulgating such rules, regulations and orders may consider the quality and the deliverability of the gas, the pressure of the gas at the point of delivery, acreage attributable to the well, market requirements in the case of unprorated pools, and other pertinent factors.

(c) Nothing in this rule shall be construed or applied to require, directly or indirectly, any person to purchase gas of a quality or under a pressure or under any other condition by reason of which such gas cannot be economically and satisfactorily used by such purchaser by means of his gas transportation facilities then in service.

L - REFINING

RULE 1001. REFINERY REPORTS

Each refiner of oil within the State of New Mexico shall furnish for each calendar month a "Refiner's Monthly Report," Form C-113, containing the information and data indicated by such form, respecting oil and products involved in such refiner's operations during each month. Such report for each month shall be prepared and filed according to instructions on the form, on or before the 15th day of the next succeeding month.

RULE 1002. GASOLINE PLANT REPORTS

Each operator of a gasoline plant, cyclying plant, or any other plant at which gasoline, butane, propane condensate, kerosene, oil, or other liquid products are extracted from natural gas within the State of New Mexico shall furnish for each calendar month a Gas Purchaser's Monthly Report, Form C-111, containing the information indicated by such form respecting natural gas and products involved in the operation of each plant during each month. (This rule shall also be applicable to plants in the State of New Mexico processing carbon dioxide gas into liquid or solid form.)

Form C-111 shall be filed in accordance with the provisions of Rule 1111.

M - REPORTS

Rule 1100. General

A. Where to File Reports

Unless otherwise specifically provided for in any rule or order of the Division, all forms and reports required by these rules shall be filed with the appropriate District Office of the Division as provided in Rules 1301 and 1302.

B. Additional Data

These rules shall not be construed to limit or restrict the authority of the Oil Conservation Division to require the furnishing of such additional reports, data, or other information relative to the production, transportation, storing, refining, processing, or handling of crude petroleum oil, natural gas, or products in the State of New Mexico as may appear to be necessary or desirable, either generally or specifically, for the prevention of waste and the conservation of natural resources of the State of New Mexico.

C. Books and Records

All producers, injectors, transporters, storers, refiners, gasoline or extraction plant operators, treating plant operators, and initial purchasers of natural gas within the State of New Mexico shall make and keep appropriate books and records for a period of not less than five years, covering their operations in New Mexico, from which they may be able to make and substantiate the reports required by these rules.

D. Written Notices, Requests, Permits and Reports

The forms listed below shall be used for the purpose shown in accordance with the instructions printed thereon and the rule covering the form, or any special rule or order pertaining to its use.

Form C-101	Application for Permit to Drill, Deepen, or Plug Back
Form C-102	Well location and Acreage Dedication Plat
Form C-103	Sundry Notices and Reports on Wells
Form C-104	Request for Allowable and Authorization to Transport Oil and Natural Gas
Form C-105	Well Completion or Recompletion Report and Log
Form C-106	Notice of Intention to Utilize Automatic Custody Transfer Equipment
Form C-107	Application for Multiple Completion
Form C-108	Application for Authorization to Inject
Form C-109	Application for Discovery Allowable and Creation of a New Pool
Form C-111	Gas Purchaser's Monthly Report (Sheet 1 and Sheet 2)
Form C-112	Transporter's and Storer's Monthly Report
Form C-113	Refiner's Monthly Report (Sheet 1 and Sheet 2)
Form C-115	Operator's Monthly Report
Form C-115-EDP	Operator's Monthly Report (electronic data processing)
Form C-116	Gas-Oil Ratio Tests
Form C-117-A	Sediment Oil Destruction Permit
Form C-117-B	Sediment Oil Recovery Permit
Form C-118	Treating Plant Operator's Monthly Report (Sheet 1 and Sheet 1-A)
Form C-119	Carbon Black Plant Monthly Report
Form C-120-A	Monthly Water Disposal Report
Form C-121	Crude Oil Purchaser's Nomination
Form C-121-A	Purchaser's Gas Nomination
Form C-122	Multi-Point and One Point Back Pressure Test for Gas Wells
Form C-122-A	Gas Well Test Data Sheet - San Juan Basin (Initial Deliverability Test, blue paper; Annual Deliverability Test, white)
Form C-122-B	Initial Potential Test Data Sheet
Form C-122-C	Deliverability Test Report
Form C-122-D	Worksheet for Calculation of Static Column Wellhead Pressure (P_s).
Form C-122-E	Worksheet for Stepwise Calculation of (Surface) (Subsurface) Pressure (P_c & P_w) (P_f & P_g)
Form C-122-F	Worksheet for Calculation of Wellhead Pressures (P_c or P_w) from Known Bottomhole Pressure (P_c or P_g)
Form C-122-G	Worksheet for Calculation of Static Column Pressure at Gas Liquid Interface
Form C-123	Request for the Extension of an Existing Pool or the Creation of a New Pool
Form C-124	Reservoir Pressure Report
Form C-125	Gas Well Shut-In Pressure Report
Form C-126	Permit to Transport Recovered Load Oil
Form C-127	Request for Allowable Change
Form C-129	Application for Exception to No-Flare Rule 306

Form C-130 Notice of Disconnection
Form C-131-A Monthly Gas Storage Report
Form C-131-B Annual LPG Storage Report

RULE 1101. APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK (Form C-101)

Before commencing drilling or deepening operations, or before plugging a well back to another zone, the operator of the well must obtain a permit to do so. To obtain such permit, the operator shall submit to the Division FIVE copies of Form C-101, Application for Permit to Drill, Deepen, or Plug Back, completely filled out. If the operator has an approved bond in accordance with Rule 101, one copy of the Drilling Permit will be returned to him on which will be noted the Division's approval, with any modification deemed advisable. If the proposal cannot be approved for any reason, the Forms C-101 will be returned with the cause for rejection stated thereon.

Form C-101 must be accompanied by THREE copies of Form C-102, Well Location and Acreage Dedication Plat. (See Rule 1102.)

If the well is to be drilled on state land, submit SIX copies of Form C-101 and FOUR copies of Form C-102, the extra copy of each form being for the State Land Office.

RULE 1102. WELL LOCATION AND ACREAGE DEDICATION PLAT (Form C-102)

Form C-102 is a dual purpose form used to show the exact location of the well and the acreage dedicated thereto. The form is also used to show the ownership and status of each lease contained within the dedicated acreage. When there is more than one working interest or royalty owner on a given lease, designation of the majority owner et al. will be sufficient.

All information required on Form C-102 shall be filled out and certified by the operator of the well except the well location on the plat. This is to be plotted from the outer boundaries of the section and certified by a registered professional engineer and/or land surveyor, registered in the State of New Mexico, or surveyor approved by the Division.

Form C-102 shall be submitted in TRIPLICATE or QUADRUPLICATE as provided in Rule 1101.

Amended Form C-102 (in TRIPLICATE or QUADRUPLICATE) shall be filed in the event there is a change in any of the information previously submitted. The well location need not be certified when filing amended Form C-102.

RULE 1103. SUNDRY NOTICES AND REPORTS ON WELLS (Form C-103)

Form C-103 is a dual purpose form to be filed with the appropriate District Office of the Division to obtain Division approval prior to commencing certain operations and also to report various completed operations.

A. Form C-103 as a Notice of Intention

Form C-103 shall be filed in TRIPLICATE by the operator and approval obtained from the Division prior to:

- (1) Effecting a change of plans from those previously approved on Form C-101 or Form C-103.
- (2) Altering a drilling well's casing program or pulling casing or otherwise altering an existing well's casing installation.
- (3) Temporarily abandoning a well.
- (4) Plugging and abandoning a well.
- (5) Performing remedial work on a well which, when completed, will affect the original status of the well. (This shall include making new perforations in existing wells or squeezing old perforations in existing wells, but is not applicable to new wells in the process of being completed nor to old wells being deepened or plugged back to another zone when such re-completion has been authorized by an approved Form C-101, Application for Permit to Drill, Deepen, or Plug Back, nor to acidizing, fracturing, or cleaning out previously completed wells, nor to installing artificial lift equipment.)

In the case of well plugging operations, the Notice of Intention shall include a detailed statement of the proposed work, including plans for shooting and pulling casing, plans for mudding, including weight of mud, plans for cementing, including number of sacks of cement and depths of plugs, and the time and date of the proposed plugging operations. If not previously filed, a complete log of the well on Form C-105 (See Rule 1105) shall accompany the Notice of Intention to plug the well; the bond will not be released until this is complied with.

B. Form C-103 as a Subsequent Report

Form C-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form C-103 is to be used in reporting such completed operations as:

- (1) Commencement of drilling operations
- (2) Casing and cement test
- (3) Altering a well's casing installation
- (4) Temporary abandonment
- (5) Plug and Abandon
- (6) Plugging back or deepening
- (7) Remedial work
- (8) Installation of artificial lifting equipment
- (9) Change in ownership of a drilling well
- (10) Such other operations which affect the original status of the well but which are not specifically covered herein.

Information to be entered on Form C-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form C-103 in TRIPLICATE. Such report shall indicate the hour and the date the well was spudded.

(2) Report of Results of Test of Casing and Cement Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in TRIPLICATE on Form C-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 107. The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in TRIPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any and status of surface and downhole equipment, and any other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form C-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other pertinent information. (See Rules 201-204 regarding plugging operations.)

No plugging report will be approved by the Division until the pits have been filled and the location levelled and cleared of junk. It shall be the responsibility of the operator to contact the appropriate District Office of the Division when the location has been so restored in order to arrange for an inspection of the plugged well and the location by a Division representative.

(5) Report of Remedial Work

A report of remedial work performed on a well shall be filed by the operator of the well within 30 days following completion of such work. Said report shall be filed in QUADRUPLICATE on Form C-103 and shall present a detailed account of the work done and the manner in which such work was performed; the daily production of oil, gas, and water both prior to and after the remedial operation; the size and depth of shots; the quantity of sand, crude, chemical or other materials employed in the operation, and any other pertinent information. Among the remedial work to be reported on Form C-103 are the following:

- (a) Report on shooting, fluid fracturing or chemical treatment of a previously completed well
- (b) Report on squeeze job
- (c) Report on setting of liner or packer
- (d) Report of installation of pumping equipment or gas lift facilities
- (e) Report of any other remedial operations which are not specifically covered herein.

(6) Report on Deepening or Plugging Back

A report of deepening or plugging back shall be filed by the operator of the well within 30 days following completion of such operations on any well. Said report shall be filed in QUADRUPLICATE on Form C-103 and shall present a detailed account of the work done and the manner in which such work was performed. If the well is recompleted in the same pool, it shall also report the daily production of oil, gas, and water both prior to and after recompletion. If the well is recompleted in another pool, Form C-104 must also be filed in accordance with Rule 1104.

(7) Report of Change in Ownership of a Drilling Well

A report of change of ownership shall be filed by the new owner of any drilling well within ten days following actual transfer of ownership. Said report shall be filed in TRIPLICATE on Form C-103 and shall include the name and address of both the new owner and the previous owner, the effective date of the change of ownership, and any other pertinent information. No change in the ownership of a drilling well will be approved by the Division unless the new owner has an approved bond in accordance with Rule 101. (Form C-104 shall be used to report transfer of ownership of a completed well; see Rule 1104.)

(8) Other Reports on Wells

Reports on any other operations which affect the original status of the well but which are not specifically covered herein shall be submitted to the Division on Form C-103, in TRIPLICATE, by the operator of the well within ten days following the completion of such operation.

RULE 1104. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS (Form C-104)

(1) Form C-104 completely filled out by the operator of the well must be filed in QUINTUPLICATE before an allowable will be assigned to any newly completed or recompleted well. (A recompleted well shall be considered one which has been deepened or plugged back to produce from a different pool than previously.) Form C-104 must be accompanied by a tabulation of all deviation tests taken on the well as provided by Rule 111.

(2) The allowable assigned to an oil well shall be effective at 7:00 o'clock a.m. on the date of completion, provided the Form C-104 is received by the Division during the month of completion. Date of completion shall be that date when new oil is delivered into the stock tanks.

Unless otherwise specified by special pool rules, the allowable assigned to a gas well shall be effective at 7:00 o'clock a.m. on the date of connection to a gas transportation facility, as evidenced by an affidavit of connection from the purchaser to the Division, or the date of receipt of Form C-104 by the Division, whichever date is later.

(3) No allowable will be assigned to any well until a standard unit for the pool in which the well is completed has been dedicated by the owner, or a non-standard unit has been approved by the Division, or a standard unit has been communitized or pooled and dedicated to the well.

(4) No allowable will be assigned to any well until all forms and reports due have been received by the Division and the well is otherwise in full compliance with these rules.

(5) Form C-104 with Sections I, II, III, and VI, completely filled out shall be filed in QUINTUPLICATE by the operator of the well in the event there is a change of ownership of any producing well, injection well, or disposal well, or a change of transporter (oil, condensate, casinghead gas, or dry gas), a change in pool designation, lease name, or well number, or any other pertinent change in condition of any such well. When filing Form C-104 for change of ownership, the new operator shall file the form in the above manner, and shall give the name and address of the previous as well as the present operator. The Form C-104 will not be approved by the Division unless the new operator has an approved bond in compliance with Rule 101.

(6) Whenever there is a temporary change in transporter and oil is to be moved from the lease by anyone other than the regular transporter authorized by an approved Form C-104, the operator shall notify the appropriate District Office of the Division in writing within three days after the oil is moved, furnishing such information as may be required by the District Office. The operator shall furnish copies of the notification to the regular transporter and to the temporary transporter. This paragraph is intended to deal primarily with authorized batch movements of oil by the operator for use as load oil, frac oil, etc.; eventual sale of this oil is governed by Rules 508 and 1126.

RULE 1105. WELL COMPLETION OR RECOMPLETION REPORT AND LOG (Form C-105)

Within 20 days following the completion or recompletion of any well, the operator shall file Form C-105 with the Division. It must be filed in QUINTUPLICATE and each copy accompanied by a summary of all special tests conducted on the well, including drill stem tests. In addition, one copy of all electrical and radio-activity logs run on the well must be filed with Form C-105. If the Form C-105 with attached log(s) and summaries is not received by the Division within the specified 20-day period, the allowable for the well will be withheld until this rule has been complied with.

In the case of a dry hole, a complete record of the well on Form C-105 with the above attachments shall accompany the notice of intention to plug the well, unless previously filed. The plugging report will not be approved nor the bond released until this rule has been complied with.

Form C-105 and accompanying attachments will not be kept confidential by the Division unless so requested in writing by the owner of the well. Upon such request, the Division will keep these data confidential for 90 days from the date of completion of the well, provided, however, that the report, log(s), and other attached data may, when pertinent, be introduced in any public hearing before the Division or its examiners or in any court of law, regardless of the request that they be kept confidential.

RULE 1106. NOTICE OF INTENTION TO UTILIZE AUTOMATIC CUSTODY TRANSFER EQUIPMENT (Form C-106)

Form C-106, when applicable, shall be filed in accordance with Rule 309-A.

RULE 1107. APPLICATION FOR MULTIPLE COMPLETION (Form C-107)

Form C-107, when applicable, shall be filed in accordance with Rule 112-A IV.

RULE 1108. APPLICATION FOR AUTHORIZATION TO INJECT (Form C-108)

Form C-108 shall be filed in accordance with Rule 701-B.

RULE 1109. APPLICATION FOR DISCOVERY ALLOWABLE AND CREATION OF A NEW POOL (Form C-109)

Form C-109, when applicable, shall be filed in accordance with Rule 509.

RULE 1110. No Rule; there is no Form C-110 at present.

RULE 1111. GAS PURCHASER'S MONTHLY REPORT (Form C-111)

Form C-111, Gas Purchaser's Monthly Report, shall be filed monthly in accordance with the rules below. It shall be postmarked on or before the 15th day of the month to report all gas taken during the preceding month. One copy shall be filed with the appropriate District Office of the Division and two copies with the Santa Fe Office of the Division. One additional copy shall also be sent to the Hobbs Office of the Division. Information on Sheet No. 2 of Form C-111 shall be itemized by pools, by operators, and by leases, in alphabetical order.

Form C-111 shall be filed each month by the operator of any gas gathering system, gas transportation system, recycling system, fuel system, gas lift system, gas drilling operation, etc. The form shall cover all natural gas, casinghead gas, and carbon dioxide gas taken into any such system during the preceding month and shall show the source of the gas and the disposition thereof.

Form C-111 shall also be filed each month by the operator of any gasoline plant, cycling plant, or other plant at which gasoline, butane, propane, kerosene, oil, or other products are extracted from gas within the State of New Mexico. The form shall cover all natural gas, casinghead gas, and carbon dioxide gas taken by any such plant during the preceding month and shall show the source of the gas and the disposition thereof. If a plant operator owns more than one plant in a given Division District, Sheet No. 1 of Form C-111 shall be filed for each such plant. In preparing Sheet No. 2, the plant operator shall consolidate all acquisitions for all plants in the District, itemized in the order described in the first paragraph of this rule.

Where gas is taken by the producer and utilized by him for any of the above uses, the producer shall file Form C-111 itemizing such gas. The producer shall also include this gas on his Operator's Monthly Report, Form C-115. Gas used on the lease from which it was produced for consumption in lease houses, treaters, compressors, combustion engines, and other similar equipment, or gas which is flared, shall also be included on the Form C-115 but is not to be included on the Form C-111.

RULE 1112. TRANSPORTER'S AND STORER'S MONTHLY REPORT (Form C-112)

Each transporter and each storer of crude petroleum oil and liquid hydrocarbons within the State of New Mexico shall file for each calendar month a Transporter's and Storer's Monthly Report, Form C-112, containing complete information and data indicated by such form respecting stocks of crude petroleum oil and liquid hydrocarbons on hand and receipts and deliveries of crude petroleum oil and liquid hydrocarbons by pipeline and trucks within the State of New Mexico, and receipts and deliveries from leases to storers or refiners; between transporters within the State; between storers and refiners within the State. Form C-112 shall be filed in DUPLICATE and postmarked on or before the 15th day of the next succeeding month.

RULE 1113. REFINER'S MONTHLY REPORT (Form C-113)

Every refiner of crude petroleum oil within the State of New Mexico shall furnish for each calendar month a Refiner's Monthly Report, Form C-113, containing the information and data indicated by such form respecting crude petroleum oil and products involved in such refiner's operation during each month. Such report for each month shall be filed in DUPLICATE and be postmarked on or before the 15th day of the next succeeding month.

RULE 1114. No Rule; there is no Form C-114 at present.

RULE 1115. OPERATOR'S MONTHLY REPORT (Form C-115)

Operator's Monthly Report, Form C-115 or Form C-115-EDP, shall be filed on each producing lease and each secondary or other enhanced recovery project or pressure maintenance project injection well within the State of New Mexico for each calendar month, setting forth complete information and data indicated on said forms in the order, format, and style prescribed by the Division Director. Oil production from wells which are producing into common storage shall be estimated as accurately as possible on the basis of periodic tests.

The reports on this form shall be filed by the producer as follows:

Original to the Oil Conservation Division at Santa Fe; one copy to the District Office of the Division in which district the lease is located; and one copy to each transporter involved. Each report for each month shall be postmarked not later than the 24th day of next succeeding month. Failure of an operator to file this report in accordance with the provisions of this rule may result in cancellation of Form C-104 for the affected well or wells and/or cancellation of authority to inject.

RULE 1116. GAS-OIL RATIO TESTS (Form C-116)

Gas-oil ratio tests shall be made and reported on Form C-116 as prescribed in Rule 301, Gas-Oil Ratio Tests, and any applicable special pool rules. This form shall be submitted in DUPLICATE.

RULE 1117. SEDIMENT OIL DISPOSITION PERMITS (Form C-117-A and Form C-117-B)

(a) Form C-117-A, Sediment Oil Destruction Permit, shall be submitted to the appropriate District Office of the Division in TRIPLICATE and in accordance with Rule 311 (b).

(b) Form C-117-B, Sediment Oil Recovery Permit, shall be submitted to the appropriate District Office of the Division in QUADRUPLICATE and in accordance with Rule 311 (c).

RULE 1118. TREATING PLANT OPERATOR'S MONTHLY REPORT (Form C-118)

Form C-118 shall be submitted in DUPLICATE in accordance with Rule 312, and shall contain all the information required thereon. Column 1 of Sheet 1-A of Form C-118 entitled "Permit Number," has reference to the Sediment Oil Recovery Permit, Form C-117-B, for each lot of oil picked up for processing.

RULE 1119. CARBON BLACK PLANT MONTHLY REPORT (Form C-119)

Each operator of a carbon black plant within the State of New Mexico shall file for each calendar month the monthly volume of gas received by him from a gasoline extraction plant or plants, and a monthly volume or volumes of gas received by him from each lease operator delivering natural gas directly to such plant, together with the opening and closing stocks and the production and deliveries by grades of carbon black or other products produced. Such reports shall be filed in DUPLICATE on Form C-119, Carbon Black Plant Monthly Report, and be postmarked on or before the 15th day of the next succeeding month. In addition, Form C-111 shall be filed each month in accordance with Rule 1111 if the Carbon Black Plant operator makes any purchase directly from a lease or operates any gas gathering or transmission system.

RULE 1120. MONTHLY WATER DISPOSAL REPORT (Form C-120-A)

Each operator of a salt water disposal system shall report such operations on Form C-120-A. Form C-120-A shall be filed in DUPLICATE (one copy with the Santa Fe Office and one copy with the appropriate district office) and shall be postmarked not later than the 15th day of the second succeeding month.

RULE 1121. PURCHASER'S NOMINATION FORMS (Form C-121 and Form C-121-A)

Unless requested otherwise by the Division Director, one copy of Form C-121, Crude Oil Purchaser's Nomination, shall be submitted to the Santa Fe Office of the Division not later than the 20th day of each odd-numbered month. Nominations shall be filed by each person expecting to purchase oil from producing wells in New Mexico during the second and third succeeding two months. As an example, nominations submitted by the 20th day of July shall indicate the amount of oil the purchaser desires to purchase daily during September and October.

One copy of Form C-121-A, Purchaser's Gas Nomination, shall be submitted to the Santa Fe Office of the Division by the first day of the month during which the Division will consider at the gas allowable hearing the nominations for the purchase of gas from producing wells in New Mexico during the succeeding month. As an example, purchaser's nominations to take gas from a pool during the month of August would be considered by the Division at a hearing during July, and should be submitted to the Santa Fe office of the Division by July 1.

In addition to the monthly gas nominations, twelve-months nominations shall be filed in accordance with the appropriate pool rules.

RULE 1122. MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL (Form C-122)

GAS WELL TEST DATA SHEET - SAN JUAN BASIN (Form C-122-A)

INITIAL POTENTIAL TEST DATA SHEET (Form C-122-B)

DELIVERABILITY TEST REPORT (Form C-122-C)

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w) (Form C-122-D)

WORKSHEET FOR STEPWISE CALCULATION OF (SURFACE) (SUBSURFACE) PRESSURE (P_c & P_w) (P_f & P_s) (Form C-122-E)

WORKSHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w) FROM KNOWN BOTTOM-HOLE PRESSURE (P_f or P_s) (Form C-122-F)

WORKSHEET FOR CALCULATION OF STATIC COLUMN PRESSURE AT GAS LIQUID INTERFACE (Form C-122-G)

The above forms shall be submitted to the appropriate district office of the Division in accordance with the provisions of the "Manual for Back-Pressure Testing of Natural Gas Wells," Rule 401 of the Division Rules and Regulations, and applicable special pool rules and proration orders. These forms shall be submitted in DUPLICATE except Form C-122-A which shall be submitted in TRIPLICATE.

RULE 1123. REQUEST FOR THE EXTENSION OF AN EXISTING POOL OR THE CREATION OF A NEW POOL (Form C-123)

The operator of a well which requires the creation or extension of a pool shall be given written instructions by the appropriate district office regarding the filing of Form C-123 in DUPLICATE.

RULE 1124. RESERVOIR PRESSURE REPORT (Form C-124)

Form C-124 shall be submitted in TRIPLICATE and shall be used to report bottom-hole pressures as required under the provisions of Rule 302 and any applicable special pool rules.

RULE 1125. GAS WELL SHUT-IN PRESSURE TESTS (Form C-125)

Form C-125 shall be submitted in TRIPLICATE and shall be used to report shut-in pressure tests on gas wells as required under the provisions of Rule 402 and any applicable special pool rules.

RULE 1126. PERMIT TO TRANSPORT RECOVERED LOAD OIL (Form C-126)

Form C-126 shall be submitted in QUADRUPPLICATE to the appropriate District Office of the Division and shall be used in conformance with Rule 508 and Rule 1104 (6).

RULE 1127. REQUEST FOR ALLOWABLE CHANGE (Form C-127)

One copy of Form C-127 shall be filed by the oil producer with the appropriate District Office of the Division not later than the 10th day of the month preceding the month for which oil well allowable changes are requested.

RULE 1128. FORMS REQUIRED ON FEDERAL LAND

Federal forms shall be used in lieu of State forms when filing APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK and SUNDRY NOTICES AND REPORTS ON WELLS AND WELL COMPLETION OR RECOMPLETION REPORT AND LOG for wells on Federal lands in New Mexico. However, it shall be the duty of the operator to submit two extra copies of each of such forms to the USGS, which, upon approval, will transmit same to the Division. The following USGS forms will be used in lieu of Division forms by operators of wells on Federal land:

<u>USGS Form No.</u>	<u>Title of Form</u> (Same for both agencies)	<u>Form No.</u>
9-331C (May 1963)	APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK	C-101
9-331 (May 1963)	SUNDRY NOTICES AND REPORTS ON WELLS	C-103
9-330 (Rev. 5-63)	WELL COMPLETION OR RECOMPLETION REPORT AND LOG	C-105

The above forms as may be revised are the only forms that may be submitted in place of Division forms.

After a well is completed and ready for pipeline connection, Division Form C-104 shall be filed with the Division on any and all wells drilled in the State, regardless of land status. Further, all reports and forms

as required under the preceding rules of this section of the Rules and Regulations that pertain to production must be filed on the proper Oil Conservation Division form as set out in said rule - no other forms will be accepted.

Failure to comply with the provisions of this rule will result in the cancellation of Form C-104 for the affected well or wells.

RULE 1129. APPLICATION FOR EXCEPTION TO NO-FLARE RULE 306 (Form C-129)

Form C-129, when applicable, shall be filed in accordance with Rule 306.

RULE 1130. NOTICE OF DISCONNECTION (Form C-130)

(1) Form C-130, Notice of Disconnection, shall be filed in triplicate with the Division by the operator of the well as provided in Rule 407.

(2) The operator shall state, to the best of his knowledge, the reasons for disconnecting any gas well from gas transportation facilities.

(3) The Division shall furnish the New Mexico Public Service Commission with any Form C-130 indicating that a disconnected gas well may or will be reconnected to a gas transportation facility for ultimate distribution to consumers outside of the State of New Mexico.

**RULE 1131. MONTHLY GAS STORAGE REPORT (Form C-131-A)
ANNUAL LPG STORAGE REPORT (Form C-131-B)**

Each operator of an underground natural gas storage project shall report its operation monthly on Form C-131-A. Form C-131-A shall be filed in duplicate (one copy to the appropriate district office) and shall be postmarked not later than the 24th day of the next succeeding month.

Each operator of an underground liquefied petroleum gas storage project approved by the Division shall report its operation annually on Form C-131-B.

N - RULES ON PROCEDURE

RULE 1201. NECESSITY FOR HEARING

Except as provided in some general rule herein, before any rule, regulation or order, including re-vocation, changes, renewal or extension thereof, shall be made by the Division, a public hearing before the Commission or a legally appointed Division Examiner shall be held at such time and place as may be prescribed by the Division.

RULE 1202. EMERGENCY ORDERS

Notwithstanding any other provision of these rules, in case an emergency is found to exist by the Division, which, in its judgment, requires the making of a rule, regulation, or order without a hearing having first been had or concluded, such emergency rule, regulation, or order when made by the Division shall have the same validity as if a hearing with respect to the same had been held before the Division after due notice. Such emergency rule, regulation, or order shall remain in force no longer than 15 days from its effective date, and in any event, it shall expire when the rule, regulation, or order made after due notice and hearing with respect to the subject matter of such emergency rule, regulation, or order becomes effective.

RULE 1203. METHOD OF INITIATING A HEARING

The Division upon its own motion, the Attorney General on behalf of the State, and any operator or producer, or any other person having a property interest may institute proceedings for a hearing. If the hearing is sought by the Division it shall be on motion of the Division and if by any other person it shall be by application. The application shall be in triplicate and shall state (1) the name of the applicant, (2) the name or general description of the common source or sources of supply or the area affected by the order sought, (3) briefly the general nature of the order, rule, or regulation sought, and (4) any other matter required by a particular rule or rules, or order of the Division. The application shall be signed by the person seeking the hearing or by his attorney.

When conditions are such as to require verbal application to place a matter for hearing on a given docket, the Division will accept such verbal application in order to meet publishing deadlines. However, if written application, filed in accordance with the procedures outlined above, has not been received by the Division's Santa Fe office at least ten days before the date of the hearing, the case will be dismissed.

RULE 1204. METHOD OF GIVING LEGAL NOTICE FOR HEARING

Notice of each hearing before the Commission and notice of each hearing before a Division Examiner shall be given by personal service on the person affected or by publication once in a newspaper of general circulation published at Santa Fe, New Mexico, and once in a newspaper of general circulation published in the county or each of the counties, if there be more than one, in which any land, oil, or gas, or other property which may be affected is situated.

RULE 1205. CONTENTS OF NOTICE OF HEARING

Such notice shall be issued in the name of "The State of New Mexico" and shall be signed by the Director of the Division, and the seal of the Commission shall be impressed thereon.

The notice shall specify whether the case is set for hearing before the Commission or before a Division Examiner and shall state the number and style of the case and the time and place of hearing and shall briefly state the general nature of the order or orders, rule or rules, regulation or regulations to be promulgated or effected. The notice shall also state the name of the petitioner or applicant, if any, and unless the contemplated order, rule, or regulation is intended to apply to and affect the entire state, it shall specify or generally describe the common source or sources of supply which may be affected by such order, rule, or regulation.

RULE 1206. PERSONAL SERVICE OF NOTICE

Personal service of the notice of hearing may be made by any agent of the Division or by any person over the age of 18 years in the same manner as is provided by law for the service of summons in civil actions in the district courts of this state. Such service shall be complete at the time of such personal service or on the date of publication, as the case may be. Proof of service shall be by the affidavit of the person making personal service or of the publisher of the newspaper in which publication is had. Service of the notice shall be made at least 10 days before the hearing.

RULE 1207. PREPARATION OF NOTICES

After a motion or application is filed with the Division the notice or notices required shall be prepared by the Division and service and publication thereof shall be taken care of by the Division without cost to the applicant.

RULE 1208. FILING PLEADINGS: COPY DELIVERED TO ADVERSE PARTY OR PARTIES

When any party to a hearing files any pleading, plea, or motion of any character (other than application for hearing) which is not by law or by these rules required to be served upon the adverse party or parties, he shall at the same time either deliver or mail to the adverse party or parties who have entered their appearance therein, or their respective attorneys of record, a copy of such pleading, plea, or motion. For the purposes of these rules, an appearance of any interested party shall be made either by letter addressed to the Division or in person at any proceeding before the Commission or before an Examiner, with notice of such appearance to the parties from whom such pleadings, pleas, or motions are desired.

RULE 1209. CONTINUANCE OF HEARING WITHOUT NEW SERVICE

Any hearing before the Commission or an Examiner held after due notice may be continued by the person presiding at such hearing to a specified time and place without the necessity of notice of the same being again served or published. In the event of any continuance, a statement thereof shall be made in the record of the hearing which is continued.

RULE 1210. CONDUCT OF HEARINGS

Hearings before the Commission or Examiner shall be conducted without rigid formality. A transcript of testimony shall be taken and preserved as a part of the permanent record of the Division. Any person testifying in response to a subpoena issued by the Commission or any member thereof, or the authorized representative of the Division Director, and any person seeking to testify in support of an application or motion or in opposition thereto shall be required to do so under oath. However, relevant unsworn comments and observations by any interested party will be designated as such and included in the record. Comments and observations by representatives of operators' committees, the United States Geological Survey, the United States Bureau of Mines, the New Mexico Bureau of Mines, and other competent persons are welcomed. Any Examiner legally appointed by the Division Director may conduct such hearings as may be referred to such Examiner by the Director.

RULE 1211. POWER TO REQUIRE ATTENDANCE OF WITNESSES AND PRODUCTION OF EVIDENCE

The Commission or any member thereof, or the authorized representative of the Division Director has statutory power to subpoena witnesses and to require the production of books, papers, and records in any proceeding before the Commission or Division. A subpoena will be issued for attendance at a hearing upon the written request of any person interested in the subject matter of the hearing. In case of the failure of a person to comply with the subpoena issued, an attachment of the person may be issued by the district court of any district in the state, and such court has powers to punish for contempt. Any person found guilty of swearing falsely at any hearing may be punished for contempt.

RULE 1212. RULES OF EVIDENCE

Full opportunity shall be afforded all interested parties at a hearing to present evidence and to cross-examine witnesses. In general, the rules of evidence applicable in a trial before a court without a jury shall be applicable, provided that such rules may be relaxed, where, by so doing, the ends of justice will be better served. No order shall be made which is not supported by competent legal evidence.

RULE 1213. EXAMINERS' QUALIFICATIONS AND APPOINTMENT

The Division Director shall, by ex parte order, designate and appoint not more than four individuals to be examiners. Each Examiner so appointed shall be a member of the staff of the Division, but no Examiner need be a full time employee of the Division. The Director may, by ex parte order, designate and appoint a successor to any person whose status as an Examiner is terminated for any reason. Each individual designated and appointed as an Examiner must have at least six years practical experience as a geologist, petroleum engineer or licensed lawyer, or at least two years of such experience and a college degree in geology, engineering, or law; provided however, that nothing herein contained shall prevent any member of the Commission from being designated as, or serving as, an Examiner.

RULE 1214. REFERRAL OF CASES TO EXAMINERS

The Division Director may refer any matter or proceeding to any legally designated and appointed Examiner for hearing in accordance with these rules. The Examiner appointed to hear any specific case shall be designated by name.

RULE 1215. EXAMINER'S POWER AND AUTHORITY

The Division Director may, by ex parte order, limit the powers and duties of the Examiner in any particular case to such issues or to the performance of such acts as the Director deems expedient; however, subject only to such limitations as may be ordered by the Director, the Examiner to whom any matter or proceedings is referred under these rules shall have full authority to hold hearings on such matter or

proceeding in accordance with and pursuant to these rules. The Examiner shall have the power to regulate all proceedings before him and to perform all acts and take all measures necessary or proper for the efficient and orderly conduct of such hearing, including the swearing of witnesses, receiving of testimony and exhibits offered in evidence subject to such objections as may be imposed, and shall cause a complete record of the proceedings to be made and transcribed and shall certify same to the Director as hereinafter provided.

RULE 1216. HEARINGS WHICH MUST BE HELD BEFORE COMMISSION

Notwithstanding any other provisions of these rules, the hearing on any matter shall be held before the Commission (1) if it is a hearing de novo, or (2) if the Division Director in his discretion desires the Commission to hear the matter.

RULE 1217. EXAMINER'S MANNER OF CONDUCTING HEARING

An Examiner conducting a hearing under these rules shall conduct himself as a disinterested umpire.

RULE 1218. REPORT AND RECOMMENDATIONS, EXAMINER'S HEARINGS

Upon the conclusion of any hearing before an Examiner, the Examiner shall promptly consider the proceedings in such hearing, and based upon the record of such hearing the Examiner shall prepare his written report and recommendations for the disposition of the matter of proceeding by the Division. Such report and recommendations shall either be accompanied by a proposed order or shall be in the form of a proposed order, and shall be submitted to the Division Director with the certified record of the hearing.

RULE 1219. DISPOSITION OF CASES HEARD BY EXAMINERS

After receipt of the report and recommendations of the Examiner, the Division Director shall enter the Division's order disposing of the matter or proceeding.

RULE 1220. DE NOVO HEARING BEFORE COMMISSION

When any order has been entered by the Division pursuant to any hearing held by an Examiner, any party adversely affected by such order shall have the right to have such matter or proceeding heard de novo before the Commission, provided that within 30 days from the date such order is rendered such party files with the Division a written application for such hearing before the Commission. If such application is filed, the matter or proceeding shall be set for hearing before the Commission at the first available hearing date following the expiration of fifteen days from the date such application is filed with the Division. Any person affected by the order or decision rendered by the Commission after hearing before the Commission may apply for rehearing pursuant to and in accordance with the provisions of Rule 1222 and said Rule 1222 together with the law applicable to rehearing and appeals in matters and proceedings before the Commission shall thereafter apply to such matter or proceeding.

RULE 1221. NOTICE OF COMMISSION AND DIVISION ORDERS

Within ten days after any order, including any order granting or refusing rehearing, or order following rehearing, has been rendered, a copy of such order shall be mailed by the Division to each person or his attorney of record who has entered his appearance of record in the matter of proceeding pursuant to which such order is rendered.

RULE 1222. REHEARINGS

Within 20 days after entry of any order or decision of the Commission any person affected thereby may file with the Division an application for rehearing in respect of any matter determined by such order or decision, setting forth the respect in which such order or decision is believed to be erroneous. The Commission shall grant or refuse any such application in whole or in part within 10 days after the same is filed and failure to act thereon within such period shall be deemed a refusal thereof and a final disposition of such application. In the event the rehearing is granted, the Commission may enter such new order or decision after rehearing as may be required under the circumstances.

RULE 1223. CHANGES IN FORMS AND REPORTS

Any change in the forms and reports or rules relating to such forms and reports shall be made only by order of the Commission or Division issued after due notice and hearing.

O -RULES ON ADMINISTRATION

RULE 1301. DISTRICT OFFICES

To expedite administration of the work of the Oil Conservation Division of the New Mexico Energy and Minerals Department and the enforcement of its rules and regulations, the state shall be divided into four districts as follows:

DISTRICT 1 Lea, Roosevelt, and Curry Counties, and that portion of Chaves County lying east of the North-South line dividing Ranges 29 and 30 East, NMPM.

Office at 1000 West Broadway, Hobbs.

Mailing Address:

Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

DISTRICT 2 Eddy, Otero, Dona Ana, Luna, Hidalgo, Grant, Sierra, Lincoln, and De Baca Counties, and that portion of Chaves County lying west of the North-South line dividing Ranges 29 and 30 East, NMPM.

Office at 10th and Dallas Streets, Artesia.

Mailing Address:

Oil Conservation Division
Drawer DD
Artesia, New Mexico 88210

DISTRICT 3 San Juan, Rio Arriba, McKinley, and Sandoval Counties.

Office at 1000 Rio Brazos Road, Aztec.

Mailing Address:

Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

DISTRICT 4 Remainder of State.

Office in State Land Office Building, Santa Fe.

Mailing Address:

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

Each district office shall be under the charge of a district supervisor, an oil and gas inspector, or a deputy oil and gas inspector. Unless otherwise specifically required, all matters pertaining to the Division shall be taken care of through the district office of the district in which the affected land is located.

RULE 1302. WHERE TO FILE REPORTS AND FORMS

All reports and forms required by the rules to be filed with the Division shall be filed in the number and at the time specified on the form or report or by the applicable rule in Section M, Reports, of these rules. Unless otherwise specified, all such reports and forms shall be filed at the district office of the district in which the land that is the subject matter of the report is located. All plugging bonds shall be filed directly with the Santa Fe Office of the Division. A list of all plugging bonds approved and in force shall be kept in each district office.

RULE 1303. DUTIES AND AUTHORITY OF FIELD PERSONNEL

Oil and gas inspectors, deputy oil and gas inspectors, scouts, engineers and geologists duly appointed by the Division have the authority and duty to enforce the rules and regulations of the Division. Only oil and gas inspectors and their deputies shall have discretion to allow minor deviations from requirements of the rules as to field practices where, by so doing, waste will be prevented or burdensome delay or expenses on the part of the operator will be avoided.

RULE 1304. NUMBERING OF DIVISION ORDERS

All orders of the Division made after January 1, 1950, pertaining to the allocation of production of oil and gas are prefixed with the letter "A" and are numbered consecutively, commencing with the number 1, i.e., the first allocation order issued after January 1, 1950, is No. A-1, the next A-2, etc.

All other orders of the Division made after January 1, 1950, are prefixed with the letter "R" and are numbered consecutively, commencing with the number 1, i.e., the first such order issued after January 1, 1950, is No. R-1, the next R-2, etc.

NEW MEXICO STATUTES ANNOTATED

1978 COMPILATION

(1953 COMPILATION REFERENCED FOR CONVENIENCE)

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70-2-2	65-3-2	Waste prohibited.
70-2-3	65-3-3	Waste - Definitions.
70-2-4	65-3-4	Oil conservation commission - Members - State petroleum engineer - Term - Officers - Quorum - Power to administer oaths.
70-2-5	65-3-4.1	Oil conservation division - Director - State petroleum engineer.
70-2-6	65-3-5	Commission's and division's powers and duties.
70-2-7	65-3-6	Rules of procedure in hearings - Manner of giving notice - Record of Rules, Regulations and Orders.
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70-2-10	65-3-9	Perjury - Punishment.
70-2-11	65-3-10	Power to commission and division to prevent waste and protect correlative rights.
70-2-12	65-3-11	Enumeration of Powers.
70-2-13	65-3-11.1	Additional powers of Commission or Division - Hearings before examiners - Hearings de novo.
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70-2-1 SHORT TITLE.--Sections 70-2-1 through 70-2-34 and 70-2-35 and 70-2-36 NMSA 1978 may be cited as the "Oil and Gas Act".

70-2-2 WASTE PROHIBITED.

The production or handling of crude petroleum oil or natural gas of any type or in any form, or the handling of products thereof, in such manner or under such conditions or in such amounts as to constitute or result in waste is each hereby prohibited.

70-2-3 WASTE - DEFINITIONS.

As used in this act, the term "waste," in addition to its ordinary meaning, shall include:

A. "underground waste" as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper, use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas.

B. "Surface Waste" as those words are generally understood in the oil and gas business, and in any event to embrace the unnecessary or excessive surface loss or destruction without beneficial use, however caused, of natural gas or any type or in any form or crude petroleum oil, or any product thereof, but including the loss or destruction, without beneficial use, resulting from evaporation, seepage, leakage, or fire, especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating, or producing, well or wells, or incident to or resulting from the use of inefficient storage or from the production of crude petroleum oil or natural gas in excess of the reasonable market demand.

C. The production of crude petroleum oil in this state in excess of the reasonable market demand for such crude petroleum oil. Such excess production causes or results in waste which is prohibited by this act. The words "reasonable market demand," as used herein with respect to crude petroleum oil, shall be construed to mean the demand for such crude petroleum oil for reasonable current requirements for current consumption and use within or outside the state, together with the demand for such amounts as are reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil or the products thereof, or both such crude petroleum oil and products.

D. The non-ratable purchase or taking of crude petroleum oil in this state. Such non-ratable taking and purchasing causes or results in waste, as defined in the subsections (a), (b), (c) of this section and causes waste by violating Section 12 (70-2-16) of this act.

E. The production in this state of natural gas from any gas well or wells, or from any pool, in excess of the reasonable market demand from such source for natural gas of the type produced or in excess of the capacity of gas transportation facilities for such type of natural gas. The words "reasonable market demand," as used herein with respect to natural gas, shall be construed to mean the demand for natural gas for reasonable current requirements, for current consumption and for use within or outside the state, together with the demand for such amounts as are necessary for building up or maintaining reasonable storage reserves of natural gas or products thereof, or both such natural gas and products.

F. Drilling or producing operations for oil or gas within any area containing commercial deposits of potash where such operations would have the effect unduly to reduce the total quantity of such commercial deposits of potash which may reasonably be recovered in commercial quantities or where such operations would interfere unduly with the orderly commercial development of such potash deposits.

70-2-4 OIL CONSERVATION COMMISSION--MEMBERS--TERM--OFFICERS--QUORUM--POWER TO ADMINISTER OATHS.--There is hereby created an oil conservation commission, hereinafter in this act called the "commission" to be composed of the commissioner of public lands, the state geologist and the director of the oil conservation division. No salary or compensation shall be paid any member of the commission for his services as a member thereof. The term of office of each member of the commission shall be concurrent with the other office held by him. The commission shall organize by electing a chairman from its membership. Two members of the commission shall constitute a quorum for all purposes. The commission shall adopt a seal and such a seal affixed to any paper signed by the director of the oil conservation division shall be prima facie evidence of the due execution thereof. The attorney general shall be the attorney for the commission. Any member of the commission, or the director of the oil conservation division, or any employee of the commission or division, shall have power to administer oaths to any witness in any hearing, investigation or proceeding contemplated by this act or by any other law of this state relating to the conservation of oil and gas.

70-2-5 OIL CONSERVATION DIVISION--DIRECTOR--STATE PETROLEUM ENGINEER.--

A. The director of the oil conservation division shall be known as the state petroleum engineer.

B. The director shall be appointed by the secretary of the energy and minerals department and shall:

(1) be a resident of this state; and

(2) be registered by the state board of registration for professional engineers and land surveyors as a petroleum engineer; or

(3) by virtue of education and experience have expertise in the field of petroleum engineering.

70-2-6 COMMISSION'S AND DIVISION'S POWERS AND DUTIES.--

A. The division shall have, and is hereby given, jurisdiction and authority over all matters relating to the conservation of oil and gas and the prevention of waste of potash as a result of oil or gas operations in this state. It shall have jurisdiction, authority and control of and over all persons, matters or things necessary or proper to enforce effectively the provisions of this act or any other law of this state relating to the conservation of oil or gas and the prevention of waste of potash as a result of oil or gas operations.

B. The commission shall have concurrent jurisdiction and authority with the division to the extent necessary for the commission to perform its duties as required by law.

70-2-7 RULES OF PROCEDURE IN HEARING--MANNER OF GIVING NOTICE--RECORD OF RULES, REGULATIONS AND ORDERS.--

The division shall prescribe its rules of order or procedure in hearing or other proceedings before it under this act. Any notice required to be given under this act or under any rule, regulation or order prescribed by the commission or division shall be personal service on the person affected, or by publication once in a newspaper of general circulation published at Santa Fe, New Mexico, and once in a newspaper of general circulation published in the county, or each of the counties if there be more than one, in which any land, oil or gas or other property which may be affected shall be situated. Such notice shall issue in the name of "the State of New Mexico" and shall be signed by the director of the division, and the seal of the commission shall be impressed thereon, and it shall specify the number and style of the case, and the time and place of hearing, shall briefly state the general nature of the order or orders, rule or rules, or regulation or regulations contemplated by the division on its own motion or sought in a proceeding brought before the commission or division, the name of the petitioner, or applicant, and, unless the order, rule or regulation is intended to apply to and affect the entire state, it shall specify or generally describe the common source or sources of supply that may be affected by such order, rule or regulation. Personal service thereof may be made by any agent of the division or by any person over the age of eighteen years, in the same manner as is provided by law for the service of summons in civil actions in the district courts of this state. Such service shall be complete at the time of such personal service or on the date of such publication, as the case may be. Proof of service shall be the affidavit of the person making personal service, or of the publisher of the newspaper in which publication is had, as the case may be. All rules, regulations and orders made by the commission or division shall be entered in full by the director thereof in a book to be kept for such purpose by the division, which shall be a public record and open to inspection at all times during reasonable office hours. A copy of any such rule, regulation or order, certified by the director of the division under the seal of the commission, shall be received in evidence in all courts of the state with the same effect as the original.

70-2-8 SUBPOENA POWER--IMMUNITY OF NATURAL PERSONS REQUIRED TO TESTIFY.--

The commission, or any member thereof, or the director of the division or his authorized representative, is hereby empowered to subpoena witnesses, to require their attendance and giving of testimony before it, and to require the production of books, papers and records in any proceeding before the commission or the division. No person shall be excused from attending and testifying or from producing books, papers and records before the commission or the division, or from obedience to the subpoena of the said commission or division, whether such subpoena be signed or issued by one or more of the members of the said commission, or the director of the division, in any hearing, investigation or proceeding held by or before the said commission or division or in any cause or proceeding in any court by or against the said commission or division, relative to matters within the jurisdiction of said commission or division, on the ground or for the reason that the testimony or evidence, documentary or otherwise, required of him may tend to incriminate him or subject him to a penalty or forfeiture; provided that nothing herein contained shall be construed as requiring any person to produce any books, papers or records, or to testify in response to any inquiry, not pertinent to some question lawfully before such commission or division or court of determination. No natural person shall be subjected to criminal prosecution, or to any penalty or forfeiture for or on account of any transaction, matter or thing concerning which he may be required to testify, or produce evidence, documentary or otherwise before said commission or division, or in obedience to its subpoena, or in any cause or proceeding, provided, that no person testifying shall be exempted from prosecution and punishment for perjury committed in so testifying.

70-2-9 FAILURE OR REFUSAL TO COMPLY WITH SUBPOENA--REFUSAL TO TESTIFY--BODY ATTACHMENT--CONTEMPT.--

In case of failure or refusal on the part of any person to comply with any subpoena issued by said commission or any member thereof, or the director of the division or his authorized representative, or on the refusal of any witness to testify or answer as to any matters regarding which he may be lawfully interrogated, any district court in this state, or any judge thereof, on application of said commission or division, may issue an attachment for such person and compel him to comply with such subpoena and to attend before the commission or division and produce such documents, and give his testimony upon such matters as may be lawfully

required, and such court or judge shall have the power to punish for contempt as in case of disobedience of a like subpoena issued by or from such court, or a refusal to testify therein.

70-2-10 PERJURY--PUNISHMENT.--If any person of whom an oath shall be required under the provisions of this act, or by any rule, regulation or order of the commission or division, shall willfully swear falsely in regard to any matter or thing respecting which such oath is required, or shall willfully make any false report or affidavit required or authorized by the provisions of this act, or by any rule, regulation or order of the commission or division, such person shall be deemed guilty of perjury and shall be punished by imprisonment in the state penitentiary for not more than five years nor less than six months.

70-2-11 POWER OF COMMISSION AND DIVISION TO PREVENT WASTE AND PROTECT CORRELATIVE RIGHTS.--

A. The division is hereby empowered, and it is its duty, to prevent waste prohibited by this act and to protect correlative rights, as in this act provided. To that end, the division is empowered to make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereof.

B. The commission shall have concurrent jurisdiction and authority with the division to the extent necessary for the commission to perform its duties as required by law.

70-2-12 ENUMERATION OF POWERS.--

A. Included in the power given to the division is the authority to collect data; to make investigation and inspections; to examine properties, leases, papers, books and records; to examine, check, test and gauge oil and gas wells, and tanks, plants, refineries, and all means and modes of transportation and equipment; to hold hearings; to provide for the keeping of records and the making of reports and for the checking of the accuracy thereof; to limit and prorate production of crude petroleum oil or natural gas, or both, as in this act provided; to require either generally or in particular areas certificates of clearance or tenders in connection with the transportation of crude petroleum oil or natural gas or any products thereof, or both such oil and products, or both such natural gas and products.

B. Apart from any authority, express or implied, elsewhere given to or existing in the division by virtue of this act or the statutes of this state, the division is hereby authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated herein, viz.:

(1) to require dry or abandoned wells to be plugged in such a way as to confine the crude petroleum oil, natural gas, or water in the strata in which they are found, and to prevent them from escaping into other strata; the division shall require a corporate surety bond in a sum not to exceed fifty thousand dollars (\$50,000) conditioned for the performance of such regulations;

(2) to prevent crude petroleum oil, natural gas, or water from escaping from strata in which they are found into another stratum or other strata;

(3) to require reports showing locations of all oil or gas wells, and for the filing of logs and drilling records or reports;

(4) to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas, or both oil and gas, in paying quantities, and to prevent the premature and irregular encroachment of water, or any other kind of water encroachment, which reduced or tends to reduce the total ultimate recovery of crude petroleum oil or gas, or both such oil and gas, from any pool;

(5) to prevent fires;

(6) to prevent "blow-outs" and "caving" in the sense that the conditions indicated by such terms are generally understood in the oil and gas business;

(7) to require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties;

(8) to identify the ownership of oil or gas producing leases, properties, wells, tanks, refineries, pipelines, plants, structures, and all transportation equipment and facilities;

(9) to require the operation of wells with efficient gas-oil ratios and to fix such ratios;

(10) to fix the spacing of wells;

(11) to determine whether a particular well or pool is a gas or oil well, or a gas or oil pool, as the case may be, and from time to time to classify and reclassify wells and pools accordingly;

(12) to determine the limits of any pool or pools producing crude petroleum oil or natural gas or both, and from time to time redetermine such limits;

(13) to regulate the methods and devices employed for storage in this state of oil or natural gas or of any product thereof including subsurface storage;

(14) to permit the injection of natural gas or of any other substance into any pool in this state for the purpose of repressuring, cycling, pressure maintenance, secondary or any other enhanced recovery operation;

(15) to regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas, or both, and to direct surface or subsurface disposal of such water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the state engineer;

(16) to determine the limits of any area containing commercial potash deposits and from time to time redetermine such limits;

(17) to regulate and where necessary prohibit drilling or producing operations for oil or gas within any area containing commercial deposits of potash where such operations would have the effect unduly to reduce the total quantity of such commercial deposits of potash which may reasonably be recovered in commercial quantities or where such operations would interfere unduly with the orderly commercial development of such potash deposits; or

(18) to spend the oil and gas reclamation fund and do all acts necessary and proper to plug dry and abandoned oil and gas wells in accordance with the provisions of the Oil and Gas Act and the Public Purchases Act including disposing of salvageable equipment and material removed from oil and gas wells being plugged by the state.

70-2-13. ADDITIONAL POWERS OF COMMISSION OR DIVISION--HEARINGS BEFORE EXAMINER--HEARINGS DE NOVO.--In addition to the powers and authority, either express or implied, granted to the oil conservation commission or division by virtue of the statutes of the state of New Mexico the division is hereby authorized and empowered in prescribing its rules or order or procedure in connection with hearings or other proceedings before the division to provide for the appointment of one or more examiners to be members of the staff of the division to conduct hearings with respect to matters properly coming before the division and to make reports and recommendations to the director of the division with respect thereto. Any member of the commission or the director of the division or his authorized representative may serve as an examiner as provided herein. The division shall promulgate rules and regulations with regard to hearings to be conducted before examiners and the powers and duties of the examiners in any particular case may be limited by order of the division to particular issues or to the performance of particular acts. In the absence of any limiting order, an examiner appointed to hear any particular case shall have the power to regulate all proceedings before him and to perform all acts and take all measures necessary or proper for the efficient and orderly conduct of such hearing, including the swearing of witnesses, receiving of testimony and exhibits offered in evidence subject to such objections as may be imposed, and shall cause a complete record of the proceeding to be made and transcribed and shall certify the same to the director of the division for consideration together with the report of the examiner and his recommendations in connection therewith. The director of the division shall base the decision rendered in any matter or proceeding heard by an examiner, upon the transcript of testimony and record made by or under the supervision of the examiner in connection with such proceeding, and such decision shall have the same force and effect as if said hearing had been conducted before the director of the division. When any matter or proceeding is referred to an examiner and a decision is rendered thereon, any party adversely affected shall have the right to have said matter heard de novo before the commission upon application filed with the division within thirty days from the time any such decision is rendered.

70-2-14 BONDING REQUIREMENT.--

A. Each person, firm, corporation or association who operates any oil, gas or service well within the state shall, as a condition precedent to drilling or producing the well, furnish a surety bond to the oil conservation division running to the benefit of the state of New Mexico, conditioned that the well be plugged and abandoned in compliance with the rules and regulations of the oil conservation division. The oil conservation division shall establish categories of surety bonds after notice and hearing. Such categories shall include a blanket plugging bond in an amount not to exceed fifty thousand dollars (\$50,000) and one-well plugging bonds in amounts determined sufficient to reasonably pay the cost of plugging the wells covered by each bond. In establishing categories of bonds, the oil conservation division shall consider the depth of the well involved, the length of time since the well was produced, the cost of plugging similar wells and such other factors as the oil conservation division deems relevant. In addition to the blanket plugging bond, the oil conservation division may require a one-well bond on any well that has been held in a temporarily abandoned status for more than two years. All bonds shall remain in force and effect until released by the oil conservation division. The oil conservation division shall release a bond when it is satisfied the conditions thereof have been fully performed.

B. If any of the requirements of the Oil and Gas Act or the rules and regulations promulgated pursuant thereto have not been complied with, the division, after notice and hearing, may order any well plugged and abandoned by the operator or surety, or both, in accordance with division rules and regulations. If the order is not complied with, in the time period set out in the order, the surety bond shall be forfeited.

C. When any bond is forfeited pursuant to the provisions of the Oil and Gas Act or rules and regulations promulgated pursuant thereto, the director shall give notice to the attorney general who shall collect the forfeiture without delay.

D. All forfeitures shall be deposited in the state treasury in the oil and gas reclamation fund.

E. When the surety bond proves insufficient to cover the cost of plugging oil and gas wells on land other than federal land and funds must be expended from the oil and gas reclamation fund to meet the additional expenses, the oil conservation division is authorized to bring suit against the operator in the district court of the county in which the well is located for indemnification for all costs incurred by the oil conservation division in plugging the well. All funds collected pursuant to a judgment in a suit for indemnification brought under the provisions of this section shall be deposited in the oil and gas reclamation fund."

"70-2-15 ALLOCATION OF ALLOWABLE PRODUCTION AMONG FIELDS WHEN DIVISION LIMITS TOTAL AMOUNT OF PRODUCTION.--Whenever, to prevent waste, the division limits the total amount of crude petroleum oil to be produced in this state, it shall allocate or distribute the allowable productions among the fields of the state. Such allocation or distribution among the fields of the state shall be made on a reasonable basis, giving, if reasonable under all circumstances, to each pool with small wells of settled production, an allowable production which will prevent a general premature abandonment of the wells in the field."

70-2-16 ALLOCATION OF ALLOWABLE PRODUCTION IN FIELD OR POOL.--

A. Whenever, to prevent waste, the total allowable production of crude petroleum oil for any field or pool in the state is fixed by the division in an amount less than that which the field or pool could produce if no restriction were imposed, the division shall prorate or distribute the allowable production among the producers in the field or pool, upon a reasonable basis and recognizing correlative rights.

B. Crude petroleum oil produced within the allowable as fixed by the division shall herein be referred to as "legal oil" and crude petroleum oil produced in excess of such allowable shall be "illegal oil."

C. Whenever, to prevent waste, the total allowable natural gas production from gas wells producing from any pool in this state is fixed by the division in an amount less than that which the pool could produce if no restrictions were imposed, the division shall allocate the allowable production among the gas wells in the pool delivering to a gas transportation facility upon a reasonable basis and recognizing correlative rights, and shall include in the proration schedule of such pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility which is reasonably capable of handling the type of gas produced by such well. In protecting correlative rights the division may give equitable consideration to acreage, pressure, open flow, porosity, permeability, deliverability and quality of the gas and to such other pertinent factors as may from time to time exist, and in so far as is practicable, shall prevent drainage between producing tracts in a pool which is not equalized by counterdrainage. In allocating production pursuant to the provisions of this subsection, the division shall fix proration periods of not less than six months. It shall determine reasonable market demand and make allocations of production during each such period, upon notice and hearing, at least thirty days prior to the beginning of each proration period. In so far as is feasible and practicable, gas wells having an allowable in a pool shall be regularly produced in proportion to their allowables in effect for the current proration period. Without approval of the division or one of its duly authorized agents, no natural gas well or pool shall be allowed to produce natural gas in excess of the allowable assigned to such source during any proration period; provided, that during an emergency affecting a gas transportation facility a gas well or pool having high deliverability period of emergency, not exceeding ten days, without penalty. The division may order subsequent changes in allowables for wells and pools to make fair and reasonable adjustment for overage resulting from the emergency. The provisions of this subsection shall not apply to any wells or pools used for storage and withdrawal from storage of natural gas originally produced not in violation of this act or the rules, regulations or orders of the division.

D. In fixing the allowable of a pool under Subsection C of this section, the division shall consider nominations of purchasers but shall not be bound thereby and shall so fix pool allowables as to prevent unreasonable discrimination between pools served by the same gas transportation facility by a purchaser purchasing in more than one pool.

E. Natural gas produced from gas wells within the allowable as determined as provided in Subsection C of this section shall herein be referred to as "legal gas", and natural gas produced in excess of such allowable shall be "illegal gas".

70-2-17. EQUITABLE ALLOCATION OF ALLOWABLE PRODUCTION--POOLING--SPACING.--

A. The rules, regulations or orders of the division shall, so far as it is practicable to do so, afford to the owner of each property in a pool the opportunity to produce his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practically determined, and so far as such can be practicably obtained without waste, substantially in the proportion that the quantity of the recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for this purpose to use his just and equitable share of the reservoir energy.

B. The division may establish a proration unit for each pool; such being the area that can be efficiently and economically drained and developed by one well, and in so doing the division shall consider the economic loss caused by the drilling of unnecessary wells, the protection of correlative rights, including those of royalty owners, the prevention of waste, the avoidance of the augmentation of risks arising from the drilling of an excessive number of wells, and the prevention of reduced recovery which might result from the drilling of too few wells.

C. When two or more separately owned tracts of land are embraced within a spacing or proration unit, or where there are owners of royalty interest or undivided interest in oil and gas minerals which are separately owned or any combination thereof, embraced within such spacing or proration unit, the owner or owners thereof may validly pool their interests and develop their lands as a unit. Where, however, such owner or owners have not agreed to pool their interests, and where one such separate owners, or owners, who has the right to drill has drilled or proposes to drill a well on said unit to a common source of supply, the division, to avoid the drilling of unnecessary wells or to protect correlative rights, or to prevent waste, shall pool all or any part of such lands or interests or both in the spacing or proration unit as a unit.

All orders effecting such pooling shall be made after notice and hearing, and shall be upon such terms and conditions as are just and reasonable and will afford to the owner or owners of each tract or interest in the unit the opportunity to recover or receive without unnecessary expense his just and fair share of the oil or gas, or both. Each order shall describe the lands included in the unit designated thereby, identify the pool or pools to which it applies and designate an operator for the unit. All operations for the pooled oil or gas, or both, which are conducted on any portion of the unit shall be deemed for all purposes to have been conducted upon each tract within the unit by the owner or owners of such tract. For the purpose of determining the portions of production owned by the persons owning interests in the pooled oil or gas, or both, such production shall be allocated to the respective tracts within the unit in the proration that the number of surface acres included within each tract bears to the number of surface acres included in the entire unit. The portion of the production allocated to the owner or owners of each tract or interest included in a well spacing or proration unit formed by a pooling order shall, when produced, be considered as if produced from the separately owned tract or interest by a well drilled thereon. Such pooling order of the division shall make definite provision as to any owner, or owners, who elects not to pay his proportionate share in advance for the pro rata reimbursement solely out of production to the parties advancing the costs of the development and operation, which shall be limited to the actual expenditures required for such purpose not in excess of what are reasonable, but which shall include a reasonable charge for supervision and may include a charge for the risk involved in the drilling of such well, which charge for risk shall not exceed two hundred percent of the nonconsenting working interest owner's or owners' pro rata share of the cost of drilling and completing the well.

In the event of any dispute relative to such costs, the division shall determine the proper costs after due notice to interested parties and hearing thereon. The division is specifically authorized to provide that the owner or owners drilling, or paying for the drilling, or for the operation of a well for the benefit of all shall be entitled to all production from such well which would be received by the owner, or owners, for whose benefit the well was drilled or operated, after payment of royalty as provided in the lease, if any, applicable to each tract or interest, and obligations payable out of production, until the owner or owners drilling or operating the well or both have been paid the amount due under the terms of the pooling order or order settling such dispute. No part of the production or proceeds accruing to any owner or owners of a separate interest in such unit shall be applied toward the payment of any cost properly chargeable to any other interest in said unit.

If the interest of any owner or owners of any unleased mineral interest is pooled by virtue of this act, seven-eighths of such interest shall be considered as a working interest and one-eighths shall be considered a royalty interest, and he shall in all events be paid one-eighth of all production from the unit and creditable to his interest.

D. Minimum allowable for some wells may be advisable from time to time, especially with respect to wells already drilled when this act takes effect, to the end that the production will repay reasonable lifting cost and thus prevent premature abandonment and resulting waste.

E. Whenever it appears that the owners in any pool have agreed upon a plan for the spacing of wells, or upon a plan or method of distribution of any allowable fixed by the division for the pool, or upon any other plan for the development or operation of such pool, which plan, in the judgment of the division, has the effect of preventing waste as prohibited by this act and is fair to the royalty owners in such pool, then such plan shall be adopted by the division with respect to such pool; however, the division, upon hearing and after notice, may subsequently modify any such plan to extent necessary to prevent waste as prohibited by this act.

F. After the effective date of any rule, regulation or order fixing the allowable production, no person shall produce more than the allowable production applicable to him, or his wells, leases or properties determined as in this act provided, and the allowable production shall be produced in accordance with the applicable rules, regulations or orders.

70-2-18 SPACING OR PRORATION UNIT WITH DIVIDED MINERAL OWNERSHIP.--

A. Whenever the operator of any oil or gas well shall dedicate lands comprising a standard spacing or proration unit to an oil or gas well, it shall be the obligation of the operator, if two or more separately owned tracts of land are embraced within the spacing or proration unit, or where there are owners of royalty interests or undivided interest in oil or gas minerals which are separately owned or any combination thereof, embraced within such spacing or proration unit, to obtain voluntary agreements pooling said lands or interests or an order of the division pooling said lands, which agreement or order shall be effective from the first production. Any division order that increases the size of a standard spacing or proration unit for a pool, or extends the boundaries of such a pool, shall require dedication of acreage to existing wells in the pool in accordance with the acreage dedication requirements for said pool, and all interests in the spacing or proration units that are dedicated to the affected wells shall share in production from the effective date of said order.

B. Any operator failing to obtain voluntary pooling agreements, or failing to apply for an order of the division pooling the lands dedicated to the spacing or proration unit as required by this section, shall nevertheless be liable to account to and pay each owner of minerals or leasehold interest, including owners of overriding royalty interests and other payments out of production, either the amount to which each interest would be entitled if pooling had occurred or the amount to which each interest is entitled in the absence of pooling, whichever is greater.

C. Nonstandard spacing or proration units may be established by the division and all mineral and leasehold interests in any such nonstandard unit shall share in production from that unit from the date of the order establishing the said nonstandard unit.

70-2-19 COMMON PURCHASERS--DISCRIMINATION IN PURCHASING PROHIBITED.--

A. Every person now engaged or hereafter engaging in the business of purchasing oil to be transported through pipelines, shall be a common purchaser thereof, and shall without discrimination in favor of one producer as against another in the same field, purchase all oil tendered to it which has been lawfully produced in the vicinity of, or which may be reasonably reached by pipelines through which it is transporting oil, or the gathering branches thereof, or which may be delivered to the pipeline or gathering branches thereof by truck or otherwise, and shall fully perform all the duties of a common purchaser. If any common purchaser shall not have need for all such oil lawfully produced within a field, or if for any reason it shall be unable to purchase all such oil, then it shall purchase from each producer in a field ratably, taking and purchasing the same quantity of oil from each well to the extent that each well is capable of producing its ratable portions; provided however, nothing herein contained shall be construed to require more than one pipeline connection for each producing well. In the event any such common purchaser of oil is likewise a producer or is affiliated with a producer, directly or indirectly, it is hereby expressly prohibited from discriminating in favor of its own production or in favor of the production of an affiliated producer as against that of others and the oil produced by such common purchaser or by the affiliate of such common purchaser shall be treated as that of any other producer for the purposes of ratable taking.

B. It shall be unlawful for any common purchaser to unjustly or unreasonably discriminate as to the relative quantities of oil purchased by it in the various fields of the state; the question of the justice or reasonableness to be determined by the division, taking into consideration the production and age of wells in the respective fields and all other factors. It is the intent of this act that all fields shall be allowed to produce and market a just and equitable share of the oil produced and marketed in the state, in so far as the same can be effected economically and without waste.

C. It shall be the duty of the division to enforce the provisions of this act, and it shall have the power, after notice and hearing as provided in Section 70-2-23 NMSA 1978, to make rules, and regulations and orders defining the distance that extension of the pipeline system shall be made to all wells not served; provided that no such authorization or order shall be made unless the division finds as to such extension that it is reasonably required and economically justified, or as to such extension of facilities that the expenditures involved therein, and the expense incident thereto, is justified in relation to the volume of oil available for transportation through said extension; and such other rules, regulations and orders as may be necessary to carry out the provisions of this act, and in making such rules, regulations and orders, the division shall give due consideration to the economic factors involved. The division shall have authority to relieve such common purchaser, after due notice and hearing as herein provided, from the duty of purchasing crude petroleum oil of inferior quality or grade or that is not reasonably suitable for the requirements of such common purchaser.

D. Any person now or hereinafter engaged in purchasing from one or more producers gas produced from gas wells shall be a common purchaser thereof within each common source of supply from which it purchases, and as such it shall purchase gas lawfully produced from gas wells with which its gas transportation facilities are

connected in the pool and other gas lawfully produced within the pool and tendered to a point on its gas transportation facilities. Such purchases shall be made without unreasonable discrimination in favor of one producer against another in the price paid, the quantities purchased, the basis of measurement or the gas transportation facilities afforded for gas of like quantity, quality and pressure available from such wells. In the event any such person is likewise a producer, he is prohibited to the same extent from discriminating in favor of himself on production from gas wells in which he has an interest, direct or indirect, as against other production from gas wells in the same pool. For the purpose of this act reasonable differences in prices paid or facilities afforded, or both, shall not constitute unreasonable discrimination if such differences bear a fair relationship for differences in quality, quantity or pressure of the gas available or to the relative lengths of time during which such gas will be available to the purchaser. The provisions of this subsection shall not apply:

(1) to any wells or pools used for storage and withdrawal from storage of natural gas originally produced not in violation of this act or of the rules, regulations or orders of the division;

(2) to purchases of casing-head gas from oil wells; and

(3) to persons purchasing gas principally for use in the recovery or production of oil or gas.

E. Any common purchaser taking gas produced from gas wells from a common source of supply shall take ratably under such rules, regulations and orders, concerning quantity, as may be promulgated by the division consistent with this act. The division, in promulgating such rules, regulations and orders may consider the quality and the deliverability of the gas, the pressure of the gas at the point of delivery, acreage attributable to the well, market requirements in the case of unprorated pools, and other pertinent factors.

F. Nothing in this act shall be construed or applied to require, directly or indirectly, any person to purchase gas of a quality or under a pressure or under any other condition by reason of which such gas cannot be economically and satisfactorily used by such purchaser by means of his gas transportation facilities then in service.

70-2-20 PENALTY FOR VIOLATIONS.--Any person who violates any provision of this act or in any rules, regulation or order of the commission or the division made pursuant to this act shall, upon conviction, be fined not more than one thousand dollars (\$1,000) for each violation. Each day during which said violation is continued shall be considered a separate and complete offense for this purpose.

70-2-21 PURCHASE, SALE OR HANDLING OF EXCESS OIL, NATURAL GAS OR PRODUCTS PROHIBITED.--

A. The sale or purchase or acquisition, or the transportation, refining, processing, or handling in any other way, of crude petroleum oil or natural gas in whole or in part produced in excess of the amount allowed by any statute of this state, or by any provision of this act, or by any rule, regulation or order of the commission or division made thereunder, is hereby prohibited, and such oil or commodity is hereby referred to as "illegal oil" or "illegal gas", as the case may be.

B. The sale or purchase or acquisition, or the transportation, refining, processing or the handling in any other way, of any product of crude petroleum or any product of natural gas, which product is derived in whole or in part from crude petroleum oil or natural gas produced in whole or in part in excess of the amount allowed by any statute of this state, or by any provisions of this act, or by any rule, regulation or order of the commission or division made thereunder, is hereby prohibited, and each such commodity or product is herein referred to as "illegal oil product" to distinguish it from "legal oil product", or "illegal gas product" to distinguish it from "legal gas product."

70-2-22 RULES AND REGULATIONS TO EFFECTUATE PROHIBITIONS AGAINST PURCHASE OR HANDLING OF EXCESS OIL OR NATURAL GAS--PENALTIES.--

A. The division is specifically authorized and directed to make such rules, regulations and orders, and may provide for such certificates of clearance or tenders, as may be necessary to make effective the prohibitions contained in Section 70-2-21 WMSA 1978.

B. Unless and until the division provides for certificates of clearance or tenders, or some other method, so that any person may have an opportunity to determine whether any contemplated transaction of sale or purchase or acquisition, or of transportation, refining, processing, or handling in any other way, involves illegal oil or illegal oil product, or illegal gas or illegal gas product, no penalty shall be imposed for the sale or purchase or acquisition, or the transportation, refining, processing, or handling in any other way, of illegal oil or illegal oil product, or illegal gas or illegal gas product, except under circumstances stated in the succeeding provisions of this paragraph. Penalties shall be imposed for the commission of each transaction prohibited in Section 70-2-21 WMSA 1978 when the person committing the same knows that illegal oil or illegal oil product, or illegal gas or illegal gas product, is involved in such transaction, or when such person could have known or determined such fact by the exercise of reasonable diligence or from facts within his knowledge. However, regardless of lack of actual notice or knowledge, penalties as provided in this act shall apply to any sale or purchase or acquisition, and to the transportation, refining, processing, or handling in any other way, of illegal oil or illegal oil product, or illegal gas or illegal gas product where

administrative provision is made for identifying the character of the commodity as to its legality. It shall likewise be a violation for which penalties shall be imposed for any person to sell or purchase or acquire, or to transport, refine, process, or handle in any way any crude petroleum oil or natural gas or any product thereof without complying with the rule, regulation or order of the commission or division relating thereto.

70-2-23 HEARINGS ON RULES, REGULATIONS AND ORDERS--NOTICE--EMERGENCY RULES.--Except as provided for herein, before any rule, regulation or order, including revocation, change, renewal or extension thereof, shall be made under the provisions of this act, a public hearing shall be held at such time, place and manner as may be prescribed by the division. The division shall first give reasonable notice of such hearing (in no case less than ten days, except in an emergency) and at any such hearing any person having an interest in the subject matter of the hearing shall be entitled to be heard. In case an emergency is found to exist by the division which in its judgment requires the making of a rule, regulation or order shall have the same validity as if a hearing with respect to the same had been held after due notice. The emergency rule, regulation or order permitted by this section shall remain in force no longer than fifteen days from its effective date, and, in any event, it shall expire when the rule, regulation or order made after due notice and hearing with respect to the subject matter of such emergency rule, regulation or order becomes effective.

"70-2-24 REPORTS OF GOVERNMENTAL DEPARTMENTS OR AGENCIES AS TO MARKET DEMAND TO BE DEEMED PRIMA FACIE CORRECT.—The reports, estimates, findings of fact, or similar documents or findings of the United States bureau of mines, or of any other department or agency of the United States government, or of any bureau or agency under an interstate compact to which the state of New Mexico is a party made with respect to the reasonable market demand for crude petroleum oil, may be considered by the division or by any court and taken as being prima facie correct."

70-2-25 REHEARINGS - APPEALS.

(a) Within twenty (20) days after entry of any order or decision of the Commission, any person affected thereby may file with the Commission an application for rehearing in respect of any matter determined by such order or decision, setting forth the respect in which such order or decision is believed to be erroneous. The Commission shall grant or refuse any such application in whole or in part within ten (10) days after the same is filed and failure to act thereon within such period shall be deemed a refusal thereof and a final disposition of such application. In the event the rehearing is granted, the Commission may enter such new order or decision after rehearing as may be required under the circumstances.

(b) Any party to such rehearing proceeding, dissatisfied with the disposition of the application for rehearing, may appeal therefrom to the District Court of the county wherein is located any property of such party affected by the decision, by filing a petition for the review of the action of the Commission within twenty (20) days after the entry of the order following rehearing or after the refusal or rehearing as the case may be. Such petition shall state briefly the nature of the proceedings before the Commission and shall set forth the order or decision of the Commission complained of and the grounds of invalidity thereof upon which the applicant will rely; provided, however, that the questions reviewed on appeal shall be only questions presented to the Commission by the application for rehearing. Notice of such appeal shall be served upon the adverse party or parties and the Commission in the manner provided for the service of summons in civil proceedings. The trial upon appeal shall be de novo, without a jury and the transcript of proceedings before the Commission, including the evidence taken in hearings by the Commission, shall be received in evidence by the court in whole or in part upon offer by either party, subject to legal objections to evidence, in the same manner as if such evidence was originally offered in the District Court. The Commission action complained of shall be prima facie valid and the burden shall be upon the party or parties seeking review to establish the invalidity of such action of the Commission. The Court shall determine the issues of fact and of law and shall, upon a preponderance of the evidence introduced before the Court, which may include evidence in addition to the transcript of proceedings before the Commission, and the law applicable thereto, enter its order either affirming, modifying, or vacating the order of the Commission. In the event the Court shall modify or vacate the order or decision of the Commission, it shall enter such order in lieu thereof as it may determine to be proper. Appeals may be taken from the judgment or decision of the District Court to the Supreme Court in the same manner as provided for appeals from any other final judgment entered by a District Court in this State. The trial of such application for relief from action of the Commission and the hearing of any appeal to the Supreme Court from the action of the District Court shall be expedited to the fullest possible extent.

(c) The pendency of proceedings to review shall not of itself stay or suspend operation of the order or decision being reviewed, but during the pendency of such proceedings, the District Court in its discretion may, upon its own motion or upon proper application of any party thereto, stay or suspend, in whole or in part, operation of said order or decision pending review thereof, on such terms as the court deems just and proper and in accordance with the practice of courts exercising equity jurisdiction; provided, that the court, as a condition to any such staying or suspension of operation of any order or decision, may require that one or more parties secure, in such form and amount as the court may deem just and proper, one or more other parties against loss or damage due to the staying or suspension of the Commission's order or decision, in the event that the action of the Commission shall be affirmed.

(d) The applicable rules of practice and procedure in civil cases for the courts of this state shall govern the proceedings for review, and any appeal therefrom to the Supreme Court of this state, to the extent such rules are consistent with provisions of this act.

70-2-26 REVIEW OF OIL CONSERVATION COMMISSION DECISION--APPEALS.--

The secretary of energy and minerals department may hold a public hearing to determine whether an order or decision issued by the oil conservation commission contravenes the department's statewide plan or the public interest. The hearing shall be held within twenty days after the entry of the commission order or decision following a rehearing or after the order refusing a rehearing as the case may be. The hearing shall be a de novo proceeding and the secretary shall enter such order or decision as may be required under the circumstances, having due regard for the conservation of the state's oil, gas and mineral resources, and the commission shall modify its own order or decision to comply therewith. If a rehearing before the commission was granted, the record of the rehearing shall be made part of the record of the hearing before the secretary. If the application for rehearing was denied, the record of the hearing before the commission or the division shall be made part of the record of the hearing before the secretary. Such orders and decisions of the secretary may be appealed by any party to the original hearing or the rehearing before the commission, or by any party to the hearing before the secretary held pursuant to this section, in accordance with the procedure of Subsections (b), (c) and (d) of Section 70-2-25 MSA 1978 except that the appeal shall not be a de novo proceeding and shall be limited to a review of the record of the hearing held pursuant to the provisions of this section.

70-2-27 TEMPORARY RESTRAINING ORDER OR INJUNCTION--GROUNDS--HEARING--BOND.--

A. No temporary restraining order or injunction of any kind shall be granted against the commission or the members thereof, or against the attorney general, or against any agent, employee or representative of the division, restraining the commission, or any of its members, or the division or any of its agents, employees or representatives, or the attorney general, from enforcing any statute of this state relating to conservation of oil or gas, or any of the provisions of this act, or any rule, regulation or order made thereunder, except after due notice to the director of the division, and to all other defendants, and after a hearing at which it shall be clearly shown to the court that the act done or threatened is without sanction of law, or that the provision of this act, or the rule, regulation or order complained of, is invalid, and that, if enforced against the complaining party, will cause an irreparable injury. With respect to an order to decree granting temporary injunctive relief, the nature and extent of the probable invalidity of the state, or of any provision of this act, or of any rule, regulation or order thereunder involved in such suit, must be recited in the order or decree granting the temporary relief, as well as a clear statement of the probable damage relied upon by the court as justifying temporary injunctive relief.

B. No temporary injunction of any kind, including a temporary restraining order against the commission or the members thereof, or the division or its agents, employees or representatives, or the attorney general, shall become effective until the plaintiff shall execute a bond to the state with sufficient surety in an amount to be fixed by the court reasonably sufficient to indemnify all persons who may suffer damage by reason of the violation pendente lite by the complaining party of the statute or the provisions of this act, or of any rule, regulation or order complained of. Any person so suffering damage may bring suit thereon before the expiration of six months after the statute, provision, rule, regulation or order complained of shall be finally held to be valid, in whole or in part, or such suit against the commission, or the members thereof, or the division, shall be finally dismissed. Such bond shall be approved by the judge of the court in which the suit is pending, and shall be for the use and benefit of all persons who may suffer damage by reason of the violation pendente lite of the statute, provision, rule, regulation or order complained of in such suit, and who may bring suit within the time prescribed by this section; and such bond shall be so conditioned. From time to time, on motion and with notice to the parties, the court may increase or decrease the amount of the bond and may require new or additional sureties, as the facts may warrant.

70-2-28 ACTIONS FOR VIOLATIONS.--Whenever it shall appear that any person is violating, or threatening to violate, any statute of this state with respect to the conservation of oil or gas, or both, or any provision of this act, or any rule, regulation or order made thereunder, the division through the attorney general shall bring suit against such person in the county of the residence of the defendant, or in the county of the residence of any defendant if there be more than one defendant, or in the county where the violation is alleged to have occurred, for penalties, if any are applicable, and to restrain such person from continuing such violation or from carrying out the threat of violation. In such suit the division may obtain injunctions, prohibitory and mandatory, including temporary restraining orders and temporary injunctions, as the facts may warrant, including, when appropriate, an injunction restraining any person from moving or disposing of illegal oil or illegal oil product, or illegal gas or illegal gas product, and any or all such commodities, or funds derived from the sale thereof, may be ordered to be impounded or placed under the control of an agent appointed by the court if, in the judgment of the court, such action is advisable.

70-2-29 ACTIONS FOR DAMAGES--INSTITUTION OF ACTIONS FOR INJUNCTIONS BY PRIVATE PARTIES.--Nothing in this act contained or authorized, and no suit by or against any person for violating any statute of this state with respect to conservation of oil and gas, or any provisions of this act, or any rule, regulation or order issued thereunder, shall impair or abridge or delay any cause of action for damages which any person may have or assert against any person violating any statute of this state with respect to conservation of oil and gas, or any provision of this act, or any rule, regulation or order issued thereunder. Any person so damaged by the violation may sue for and recover such damages as he may be entitled to receive. In the event the division should fail to bring suit to enjoin any actual or threatened violation of any statute of this state with respect to the conservation of oil and gas, or of any provision of this act, or of any rule, regulation or order made

thereunder, then any person or party in interest adversely affected by such violation, and who has notified the division in writing of such violation or threat thereof and has requested the division to sue, may, to prevent any or further violation, bring suit for that purpose in the district court of any county in which the division could have brought suit. If, in such suit, the court holds that injunctive relief should be granted, then the division shall be made a party and shall be substituted for the person who brought the suit, and the injunction shall be issued as if the division had at all times been the complaining party.

70-2-30 VIOLATION OF COURT ORDER GROUNDS FOR APPOINTMENT OF RECEIVER.--

The violation by any person of an order of the court relating to the operation of a well or wells, or of a pipeline or other transportation, equipment or facility, or of a refinery, or of a plant of any kind, shall be sufficient ground for the appointment of a receiver with power to conduct operations in accordance with the order of the court.

70-2-31 PENALTIES FOR VIOLATIONS--ACCESSORIES.--

A. Any person who, for the purpose of evading this act, or of evading any rule, regulation or order made hereunder, shall knowingly and willfully make or cause to be made any false entry or statement of fact in any report required to be made by this act or by any rule, regulation or order made hereunder; or who, for such purpose, shall make or cause to be made any false entry in any account, record or memorandum kept by any person in connection with the provisions of this act or of any rule, regulation or order made thereunder; or who, for such purpose, shall omit to make, or cause to be omitted, full, true and correct entries in such accounts, records or memoranda, of all facts and transactions pertaining to the interest of activities in the petroleum industry of such person as may be required by the commission or division under authority given to this act or by any rule, regulation or order made hereunder; or who, for such purpose, shall remove out of the jurisdiction of the state, or who shall mutilate, alter, or by any other means falsify, any book, record, or other paper pertaining to the transactions regulated by this act or by any rule, regulation or order made hereunder; shall be deemed guilty of a felony and shall be subject, upon conviction in any court of competent jurisdiction, to a fine of not more than one thousand dollars (\$1,000), or imprisonment for a term of not more than three years, or to both such fine and imprisonment.

B. Any person who knowingly and willfully violates any provision of this act or any rule, regulation or order of the commission or division made hereunder, shall, in the event a penalty for such violation is not otherwise provided for herein be subject to a penalty of not to exceed one thousand dollars (\$1,000) a day for each and every day of such violation, and for each and every act of violation, such penalty to be recovered in a suit in the district court of the county where the defendant resides, or in the county of the residence of any defendant if there be more than one defendant, or in the district court of the county where the violation took place. The place of suit shall be selected by the division, and such suit, by direction of the division, shall be instituted and conducted in the name of the division by the attorney general or under his direction by the district attorney of the county where the suit is instituted. The payment of any penalty as provided for herein shall not have the effect of changing illegal oil or illegal gas product into legal oil or legal gas product, nor shall such payment have the effect of authorizing the sale or purchase or acquisition, or the transportation, refining, processing, or handling in any other way, of such illegal oil or illegal gas, or illegal oil or illegal gas product, but to the contrary penalty shall be imposed for each prohibited transaction relating to such illegal oil or illegal gas or illegal oil or illegal gas product.

C. Any person knowingly and willfully aiding or abetting any other person in the violation of any statute of this state relating to the conservation of oil and gas, or the violation of any provisions of this act, or any rule, regulation or order made thereunder, shall be subject to the same penalties as are prescribed herein for the violation by such other person.

70-2-32 SEIZURE AND SALE OF ILLEGAL OIL OR GAS OR PRODUCTS--PROCEDURE.--

A. Apart from, and in addition to, any other remedy or procedure which may be available to the commission or the division, or any penalty which may be sought against or imposed upon any person, with respect to violations relating to illegal oil or illegal gas or illegal products thereof, all such oil or gas or products thereof shall, except under such circumstances as are stated herein, be contraband and shall be seized and sold, and the proceeds applied as herein provided. The sale shall not take place unless the court finds in the proceeding provided in this section that the owner of such illegal oil or illegal gas or product thereof is liable, or in some proceeding authorized by Sections 70-2-1 through 70-2-34 MMSA 1978, such owner has already been held to be liable, for penalty for having produced the illegal oil or illegal gas, or for having purchased or acquired the illegal oil or illegal gas or product thereof. Whenever the division believes that illegal oil or illegal gas or product thereof is subject to seizure and sale, as provided herein, it shall, through the attorney general, bring a civil action in rem for that purpose in the district court of the county where the commodity is found, or the action may be maintained in connection with any suit or cross-action for injunction or for penalty relating to any prohibited transaction involving the illegal oil or illegal gas or product thereof. Notice of the action in rem shall be given in conformity with the law or rule applicable to such proceeding. Any person or party in interest who may show himself to be adversely affected by any such seizure and sale shall have the right to intervene in the suit to protect his rights.

B. Whenever the pleading with respect to the forfeiture of illegal oil or illegal gas or product thereof shows ground for seizure and sale, and the pleading is verified or is supported by affidavit or affidavits, or by testimony under oath, the court shall order such commodity to be impounded or placed under the control, actual or constructive, of the court through an agent appointed by the court.

C. The judgment affecting the forfeiture shall provide that the commodity be seized, if not already under the control of the court, and that a sale be had in similar manner and with similar notice as provided by law or rule with respect to the sale of personal property under execution; provided, however, the court may order that the commodity be sold in specified lots or portions, and at specified intervals, instead of being sold at one time. Title to the amount sold shall pass as of the date of the seizure. The judgment shall provide for payment of the proceeds of the sale into the common school fund, after first deducting the costs in connection with the proceedings and the sale. The amount sold shall be treated as legal oil or legal gas or product thereof, as the case may be, in the hands of the purchaser, but the purchaser and the commodity shall be subject to all applicable laws and rules, regulations and orders with respect to further sale or purchase or acquisition, and with respect to the transportation, refining, processing, or handling in any other way, of the commodity purchased.

D. Nothing in this section shall deny or abridge any cause of action a royalty owner, or any lien holder, or any other claimant, may have, because of the forfeiture of the illegal oil or illegal gas or product thereof, against the person whose act resulted in such forfeiture.

70-2-33 DEFINITIONS OF WORDS USED IN ACT.--

Unless the context otherwise requires, the words defined in this section shall have the following meaning when found in this act, to-wit:

A. "Person" means any natural person, corporation, association, partnership, receiver, trustee, guardian, executor, administrator and a fiduciary of any kind.

B. "Pool" means an underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both. Each zone of a general struture, which zone is completely separate from any other zone in the structure, is covered by the word "pool" as used herein. "Pool" is synonymous with "common source of supply" and with "common reservoir."

C. "Field" means the general area which is underlaid or appears to be underlaid by at least one (1) pool; and "field" also includes the underground reservoir or reservoirs containing such crude petroleum oil or natural gas, or both. The words "field" and "pool" mean the same thing when only one (1) underground reservoir is involved; however, "field" unlike "pool" may relate to two (2) or more pools.

D. "Product" means any commodity or thing made or manufactured from crude petroleum oil or natural gas, and all derivatives of crude petroleum oil or natural gas, including refined crude oil, crude tops, topped crude, processed crude petroleum, residue from crude petroleum, cracking stock, uncracked fuel oil, treated crude oil, fuel oil, residuum, gas oil, naphtha, distillate, gasoline, kerosene, benzine, wash oil, waste oil, lubricating oil, and blends or mixtures of crude petroleum oil or natural gas or any derivative thereof.

E. "Owner" means the person who has the right to drill into and to produce from any pool, and to appropriate the production either for himself or for himself and another.

F. "Producer" means the owner of well or wells capable of producing oil or natural gas or both in paying quantities.

G. "Gas transportation facility" means a pipeline in operation serving gas wells for the transportation of natural gas, or some other device or equipment in like operation whereby natural gas produced from gas wells connected therewith can be transported or used for consumption.

H. "Correlative rights" means the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practicably determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for such purpose to use his just and equitable share of the reservoir energy.

I. "Potash" means the naturally occurring bedded deposits of the salts of the element potassium.

70-2-34 REGULATION, CONSERVATION AND PREVENTION OF WASTE OF CARBON DIOXIDE GAS.--

A. The oil conservation division is hereby vested with the authority and duty of regulation and conserving the production of and preventing waste of carbon dioxide gas within this state in the same manner, insofar as is practicable as it regulates, conserves and prevents waste of natural or hydrocarbon gas. The

provisions of this act relating to gas or natural gas shall also apply to carbon dioxide gas insofar as the same are applicable. "Carbon dioxide gas" as used herein shall mean non-combustible gas composed chiefly of carbon dioxide occurring naturally in underground rocks.

B. The commission shall have concurrent jurisdiction and authority with the division to the extent necessary for the commission to perform its duties as required by law.

70-2-35 LEGAL REPRESENTATION BEFORE THE FEDERAL POWER COMMISSION.--There may be a special assistant attorney general employed by the energy and minerals department who shall represent the interests of this state before the federal power commission. In addition this attorney shall work closely with other agencies having responsibilities relating to oil and gas matters and shall carry out such additional responsibilities as are delegated to him by the energy and minerals department. All costs incurred in employing such counsel shall be paid out of the oil conservation fund in accordance with provisions of State Budgets Act.

70-2-36 REMOVING OR ALTERING MARKS OF IDENTIFICATION--PENALTY.--

A. No person shall remove, alter, or attempt to remove or alter, any serial number, brand name, trade mark or any other mark of identification from any tool or any other item of construction or oil-field equipment by grinding, filing, welding or any other method with the intent to deprive its lawful owner of positive identification.

B. Any person who violates the provisions of this section is guilty of a misdemeanor and, upon conviction, shall be fined not more than one thousand dollars (\$1,000) or imprisoned for a definite term of not more than one year or both.

70-2-37 OIL AND GAS RECLAMATION FUND CREATED--DISPOSITION OF FUND.--There is hereby created the "oil and gas reclamation fund". All funds in the oil and gas reclamation fund and the earnings therefrom are appropriated to the energy and minerals department for use by the oil conservation division in carrying out the provisions of the Oil and Gas Act.

70-2-38 OIL AND GAS RECLAMATION FUND ADMINISTERED--PLUGGING WELLS ON FEDERAL LAND--RIGHT OF IDENTIFICATION--ANNUAL REPORT--CONTRACTORS SELLING EQUIPMENT FOR SALVAGE.--

A. The oil and gas reclamation fund shall be administered by the oil conservation division. The director of the division shall cause to be prepared plans for the plugging of abandoned wells which have not been plugged or which have been improperly plugged. The director, as funds become available in the oil and gas reclamation fund, shall reclaim, and properly plug, all abandoned wells in accordance with the provisions of the Oil and Gas Act, and the rules and regulations promulgated thereunder. The division may order wells plugged on federal lands on which there are no bonds running to the benefit of the state in the same manner and in accordance with the same procedures as with wells drilled on state and fee land, including utilizing funds from the oil and gas reclamation fund to pay the cost of such plugging. When the costs of plugging a well drilled on federal mineral leases are paid from the oil and gas reclamation fund, the division is authorized to bring a suit against the operator or the owner of the minerals under the tract, or both, in the district court of the county in which the well is located for indemnification for all costs incurred by the division in plugging said well. Any funds collected pursuant to a judgment in a suit for indemnification brought under the Oil and Gas Act shall be deposited in the oil and gas reclamation fund.

B. The director shall make an annual report to the secretary of energy and minerals, the governor and the legislature on the use of the oil and gas reclamation fund.

C. All contracts for well plugging shall be entered into in accordance with the provisions of the Public Purchases Act. Any contractor employed by the division to plug a well is authorized to sell for salvage the equipment and material which is removed from the well in plugging it.

70-6-1 PUBLIC INTEREST AND WELFARE.--

The underground storage of natural gas which promotes conservation thereof, which permits the building of reserves for orderly withdrawal in periods of peak demand, which makes more readily available our natural gas resources to the domestic, commercial and industrial consumers of this state, and which provides, a better year-round market to the various gas fields, is hereby declared to be in the public interest and welfare of this state and the citizens hereof.

70-6-2 DEFINITIONS.--As used in this act:

A. "underground storage" shall mean storage of natural gas in a subsurface stratum or formation of the earth;

B. "natural gas" shall mean natural gas either while in its original state after withdrawal from the earth or after the same has been processed by removal therefrom of component parts not essential to its use for light and fuel;

- C. "native gas" shall mean gas which has not been previously withdrawn from the earth;
- D. "division" shall mean the oil conservation division of the energy and minerals department;
- E. "commission" shall mean the oil conservation commission;

F. "natural gas company" shall mean any person, firm or corporation engaged in the distribution, sale or furnishing of natural gas to or for the public subject to regulation by the public service commission under the Public Utility Act, or any person, firm or corporation engaged in the business of transporting natural gas, subject to regulation by the federal power commission under the Natural Gas Act; and

G. "public body" shall mean the state of New Mexico or any department, board, commission, bureau, institution, public agency, county or political subdivision thereof including bodies corporate, bodies politic, municipal corporations, school districts, conservancy districts and quasi-municipal corporations of all kinds.

70-6-3 ACQUISITION OF LANDS FOR PURPOSES OF UNDERGROUND NATURAL GAS STORAGE - LANDS CONTROLLED BY PUBLIC BODY, EXECUTOR, ADMINISTRATOR, GUARDIAN, RECEIVER, OR TRUSTEE.

Any natural gas company desiring to make use of a formation or stratum as reservoir for the underground storage of natural gas shall attempt to acquire by option, lease, conveyance or other negotiated means, such formation or stratum prior to resorting to the exercise of the power of eminent domain as hereinafter granted. Any public body and any executor, administrator, guardian, receiver or trustee shall be authorized to grant to any such natural gas company rights for underground storage of natural gas in lands subject to its or his control in the same manner as provided by law for entering into oil and gas leases, or if any such public body, executor, administrator, guardian, receiver, or trustee shall not be specifically authorized by law to make oil and gas leases, then the manner provided by law for lease by such public body, executor, administrator, guardian, receiver, or trustee of interests in land, or if any such public body, executor, administrator, guardian, receiver, or trustee shall not be specifically authorized by law to make oil and gas leases or leases for interests in land, then in the manner provided by law for the sale by such public body, executor, administrator, guardian, receiver, or trustee of interests in land.

70-6-4 APPROPRIATION OF UNDERGROUND STORAGE FACILITIES--LIMITATIONS.--By eminent domain proceedings, any natural gas company may appropriate for underground storage of natural gas any subsurface stratum or formation in any land which the division shall have found to be suitable for the underground storage of natural gas, and in connection therewith may appropriate such other interests in the land as may be required to maintain and operate facilities for such underground storage; provided, however, that the right to appropriate underground formations and strata shall be limited as follows:

A. no formation or stratum which is producing or which is capable of producing oil in paying quantities, through any known recovery method, shall be subject to appropriation hereunder;

B. no formation or stratum that contained native gas producible in paying quantities shall be subject to appropriation hereunder, unless the recoverable volumes of native gas originally in place therein shall be substantially depleted, and unless such formation or stratum has a greater value or utility as a gas storage reservoir for the purpose of insuring an adequate supply of natural gas, or for the conservation of natural gas, then for the production of the relatively small volumes of native gas which remain therein;

C. no formation or stratum underlying lands which contain known commercial deposits of potash shall be subject to appropriation hereunder;

D. no formation or stratum shall be subject to appropriation hereunder if its use for underground storage purposes would cause injury to surface or underground water resources;

E. no rights or interest in existing underground gas reservoirs, being used for the injection, storage and withdrawal of natural gas, owned or operated by other than the condemner, shall be subject to appropriation;

F. no dwelling, barn, store, warehouse or other building shall be subject to appropriation hereunder; and

G. the right of appropriation hereby granted shall be without prejudice to the rights of the owner of said lands or of other rights or interests therein to drill through the underground stratum or formation so appropriated in such manner as shall comply with orders, rules and regulations of the division issued for the purpose of protecting underground storage strata or formations against pollution and against the escape of natural gas therefrom and shall be without prejudice to the rights of the owner of said lands or other rights or interests therein as to all other uses thereof.

70-6-5 FINDINGS OF OIL CONSERVATION DIVISION.--Any natural gas company desiring to exercise the right of eminent domain as to any land for underground storage of natural gas shall, as a conditional precedent to the filing of its petition in the district court, obtain from the division a decision finding:

A. that the underground stratum or formation sought to be acquired is suitable for the underground storage of natural gas;

B. that the underground stratum or formation sought to be acquired is incapable of producing oil in paying quantities through any known recovery method;

C. that the formation or stratum sought to be acquired is not underlying lands which contain known commercial deposits of potash;

D. that injury will not be caused to surface or underground water resources;

E. that the underground stratum or formation sought to be acquired, if it contained native gas capable of production in paying quantities, is substantially depleted of recoverable native gas, and that such formation or stratum has a greater value or utility as a gas storage reservoir than for the production of the remaining volumes of native gas therein;

F. the extent of the horizontal limits of the reservoir expected to be penetrated by displaced or injected gas; and

G. that no portion of the formation or stratum sought to be acquired has been appropriated or is being utilized for the injection, storage and withdrawal of natural gas by others.

70-6-6 COMMISSION OR DIVISION PROCEDURE.--The laws, rules and regulations relating to commission or division action in matters pertaining to conservation of oil and gas shall be applicable to commission or division proceedings under this act.

70-6-7 EXERCISE OF RIGHT OF EMINENT DOMAIN.--Any natural gas company having first obtained a decision from the division, as hereinbefore provided, may proceed to appropriate for underground storage of natural gas subsurface strata or formations and such other interests in the land as may be required to maintain and operate facilities for such underground storage in the manner provided by law for the exercise of the right of eminent domain by railroads and telegraph and telephone companies.

70-6-8 OWNERSHIP OF INJECTED GAS.--

All natural gas which has previously been reduced to possession, and which is subsequently injected into underground storage in any strata or formation shall at all times be deemed the property of the injector, his heirs, successors or assigns; and in no event shall such gas be subject to the right of the owner of the surface of said lands or of any mineral interest therein, under which said strata or formation lie, or of any person other than the injector, his heirs, successors, and assigns, to produce, take reduce to possession, waste, or otherwise interfere with or exercise any control thereover; provided, that the injector, his heirs, successors and assigns, shall have no right to gas in any stratum, formation or portion thereof, in which storage rights have not been acquired pursuant to this act (70-6-1 to 70-6-8), or otherwise purchased.

70-7-1 PURPOSE OF ACT.

The legislature finds and determines that it is desirable and necessary under the circumstances and for the purposes hereinafter set out, to authorize and provide for the unitized management, operation and further development of the oil and gas properties to which the Statutory Unitization Act (70-7-1 to 70-7-21) is applicable, to the end that greater ultimate recovery may be had therefrom, waste prevented, and correlative rights protected of all owners of mineral interests in each unitized area. It is the intention of the legislature that the Statutory Unitization Act apply to any type of operation that will substantially increase the recovery of oil above the amount that would be recovered by primary recovery alone and not to what the industry understands as exploratory units.

70-7-2 SHORT TITLE.

This act (70-7-1 to 70-7-21) may be cited as the "Statutory Unitization Act."

70-7-3 ADDITIONAL POWERS AND DUTIES OF THE OIL CONSERVATION DIVISION.--Subject to the limitations of the Statutory Unitization Act the oil conservation division of the energy and minerals department hereinafter referred to as the "division", is hereby vested with jurisdiction, power and authority and it shall be its duty to make and enforce such orders and do such things as may be necessary or proper to carry out and effectuate the purposes of the Statutory Unitization Act.

70-7-4 DEFINITIONS.--For the purposes of the Statutory Unitization Act, unless the context otherwise requires:

A. "pool" means an underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both. Each zone of a general structure, which zone is completely separate from any other zone in the structure, is covered by the word pool as used herein. Pool is synonymous with "common source of supply" and with "common reservoir";

B. "oil and gas" means crude oil, natural gas, casinghead gas, condensate or any combination thereof;

C. "waste", in addition to its meaning in Section 70-2-3 NMSA 1978, shall include both economic and physical waste resulting, or that could reasonably be expected to result, from the development and operation separately of tracts that can best be developed and operated as a unit;

D. "working interest" means an interest in unitized substances by virtue of a lease, operating agreement, fee title or otherwise, excluding royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgages and lien claimants but including a carried interest, the owner of which is primarily obligated to pay, either in cash or out of production or otherwise, a portion of the unit expense; however, oil and gas rights that are free of lease or other instrument creating a working interest shall be regarded as a working interest to the extent of seven-eighths thereof and a royalty interest to the extent of the remaining one-eighth thereof;

E. "working interest owner" or "lessee" means a person who owns a working interest;

F. "royalty interest" means a right to or interest in any portion of the unitized substances or proceeds thereof other than a working interest;

G. "royalty owner" means a person who owns a royalty interest;

H. "unit operator" means the working interest owner, designated by working interest owners under the unit operating agreement or the division to conduct unit operations, acting as operator and not as a working interest owner;

I. "basic royalty" means the royalty reserved in the lease but in no event exceeding one-eighth; and

J. "relative value" means the value of each separately owned tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probably productivity of oil and gas in the absence of unit operations, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, operating or pricing factors, as may be reasonably susceptible of determination.

70-7-5 REQUISITES OF APPLICATION FOR UNITIZATION.--Any working interest owner may file an application with the division requesting an order for the unit operation of a pool or any part thereof. The application shall contain:

A. a description of the proposed unit area and the vertical limits to be included therein with a map or plat thereof attached;

B. a statement that the reservoir or portion thereof involved in the application has been reasonably defined by development;

C. a statement of the type of operations contemplated for the unit area;

D. a copy of a proposed plan of unitization which the applicant considers fair, reasonable and equitable;

E. a copy of a proposed operating plan covering the manner in which the unit will be supervised and managed and costs allocated and paid; and

F. an allegation of the facts required to be found by the division under Section 70-7-6 NMSA 1978.

70-7-6 MATTERS TO BE FOUND BY THE DIVISION PRECEDENT TO ISSUANCE OF UNITIZATION ORDER.--

A. After an application for unitization has been filed with the division and after notice and hearing, all in the form and manner and in accordance with the procedural requirements of the division, and prior to reaching a decision on the petition, the division shall determine whether or not each of the following conditions exists:

(1) that the unitized management, operation and further development of the oil or gas pool or a portion thereof is reasonably necessary in order to effectively carry on pressure maintenance or secondary or tertiary recovery operations, to substantially increase the ultimate recovery of oil and gas from the pool or the unitized portion thereof;

(2) that one or more of the said unitized methods of operations as applied to such pool or portion thereof is feasible, will prevent waste and will result with reasonable probability in the increased recovery of substantially more oil and gas from the pool or unitized portion thereof than would otherwise be recovered;

(3) that the estimated additional costs, if any, of conducting such operations will not exceed the estimated value of the additional oil and gas so recovered plus a reasonable profit;

(4) that such unitization and adoption of one or more of such unitized methods of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the pool or portion thereof directly affected;

(5) that the operator has made a good faith effort to secure voluntary unitization within the pool or portion thereof directly affected; and

(6) that the participation formula contained in the unitization agreement allocates the produced and saved unitized hydrocarbons to the separately owned tracts in the unit area on a fair, reasonable and equitable basis.

B. If the division determines that the participation formula contained in the unitization agreement does not allocate unitized hydrocarbons on a fair, reasonable and equitable basis, the division shall determine the relative value, from evidence introduced at the hearing, taking into account the separately owned tracts in the unit area, exclusive of physical equipment, for development of oil and gas by unit operations, and the production allocated to each tract shall be the proportion that the relative value of each tract so determined bears to the relative value of all tracts in the unit area.

C. When the division determines that the preceding condition exist it shall make findings to that effect and make an order creating the unit and providing for the unitization and unitized operation of the pool or portion thereof described in the order, all upon such terms and conditions as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect and safeguard the respective rights and obligations of the working interest owners and royalty owners.

70-7-7 DIVISION ORDERS.--The order providing for unitization and unit operation of a pool or part thereof shall be upon terms and conditions that are fair, reasonable and equitable and shall approve or prescribe a plan or unit agreement for unit operation which shall include:

A. a legal description in terms of surface area of the pool or part thereof to be operated as a unit and the vertical limits to be included therein "the unit area";

B. a statement of the nature of the operations contemplated;

C. an allocation to the separately owned tracts in the unit area of all the oil and gas that is produced from the unit area and is saved, being the production that is not used in the conduct of operations on the unit area or not unavoidably lost;

D. a provision for the credits and charges to be made in the adjustment among the owners in the unit area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to the unit operations;

E. a provision governing how the costs of unit operations including capital investments shall be determined and charged to the separately owned tracts and how said costs shall be paid including a provision providing when, how, and by whom the unit production allocated to an owner who does not pay the share of the costs of unit operations charged to such owner, or the interest of such owner, may be sold and the proceeds applied to the payment of such costs;

F. a provision for carrying any working interest owner on a limited, carried or net-profits basis, payable out of production, upon such terms and conditions determined by the division to be just and reasonable, and allowing an appropriate charge for interest for such service payable out of such owner's share of production, provided that any nonconsenting working interest owner being so carried shall be deemed to have relinquished to the unit operator all of its operating rights and working interest in and to the unit until his share of the costs, service charge and interest are repaid to the unit operator;

G. a provision designating the unit operator and providing for the supervision and conduct of the unit operations, including the selection, removal or substitution of an operator from among the working interest owners to conduct the unit operations;

H. a provision for a voting procedure for the decision of matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to its unit participation;

I. the time when the unit operation shall commence and the manner in which, and the circumstances under which, the operations shall terminate and for the settlement of accounts upon such termination; and

J. such additional provisions that are found to be appropriate for carrying on the unit operations and for the protection of correlative rights and the prevention of waste.

70-7-8 RATIFICATION OR APPROVAL OF PLAN BY OWNERS.--

A. No order of the division providing for unit operations shall become effective unless and until the plan for unit operations prescribed by the division has been approved in writing by those persons who, under the division's order, will be required initially to pay at least seventy-five percent of the costs of the unit operations, and also by the owners of at least seventy-five percent of the production or proceeds thereof

that will be credited to interests which are free of cost such as royalties, overriding royalties and production payments, and the division has made a finding either in the order providing for unit operations or in a supplemental order, that the plan for unit operations has been so approved. Notwithstanding any other provisions of this section, if seventy-five percent or more of the unit area is owned, as to working interest, by one working interest owner, such working interest owner must be joined by at least one other working interest owner in ratifying and approving the plan of unit operations, unless such working interest in said unit area; provided, however, if a single owner is one who, under the division's order will be required initially to pay at least twenty-five percent, but not more than fifty percent, of the costs of unit operation, such owner must be joined by at least one other owner of the same type interest in disapproving, or failure to approve, the plan of unit operations to defeat the plan.

B. If one owner is the owner of at least twenty-five percent, but not more than fifty percent, of the production or proceeds thereof that will be credited to interests which are free of costs, such owner must be credited to interests which are free of costs, such owner must be joined by at least one other owner of the same type interest in disapproving, or failure to approve, the plan of unit operations to defeat the plan.

C. If the persons owning the required percentage of interest in the unit area do not approve the plan for unit operations within a period of six months from the date on which the order providing for unit operations is made, such order shall cease to be of further force and effect and shall be revoked by the division, unless the division shall extend the time for ratification for good cause shown.

D. When the persons owning the required percentage of interest in the unit area have approved the plan for unit operations, the interests of all persons in the unit are unitized whether or not such persons have approved the plan of unitization in writing.

70-7-9 AMENDMENT OF PLAN OF UNITIZATION.--An order providing for unit operations may be amended by an order made by the division in the same manner and subject to the same conditions as an original order providing for unit operations, provided:

A. if such an amendment affects only the rights and interests of the working interest owners, the approval of the amendment by the royalty owners shall not be required; and

B. no such amendment shall change the percentage for the allocation of oil and gas as established for any separately owned tract by the original order, except with the consent of all working interest owners and royalty owners in such tract, or change the percentage for the allocation of costs as established for any separately owned tract by the original order, except with the consent of all working interest owners in such tract.

"70-7-10 PREVIOUSLY ESTABLISHED UNITS.--The division, by order, may provide for the unit operation of a pool or parts thereof that embrace a unit area established by a previous order of the division. Such order, in providing for the allocation of unit production, shall first treat the unit area previously established as a single tract, and the portion of the unit production allocated thereto shall then be allocated among the separately owned tracts included in such previously established unit area in the same proportions as those specified in the previous order."

"70-7-11 UNIT OPERATIONS OF LESS THAN AN ENTIRE POOL.--An order may provide for unit operation on less than the whole of a pool where the unit area is of such size and shape as may be reasonably suitable for that purpose, and the conduct thereof will have no adverse effect upon other portions of the pool."

"70-7-12 OPERATION--EXPRESSED OR IMPLIED COVENANTS.--All operations, including but not limited to, the commencement, drilling or operation of a well upon any portion of the unit area shall be deemed for all purposes the conduct of such operations upon each separately owned tract in the unit area by the several owners thereof. The portion of the unit production allocated to a separately owned tract in a unit area shall, when produced, be deemed, for all purposes, to have been actually produced from such tract by a well drilled thereon. Operations conducted pursuant to an order of the division providing for unit operations shall constitute a fulfillment of all the express or implied obligations for each lease or contract covering lands in the unit area to the extent that compliance with such obligations cannot be had because of the order of the division."

70-7-13 INCOME FROM UNITIZED SUBSTANCES.--The portion of the unit production allocated to any tract, and the proceeds from the sale thereof, shall be the property and income of the several persons to whom, or to whose credit, the same are allocated or payable under the order providing for unit operations.

70-7-14 LIEN FOR COSTS.--Subject to such reasonable limitation as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the leasehold estate and other oil and gas rights (exclusive of a one-eighth royalty interest or exclusive of the interest provided in the unit operating plan which allocates costs, if it is different than one-eighth) in and to each separately owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately owned tract.

70-7-15 LIABILITY FOR EXPENSES.--The obligation or liability of each working interest owner in the several separately owned tracts in the unit for the payment of unit expense at all times shall be several and not joint or collective, and a working interest owner shall not be chargeable with, obligated or liable for,

directly or indirectly, more than the amount apportioned, assessed or otherwise charged to his interest in the separately owned tract pursuant to the order of unitization.

"70-7-16 DIVISION ORDERS.--

A. No division order or other contract relating to the sale or purchase of production from a separately owned tract shall be terminated by the order providing for unit operations, but shall remain in force and apply to oil and gas allocated to such tract until terminated in accordance with the provisions thereof.

B. For purposes of this section, "division order" shall mean a contract of sale to the purchaser of oil and gas."

70-7-17 PROPERTY RIGHTS.--Except to the extent that the parties affected so agree, no order providing for unit operations shall be construed to result in a transfer of all or any part of the title of any person to the oil and gas rights in any tract in the unit area. All property, whether real or personal, that may be acquired in the conduct of unit operations hereunder shall be acquired for the account of the working interest owners within the unit area, and shall be the property of such working interest owners in the proportion that the costs of unit operations are charged.

"70-7-18 EXISTING RIGHTS, RIGHTS IN UNLEASED LAND, AND ROYALTIES AND LEASE BURDENS.--Property rights, leases, contracts, and other rights or obligations shall be regarded as amended and modified only to the extent necessary to conform to the provisions and requirements of the Statutory Unitization Act and to any valid order of the division providing for the unit operation of a pool or a part thereof, but otherwise shall remain in full force and effect. A one-eighth part of the production allocated to each tract under an order providing for the unit operation of a pool or a part thereof, shall in all events be and remain free and clear of any costs or expense of developing or operating the unit and of any lien therefor as an encumbered source from which to pay the royalties or other cost-free obligations due or payable with respect to the production from such tract. If a lease or other contract pertaining to a tract or interest stipulates a royalty, overriding royalty, production payment, or other obligation in excess of one-eighth of the production or proceeds therefrom, then the working interest owner subject to such excess payment or other obligation shall bear and pay the same."

70-7-19 AGREEMENTS NOT VIOLATIVE OF LAWS GOVERNING MONOPOLIES OR RESTRAINT OF TRADE.--No agreement between or among lessees or other owners of oil and gas rights in oil and gas properties entered into pursuant hereto or with a view or for the purpose of bringing about the unitized development or operation of such properties, shall be held to violate any of the statutes of this state prohibiting monopolies or acts, arrangements, agreements, contracts, combinations or conspiracies in restraint of trade or commerce.

70-7-20 EVIDENCE OF UNIT TO BE RECORDED.--A copy of each unit agreement shall be recorded in the office of the county clerk of the county or counties in which the unit is situated.

"70-7-21 UNLAWFUL OPERATION.--From and after the date designated by the division that a unit plan shall become effective, the operation of any well producing from the pool within the area subject to said unit plan, by persons other than persons acting under the authority of the unit plan, or except in the manner and to the extent provided in such unit plan, shall be unlawful and is hereby prohibited."

70-30-4 OIL AND GAS CONSERVATION TAX LEVIED--COLLECTED BY COMMISSION--RATE--INTEREST OWNER'S LIABILITY TO STATE--INDIAN LIABILITY.--

A. There is levied and shall be collected by the oil and gas accounting commission a tax on all products which are severed and sold. The measure of the tax shall be nineteen one-hundredths of one percent of the taxable value of sold products. Every interest owner shall be liable for this tax to the extent of his interest in the value of such products, or to the extent of his interest as may be measured by the value of such products. Provided, any Indian tribe, Indian pueblo or Indian shall be liable for this tax to the extent authorized or permitted by law.

B. In the event the unencumbered balance in the oil and gas reclamation fund equals or exceeds one million dollars (\$1,000,000) for any one-month period computed after payment of the tax for that month, then the tax levied by Subsection A of this section shall be reduced by one one-hundredths of one percent and no funds collected by the tax shall be deposited in the oil and gas reclamation fund, notwithstanding the provisions of Section 7-30-14 MSA 1978. When the unencumbered balance in the oil and gas reclamation fund is less than or equal to five hundred thousand dollars (\$500,000), then the tax levied by Subsection A of this section shall be increased by one one-hundredths of one percent and the additional funds shall be deposited in accordance with the provisions of Section 7-30-14 MSA 1978.

7-30-14 DISPOSITION OF OIL CONSERVATION FUND.--The oil conservation fund, or so much thereof as may be necessary, is hereby appropriated to the energy and minerals department to be by it expended in the performance of its duties; provided, however, that an amount equal to one-hundredths of one percent of the taxable value of sold products shall be deposited in the oil and gas reclamation fund to be used by the oil conservation division in carrying out the provisions of the Oil and Gas Act.

"74-6-2 DEFINITIONS.--As used in the Water Quality Act:

A. "water contaminant" means any substance which alters the physical, chemical or biological qualities of water;

B. "water pollution" means introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or to unreasonably interfere with the public welfare or the use of property;

C. "wastes" means sewage, industrial wastes or any other liquid, gaseous or solid substance which will pollute any waters of the state;

D. "sewer system" means pipelines, conduits, pumping stations, force mains or any other structures, devices, appurtenances or facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal;

E. "treatment works" means any plat or other works used for the purpose of treating, stabilizing or holding wastes;

F. "sewerage system" means a system for disposing of wastes, either by surface or underground methods, and includes sewer systems, treatment works, disposal wells and other systems;

G. "water" means all water including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water;

H. "person" means the state or any agency, institution or political subdivision thereof, any public or private corporation, individual, partnership, association or other entity, and includes any officer, or governing or managing body of any political subdivision or public or private corporation;

I. "commission" means the water quality control commission;

J. "constituent agency" means, as the context may require, any or all of the following agencies of the state:

- (1) the environmental improvement division of the health and environment department;
- (2) the state engineer and the interstate stream commission;
- (3) the New Mexico department of game and fish;
- (4) the oil conservation commission;
- (5) the state parks and recreation commission;
- (6) the New Mexico department of agriculture;
- (7) the state natural resource conservation commission; and
- (8) the New Mexico bureau of mines; and

K. "new source" means any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance applicable to the source."

74-6-3 WATER QUALITY CONTROL COMMISSION CREATED.--

A. There is created the "water quality control commission" consisting of:

(1) the director of the environment improvement division of the health and environment department or a member of his staff designated by him;

(2) the director of the New Mexico department of game and fish or a member of his staff designated by him;

(3) the state engineer or a member of his staff designated by him;

(4) the secretary of the oil conservation commission or a member of his staff designated by him;

(5) the director of state park and recreation commission or a member of his staff designated by him;

(6) the director of the New Mexico department of agriculture or a member of his staff designated by him;

(7) the executive secretary of the state natural resource conservation commission or a member of his staff designated by him;

(8) the director of the New Mexico bureau of mines or a member of his staff designated by him; and

(9) a representative of the public to be appointed by the governor for a term of four years and who shall be compensated from the budgeted funds of the health and environment department in accordance with the provisions of the Per Diem and Mileage Act.

B. No member of the commission shall receive or shall have received, during the previous two years, a significant portion of his income directly or indirectly from permit holders or applicants for a permit and shall, upon the acceptance of his appointment and prior to the performance of any of his duties, file a statement of disclosure with the secretary of state disclosing any amount of money or other valuable consideration, and its source, the value of which is in excess of ten percent of his gross personal income in each of the preceding two years, that he received directly or indirectly from permit holders or applicants for permits required under the Water Quality Act.

C. The commission shall elect a chairman and other necessary officers and shall keep a record of its proceedings.

D. A majority of the commission constitutes a quorum for the transaction of business, but no action of the commission is valid unless concurred in by five or more members present at a meeting.

E. The commission is the state water pollution control agency for this state for all purposes of the Federal Water Pollution Control Act, the Water Quality Act of 1965 and the Clean Waters Restoration Act of 1966, and may take all action necessary and appropriate to secure to this state, its political subdivisions or interstate agencies the benefits of these acts.

F. The commission is administratively attached, as defined in the Executive Reorganization Act, to the health and environment department.

74-6-4 DUTIES AND POWERS OF COMMISSION.—The commission:

A. May accept and supervise the administration of loans and grants from the federal government and from other sources, public or private, which loans and grants shall not be expended for other than the purposes for which provided;

B. shall adopt a comprehensive water quality program and develop a continuing planning process;

C. Shall adopt water quality standards as a guide to water pollution control;

D. shall adopt, promulgate and publish regulations to prevent or abate water pollution in the state or in any specific geographic area or watershed of the state or in any part thereof, or for any class of waters. Regulations shall not specify the method to be used to prevent or abate water pollution, but may specify a standard of performance for new sources which reflects the greatest degree of effluent reduction which the commission determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge or pollutants. In making its regulations, the commission shall give weight it deems appropriate to all facts and circumstances, including but not limited to:

(1) character and degree of injury to or interference with health, welfare and property;

(2) the public interest, including social and economical value of the sources of water contaminants;

(3) technical practicability and economic reasonableness of reducing or eliminating water contaminants from the sources involved and previous experience with equipment and methods available to control the water contaminants involved;

(4) successive uses, including but not limited to, domestic, commercial, industrial, pastoral, agricultural, wildlife and recreational uses;

(5) feasibility of a user or a subsequent user treating the water before a subsequent use; and

(6) property rights and accustomed uses;

E. shall assign responsibility for administering its regulations to constituent agencies so as to assure adequate coverage and prevent duplication of effort. To this end, the commission may make such classification of waters and sources of water contaminants as will facilitate the assignment of administrative responsibilities to constituent agencies. The commission shall also hear and decide disputes between constituent agencies as to jurisdiction concerning any matters within the purpose of the Water Quality Act (74-6-2 to 74-6-13). In assigning responsibilities to constituent agencies, the commission shall give priority to the primary interests of the constituent agencies. The environmental improvement agency shall provide testing and other technical services;

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F. may enter into or authorize constituent agencies to enter into agreements with the federal government or other state governments for purposes consistent with the Water Quality Act, and receive and allocate to constituent agencies funds made available to the commission;

G. may grant an individual variance from any regulation of the commission, whenever it is found that compliance with the regulation will impose an unreasonable burden upon any lawful business, occupation or activity. The commission may grant a variance conditioned upon a person effecting a particular abatement of water pollution within a reasonable period of time. Any variance shall be granted for a period of time specified by the commission. The commission shall adopt regulations specifying the procedure under which variances may be sought, which regulations shall provide for the holding of a public hearing before any variance may be granted;

H. may adopt regulations to require the filing with it or a constituent agency, of proposed plans and specifications for the construction and operation of new sewer systems, treatment works or sewerage systems or extensions, modifications of or additions to new or existing sewer systems, treatment works or sewerage systems. Filing with or approval by the federal housing administration of plans for an extension to an existing, or construction of a new sewerage system intended to serve a subdivision substantially residential in nature shall be deemed compliance with all provisions of this subsection;

I. may adopt regulations requiring notice to it or a constituent agency of intent to introduce or allow the introduction of water contaminants into waters of the state; and

J. may adopt regulations establishing pretreatment standards that prohibit or control the introduction into publicly owned sewerage systems of water contaminants which are not susceptible to treatment by the treatment works or which would interfere with the operation of the treatment works.

74-6-5 PERMITS--APPEALS--PENALTY.--

A. By regulation the commission may require persons to obtain from a constituent agency designated by the commission a permit for the discharge of any water contaminant either directly or indirectly into water.

B. Prior to the issuance of a permit, the constituent agency may require the submission of plans, specifications and other relevant information which it deems necessary.

C. The commission, shall by regulation set the dates upon which applications for permits must be filed and designate the time periods within which the constituent agency must, after the filing of an application for a permit, either grant the permit, grant the permit subject to conditions or deny the permit.

D. The constituent agency may deny any application for a permit if:

(1) it appears that the effluent would not meet applicable state or federal effluent regulations or limitations;

(2) any provision of the Water Quality Act 74-6-2 to 74-6-13 would be violated; or

(3) it appears that the effluent would cause any state or federal stream standard to be exceeded.

E. The commission shall by regulation develop procedures which will ensure that the public, affected governmental agencies, and any other state whose water may be affected, shall receive notice of each application for issuance or modification of a permit. No ruling shall be made on any application for a permit without opportunity for a public hearing at which all interested persons shall be given a reasonable chance to submit data, views or arguments orally or in writing; and to examine witnesses testifying at the hearing.

F. Permits shall be issued for fixed terms not to exceed five (5) years.

G. By regulation the commission may impose reasonable conditions upon permits requiring permittees to:

(1) install, use and maintain effluent monitoring devices;

(2) sample effluents in accordance with methods and at locations and intervals as may be prescribed by the commission;

(3) establish and maintain records of the nature and amounts of effluents and the performance of effluent control devices;

(4) provide any other information relating to the discharge of water contaminants; and

(5) notify a constituent agency of the introduction of new water contaminants from a new source and of a substantial change in volume or character of water contaminants being introduced from sources in existence at the time of the issuance of the permit.

H. The commission may provide by regulation a schedule of application fees for permits not exceeding the estimated cost of investigation and issuance of permits. Fees are to be paid at the time the application for the permit is filed. Fees collected pursuant to this section shall be deposited in the general fund.

I. The issuance of a permit does not relieve any person from the responsibility of complying with the provisions of the Water Quality Act and any applicable regulations of the commission.

J. A permit may be terminated or modified by the constituent agency which issued it previous to its date of expiration for any of the following causes:

(1) violation of any condition of the permit;

(2) obtaining the permit by misrepresentation or failure to disclose fully all relevant facts;

(3) violation of any provisions of the Water Quality Act;

(4) violation of any applicable state or federal effluent regulations; or

(5) change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

K. Permits issued, denied, modified or terminated under this section shall not be deemed a major state action significantly affecting the quality of the human environment within the meaning of section 12-20-6(C) NMSA 1953.

L. If the constituent agency denies, terminates or modifies a permit, or grants a permit subject to condition, the constituent agency must notify the applicant or permittee by certified mail of the action taken and the reasons therefor. If the applicant or permittee is dissatisfied with the action taken by the constituent agency, he may file a petition for hearing before the commission. The petition must be made in writing to the director of the constituent agency within thirty (30) days after notice of the constituent agency's action has been received by the applicant or permittee. Unless a timely request for hearing is made, the decision of the constituent agency shall be final.

M. If a timely petition for hearing is made, the commission shall hold a hearing within thirty (30) days after receipt of the petition. The constituent agency shall notify the petitioner by certified mail of the date, time and place of the hearing. Provided, that if the commission upon receipt of the petition deems the basis for the petition for hearing by the commission is affected with substantial public interest, it shall ensure that the public shall receive notice of the date, time and place of the hearing and shall be given a reasonable chance to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing. Any public member submitting data, views or arguments orally or in writing shall be subject to examination at the hearing. In the hearing, the burden of proof shall be upon the petitioner. The commission may designate a hearing officer to take evidence in the hearing. Based upon the evidence presented at the hearing, the commission shall sustain, modify or reverse the action of the constituent agency.

N. If the petitioner requests, the hearing shall be recorded at the cost of the petitioner. Unless the petitioner requests that the hearing be recorded, the decision of the commission shall be final.

O. A petitioner may appeal the decision of the commission by filing with the court of appeals a notice of appeal within thirty (30) days after the date the decision is made. The appeal must be on the record made at the hearing. The petitioner shall certify in his notice of appeal that arrangements have been made with the commission for preparation of a sufficient number of transcripts of the record of the hearing on which the appeal depends to support his appeal to the court, at the expense of the petitioner, including two (2) copies which he shall furnish to the commission.

P. A person who violates any provision of this section is guilty of a misdemeanor and shall be punished by a fine of not less than three hundred dollars (\$300) nor more than ten thousand dollars (\$10,000) per day, or by imprisonment for not more than one(1) year, or both.

Q. In addition to the remedy provided above, the trial court may impose a civil penalty for a violation of any provision of this section not exceeding five thousand dollars (\$5,000) per day.

74-6-6 ADOPTION OF REGULATIONS--NOTICE AND HEARING.--No regulation or water quality standard or amendment or repeal thereof shall be adopted until after a public hearing within the area of the state concerned; provided that the commission may adopt water quality standards on the basis of the record of hearing held by the New Mexico department of public health prior to the effective date of the Water Quality Act

(74-6-2 to 74-6-13) if those hearings were held in general conformance with the provisions of this section. Hearings on regulations of statewide application shall be held at Santa Fe. Notice of the hearing shall be given at least thirty (30) days prior to the hearing date and shall state the subject, the time and the place of the hearing and the manner in which interested persons may present their views. The notice shall also state where interested persons may secure copies of any proposed regulation or water quality standard. The notice shall be published in a newspaper of general circulation in the area affected. Reasonable effort shall be made to give notice to all persons who have made a written request to the commission for advance notice of its hearings. At the hearing, the commission shall allow all interested persons reasonable opportunity to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing. The commission may designate a hearing officer to take evidence in the hearing. Any person heard or represented at the hearing shall be given written notice of the action of the commission. No regulation or water quality standard or amendment or repeal thereof adopted by the commission shall become effective until thirty (30) days after its filing with the Supreme Court law librarian.

74-6-7 VALIDITY OF REGULATION--JUDICIAL REVIEW.--

A. Any person who is or may be affected by a regulation adopted by the commission may appeal to the court of appeals for further relief. All such appeals shall be upon the record made at the hearing, and shall be taken to the court of appeals within thirty (30) days after filing of the regulation under the State Rules Act (71-6-23, 71-7-1 to 71-7-3, 71-7-5 to 71-7-10).

B. The procedure for perfecting an appeal to the court of appeals under this section consists of the timely filing of a notice of appeal with a copy attached of the regulation from which the appeal is taken. The appellant shall certify in his notice of appeal that arrangements have been made with the commission for preparation of a sufficient number of transcripts of the record of the hearing on which the appeal depends to support his appeal to the court, at the expense of the appellant, including three(3) copies which he shall furnish to the commission.

C. Upon appeal, the court of appeals shall set aside the regulation only if found to be:

- (1) arbitrary, capricious or an abuse of discretion;
- (2) not supported by substantial evidence in the record or reasonably related to the prevention or abatement of water pollution; or
- (3) otherwise not in accordance with law.

74-6-8 DUTIES OF CONSTITUENT AGENCIES.--Each constituent agency shall administer regulations adopted pursuant to the Water Quality Act (74-6-2 to 74-6-13), responsibility for the administration of which has been assigned to it by the commission.

74-6-9 POWERS OF CONSTITUENT AGENCIES.--Each constituent agency may:

A. receive and expend funds appropriated, donated or allocated to the constituent agency for purposes consistent with the Water Quality Act (74-6-2 to 74-6-13);

B. develop facts and make studies and investigations and require the production of documents necessary to carry out the responsibilities assigned to the constituent agency. The result of any investigation shall be reduced to writing and a copy thereof furnished to the commission and to the owner or occupant of the premises investigated;

C. recommend regulations for adoption by the commission;

D. report to the commission and to other constituent agencies water pollution conditions that are believed to require action where the circumstances are such that the responsibility appears to be outside the responsibility assigned to the agency making the report;

E. make every reasonable effort to obtain voluntary co-operation in the prevention or abatement of water pollution; and

F. upon presentation of proper credentials, enter at reasonable times upon or through any premises in which an effluent source is located or in which are located any records required to be maintained by regulations of the commission; provided that entry into any private residence without the permission of the owner shall be only by order of the district court for the county in which the residence is located and that, in connection with any entry provided for in this subsection, the constituent agency may:

- (1) have access to any copy of the records;
- (2) inspect any monitoring equipment or methods required to be installed by regulations of the commission; and
- (3) sample any effluents.

74-6-10 ABATEMENT OF WATER POLLUTION.--

A. If, as a result of investigation, a constituent agency has good cause to believe that any person is violating or threatens to violate any regulation of the commission for the enforcement of which the agency

is responsible, and, if the agency is unable within a reasonable time to obtain voluntary compliance, the commission may initiate proceedings in the district court of the county in which the violation occurs. The commission may seek injunctive relief against any violation or threatened violation of regulations, and such relief shall be subject to the continuing jurisdiction and supervision of the district court and the court's powers of contempt. The attorney general shall represent the commission.

B. In addition, to the remedies provided in this section, the district court may impose civil penalties not exceeding one thousand dollars (\$1,000) for each violation of the Water Quality Act (74-6-2 to 74-6-13) or any regulation of the commission, and may charge the person convicted of such violation with the reasonable cost of treating or cleaning up waters polluted. Each day during any portion of which a violation occurs constitutes a separate violation.

C. Any party aggrieved by any final judgment of the district court under this section may appeal to the court of appeals as in other civil actions.

D. As an additional means of enforcing the Water Quality Act or any regulation of the commission, the commission may accept an assurance of discontinuance of any act or practice deemed in violation of the Water Quality Act or any regulation adopted pursuant thereto, from any person engaging in, or who has engaged in, such act or practice, signed and acknowledged by the chairman of the commission and the party effected. Any such assurance shall specify a time limit during which such discontinuance is to be accomplished.

74-6-11 EMERGENCY PROCEDURE.—Notwithstanding any other provision of the Water Quality Act (74-6-2 to 74-6-13), if any person is causing or contributing to water pollution of such characteristics and duration as to create an emergency which requires immediate action to protect human health, the director of the environmental improvement agency shall order the person to immediately abate the water pollution creating the emergency condition. If the effectiveness of the order is to continue beyond forty-eight (48) hours, the director of the environmental improvement agency shall file an action in the district court, not later than forty-eight (48) hours after the date of the order, to enjoin operations of any person in violation of the order.

74-6-12 LIMITATIONS UPON OPERATION OF ACT.—

A. The Water Quality Act (74-6-2 to 74-6-13) does not grant to the commission or to any other entity the power to take away or modify property rights in water, nor is it the intention of the Water Quality Act to take away or modify such rights.

B. Effluent data obtained by the commission or a constituent agency shall be available to the public. Other records, reports or information obtained by the commission or a constituent agency shall be available to the public, except upon a showing satisfactory to the commission or a constituent agency that the records, reports or information or a particular part thereof, if made public, would divulge methods or processes entitled to protection as trade secrets.

C. The Water Quality Act does not authorize the commission to adopt any regulation with respect to any condition or quality of water if the water pollution and its effects are confined entirely within the boundaries of property within which the water pollution occurs when the water does not combine with other waters.

D. The Water Quality Act does not grant to the commission any jurisdiction or authority affecting the relation between employers and employees with respect to or arising out of any condition of water quality.

E. The Water Quality Act does not supersede or limit the applicability of any law relating to industrial health, safety or sanitation.

F. In the adoption of regulations and water quality standards and in any action for enforcement of the Water Quality Act and regulations adopted thereunder, reasonable degradation of water quality resulting from beneficial use shall be allowed.

G. The Water Quality Act does not permit the adoption of regulations or other action by the commission or other constituent agencies which would interfere with the exclusive authority of the oil conservation commission over all persons and things necessary to prevent water pollution as a result of oil or gas operations through the exercise of the power granted to the oil conservation commission under section 70-2-12 MMSA 1978, and other laws conferring power on the oil conservation commission.

74-6-13 CONSTRUCTION OF ACT.—The Water Quality Act (74-6-2 to 74-6-13) provides additional and cumulative remedies to prevent, abate and control water pollution, and nothing abridges or alters rights of action or remedies in equity under the common law or statutory law, criminal or civil. No provision of the Water Quality Act or any act done by virtue thereof estops the state or any political subdivision or person as owner of water rights or otherwise, in the exercise of their rights in equity or under the common law or statutory law to suppress nuisances or to abate pollution.

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STATEMENT OF LEGAL AUTHORITY
OF THE STATE OF NEW MEXICO BY AND THROUGH
ITS OIL CONSERVATION DIVISION OF THE ENERGY
AND MINERALS DEPARTMENT TO CONDUCT AN
UNDERGROUND INJECTION CONTROL PROGRAM

GENERAL

The legal basis upon which the Oil Conservation Division relies as its authority to administer an Underground Injection Control Program under the federal Safe Drinking Water Act, as amended, depends on a valid enactment of a state regulatory scheme to regulate oil and gas operations in the State.

From a historical viewpoint, the New Mexico "Oil and Gas Act" setting up such a regulatory scheme was initially adopted in 1935 generally for the purpose of encouraging conservation, preventing waste, and requiring sound completion and recompletion practices in the exploration and production of oil and gas reserves.

In order to keep abreast of, and encouraging advances in drilling techniques and in improving drilling equipment and materials, the Oil and Gas Act has been modified and amended from time to time, as necessary, to its current form. As a result, current regulation of oil and gas operations in New Mexico insures that all operators will follow standard and effective conservation practices. Water protection and oil and gas reservoir protection are two of the more important practices which must be observed by oil and gas operators. Essentially both of these practices deal with the integrity of well bores.

Fresh water strata containing underground sources of drinking water are protected by casing set below the deepest zone that might contain such water. The casing is cemented sufficiently to prevent migration of fluids from and into each stratum penetrated. Drilling muds, oil, and water recovered from testing, and the residue from formation treatments are confined or disposed of, so that pollution of the surface, ponds and other watercourses is avoided.

Dry holes must be plugged and abandoned in such a manner that subsurface salt water or brines will be confined to the stratum in which it is found, thereby protecting underground sources of drinking water.

Each oil, gas, and water stratum penetrated by a well must be permanently sealed by casing and cement. Cement must be allowed to set a minimum length of time to assure adequate cement strength before continued drilling, completion or recompletion procedures are continued. Once the required time has elapsed, prescribed testing procedures must be followed. Should the tests reveal defective cementing, necessary remedial work must be done to correct the deficiency.

Research of case law in New Mexico as to the constitutionality and validity of the Oil and Gas Act, as amended, leads to the conclusion that there has never been a serious challenge to its enactment. Obviously, there have been numerous cases challenging the action taken by the Oil Conservation Commission or the Division (both have concurrent jurisdiction under the Oil and Gas Act) in particular cases. None of these researched cases have, however, invalidated statutory authority granted to the Division for administering the provisions of the Oil and Gas Act.

SPECIFIC STATUTORY AUTHORITY

The Division derives its essential source of authority for protection of underground sources of drinking water from the two statutes.

Section 70-2-11(A), New Mexico Statutes Annotated, 1978 Compilation states:

"The Division is hereby empowered, and it is its duty, to prevent waste prohibited by this act and to protect correlative rights as in this act provided. To that end, the division is empowered to make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereof."

The pertinent portions of Section 70-2-12 NMSA, 1978 Compilation, which clearly and specifically outline the Division's powers, insofar as administration of a program such as the Underground Injection Control Program, are as follows:

"A. Included in the power given to the division is the authority to collect data; to make investigations and inspections; to examine properties, leases, papers, books and records; to examine, check, test and gauge oil and gas wells, and tanks, plants, refineries and all means and modes of transportation and equipment; to hold hearings; to provide for the keeping of records and the making of reports and for the checking of the accuracy thereof; to limit and prorate production of crude petroleum oil or natural gas, or both, as in this act provided; to require either generally or in particular areas certificates of clearance or tenders in connection with the transportation of crude petroleum oil or natural gas or any products thereof, or both such oil and products, or both such natural gas and products.

B. Apart from any authority, express or implied, elsewhere given to or existing in the division by virtue of this act or the statutes of this state, the division is hereby authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated herein, viz:

(1) To require dry or abandoned wells to be plugged in such a way as to confine the crude petroleum oil, natural gas or water in the strata in which they are found, and to prevent them from escaping into other strata; the division may require a bond of not to exceed ten thousand dollars (\$10,000) conditioned for the performance of such regulations;

(2) to prevent crude petroleum oil, natural gas or water from escaping from strata in which they are found into another stratum or other strata;

.....

(4) to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas, or both oil and gas, in paying quantities, and to prevent the premature and irregular encroachment of water, or any other kind of water encroachment, which reduces or tends to reduce the total ultimate recovery of crude petroleum oil or gas, or both such oil and gas, from any pool;

.

(6) to prevent "blow-outs" and "caving" in the sense that the conditions indicated by such terms are generally understood in the oil and gas business;

(7) to require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties;

.

(13) to regulate the methods and devices employed for storage in this state of oil or natural gas or of any other substance into any pool in this state for the purpose of repressuring, cycling, pressure maintenance or secondary recovery operation;

(14) to permit the injection of natural gas or of any other substance into any pool in this state for the purpose of repressuring, cycling, pressure maintenance or secondary recovery operation;

(15) to regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas, or both, and to direct surface or subsurface disposal of such water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the state engineer; *

.

(18) to spend the oil and gas reclamation fund and do all acts necessary and proper to plug dry and abandoned oil and gas wells in accordance with the provisions of the Oil and Gas Act (70-2-1 to 70-2-36 NMSA 1978) and the Public Purchases Act (13-1-1 to 13-1-27 NMSA, 1978) including disposing of salvageable equipment and material removed from oil and gas wells being plugged by the state."

RULES AND REGULATIONS

The Division's current regulations, some of which have been promulgated or revised specifically to accommodate the Underground Injection Control Program, have all been promulgated only after proper notice and hearing. While there is always a risk that a regulation or regulations may be legally challenged, it is submitted that appropriate procedural safeguards have been taken by the Division to avoid invalidation of any of its rules and regulations on procedural grounds.

Because other portions of the Division's demonstration will contain a concise explanation and description of pertinent regulations, it suffices to say in this context that requirements of the Underground Injection Program as required by the federal Environmental Protection Agency are being satisfied.

SPECIFIC REQUIREMENTS OF SECTION 1425 OF THE SAFE DRINKING WATER ACT, AS AMENDED

The specific portions of Section 1425 pertinent to this statement state in part:

*See Program Description Exhibit XIII for explanation of designation of fresh water supplies by State Engineer.

" . . . the State may demonstrate that (the Class II) portion of the State program meets the requirements of subparagraphs (A) through (D) of Section 1421 (b) (1) and represents an effective program (including adequate recordkeeping and reporting) to prevent underground injection which endangers drinking water sources."

A discussion of the requirements of Section 1421 (b) (1), insofar as they relate to New Mexico's Class II program, follows:

(1) Section 1421 (b) (1) (A) requirement that an approvable State program prohibits any underground injection which is not authorized by permit or rule.

By regulation, pursuant to Section 70-2-12 A and B, New Mexico Statutes Annotated, 1978 Compilation, supra, injection of any substance is prohibited by the Division unless and until prior approval of the Division is obtained.

Division Rule 701 (A) states:

"The injection of gas, liquefied petroleum gas, air, water, or any other medium into any reservoir for the purpose of maintaining reservoir pressure for the purpose of secondary or other enhanced recovery or for storage or the injection of water into any formation for the purpose of water disposal shall be permitted only by order of the Division after notice and hearing, unless otherwise provided herein."

Other provisions of the Division's rules and regulations do not grant exceptions to Rule 701 (A) except that under certain circumstances the hearing requirement may be relaxed by the Division where no objections have been submitted to the Division concerning a proposed injection project. Consequently, injection within the jurisdiction of the Division is strictly regulated and may not be accomplished without prior approval of the Division.

(2) Section 1421(b) (1) (B) requirements: (1) that an applicant for a permit must satisfy the State that the underground injection will not endanger drinking water sources, and (2) that no rule be promulgated which authorizes any underground injection which endangers drinking water sources.

An elementary proposition of administrative law requiring no citation is that an administrative agency is as much bound by its own regulations as those it regulates. This proposition is amply supported by case law in New Mexico. In other words, regulations may not be ignored, waived or suspended in a particular case by an agency. However well intentioned, administrative bodies must comply with the law; and it is necessary that they be required to do so, to prevent any possible abuse. Continental Oil Company v. Oil Conservation Commission, 70 N.M. 310, 373 P.2d 809 (1962).

In applying the foregoing standards which the Division, as an administrative body must abide by, there is no question but that the Division, once having promulgated rules and regulations designed to protect underground sources of drinking water, pursuant to valid legislative enactments, is under a mandate to uniformly enforce those regulations. As to specific orders approving particular

Section 70-2-6 NMSA, 1978, it states in part:

"...it (Oil Conservation Division), shall have jurisdiction authority and control of and over all persons, matters or things necessary or proper to enforce effectively the provisions of this Act or any other law of this State relating to the conservation of oil or gas and the prevention of waste of potash as a result of oil and gas operations".

In addition to this general grant of authority over "all persons, matters or things, necessary or proper", Section 70-2-12 entitled "Enumeration of Powers" sets forth specifically the powers of the Division. Section 70-2-12 B. states in part:

"...Apart from any authority, expressed or implied, elsewhere given to or existing in the Division by virtue of this Act or the Statutes of this State, the Division is hereby authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated herein, viz:

...

(14) "To permit the injection of natural gas or of any other substance into any pool in this State for the purpose of repressuring, cycling, pressure maintenance or secondary recovery operations;

(15) "To regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas or both and to direct surface or subsurface disposal of such water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the State Engineer;

The import of the statutory provisions is clearly that the State intends to control all underground injection activities within its boundaries and that the Legislature saw fit to provide the Oil Conservation Division with the appropriate authority to conduct such activities. ¹

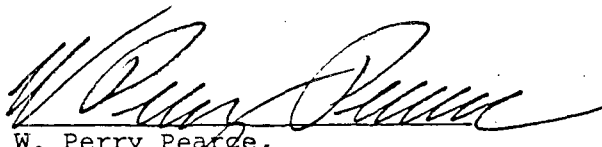
1. The case of Southern Union Company v. New Mexico Public Service Commission, 82 NM 405, 482 P.2d 913 (1971) held that at least under the terms of the Public Utility Act the word "person" did not include governmental entities. This decision applying to a different statute and a different jurisdictional agency is not determinative of the question of whether or not the State has jurisdiction over federal agency projects. The enabling and empowering sections of the Oil and Gas Act presently under consideration do not rely solely upon the word "person" in establishing the jurisdiction of the Oil Conservation Division. Although the word person or persons appears in the enforcement provisions of the Oil and Gas Act, such language does not disenable the Oil Conservation Division from acting in this case since the State could rely upon the broader scope of its enabling section.

In view of these authorities, underground injection projects conducted by Federal agencies are subject to State regulation.

The same logic and statutory authority should be applied to Part 2 of the question posed by 1421 (b) (1) (D) which is whether or not underground injections by any other person, whether or not occurring on property owned or leased by the United States are subject to control under the proposed underground injection plan. The State statutes set forth immediately above, 70-2-12B. (14) (15), clearly indicate jurisdiction in the State to control the injections. If the proposed injection project is conducted upon lands which are owned or leased by the United States and operated by a non-governmental entity, this analysis is once again applicable.

The congress, as it has set forth in the Safe Drinking Water Act, has clearly indicated that this field has not been and was not intended to be pre-empted by the Federal Government. By allowing for the possibility of State primacy in the UIC program and requiring that federal agencies comply with state requirements, there is shown a contrary interest. That being the case, concurrent jurisdiction in the Federal and State Government lies and consequently the state program will apply to Federal agency projects or those conducted by any operator on federally owned or leased land.

In summary, there appears to be no legal impediment and indeed there are clear state mandates authorizing the Oil Conservation Division to exercise jurisdiction over Class II Wells operated directly by the United States on public lands, operated by private individuals on federal lands or operated by private individuals on private lands. Upon approval of the New Mexico Underground Injection Control Plan, the State of New Mexico intends to exercise such jurisdiction to the extent authorized.


W. Perry Pearce,
Assistant Attorney General
General Counsel to the Oil
Conservation Division

2. Proof that the Oil Conservation Division exercises such jurisdiction over operators on federal land is found in Robert G. Cox v. New Mexico Oil Conservation Commission et al (unreported decision in Case # 11,618 entered May 4, 1978) which decision affirmed the Order of the Commission and the affirmation of the order by the District Court of Eddy County. This commission order denied applicant Cox the right to produce a well, which had been drilled under Department of Interior Permit, for violation of the order of the Commission.

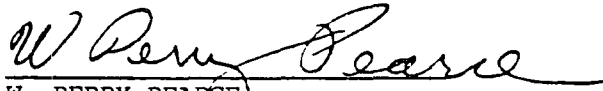
In addition, in the case of OCC v. Roger C. Hanks cause No. 29778 in the District Court of Eddy County, the Commission sought penalty against defendant for operating a salt water disposal on federal land in violation of the terms of Order No. R-4158 of the Commission. This cause was settled upon payment of a fine of \$11,000 and correction of all violations.

CERTIFICATE

STATE OF NEW MEXICO)
)
COUNTY OF SANTA FE)

W. PERRY PEARCE, as Assistant Attorney General for the Oil Conservation Division of the Energy and minerals Department of the State of New Mexico, has prepared and read the foregoing document with full power and authority to do so, and states that the matters and facts set forth therein are true to the best of his information, knowledge and belief; and he further certifies, based upon his examination of appropriate State laws including the Division's rules and regulations that:

- (1) the rules and regulations of the Division do not permit underground injection which will endanger drinking water sources;
- (2) by statute the Division may not promulgate regulations which would authorize any underground injection which endangers drinking water sources;
- (3) the Division is required to inspect, monitor, keep records, and obtain periodic and sundry reports affecting all oil and gas operations including underground water injection under its jurisdiction;
- (4) an Underground Injection Program administered by the Division would apply to underground injection by federal agencies and on lands owned, leased or administered by the United States; and
- (5) the Underground Injection Program as proposed by the Division represents an effective program to prevent underground injection which endangers drinking water.


W. PERRY PEARCE
Assistant Attorney General,
General Counsel to the Oil
Conservation Division

N. M. State Demonstration for Class II Wells

NEW MEXICO

OIL CONSERVATION DIVISION

FORMS RELATED TO INJECTION

C-101	Application for Permit to Drill, Deepen or Plug Back
C-102	Well Location and Acreage Dedication Plat
C-103	Sundry Notices and Reports on Wells
C-105	Well Completion or Recompletion Report and Log
C-108	Application for Authorization to Inject
C-115	Operator's Monthly Report
C-120-A	Monthly Water Disposal Report
C-131	Monthly Gas Storage Report
	One - Well Plugging Bond
	\$50,000 Blanket Plugging Bond
	Notification of Fire, Breaks, Spills, Leaks, and Blowouts
	Field Trip Reports
	Field Trip Summary
	Bradenhead Test Report Forms

USGS FORMS

9-331 C	Application for Permit to Drill, Deepen, or Plug Back
9-331 a	Sundry Notices and Reports on Wells
9-330	Well Completion or Recompletion Report and Log

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

5A. Indicate Type of Lease
STATE ☐ FEE ☐

5. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

a. Type of Work

DRILL ☐

DEEPEN ☐

PLUG BACK ☐

b. Type of Well

OIL
WELL ☐

GAS
WELL ☐

OTHER

SINGLE
ZONE ☐

MULTIPLE
ZONE ☐

1. Name of Operator

7. Unit Agreement Name

8. Farm or Lease Name

9. Well No.

2. Address of Operator

10. Field and Pool, or Wildcat

3. Location of Well

UNIT LETTER _____ LOCATED _____ FEET FROM THE _____ LINE

4. FEET FROM THE _____ LINE OF SEC. _____ TWP. _____ RGE. _____ NMPW

12. County

19. Proposed Depth

19A. Formation

20. Rotary or C.T.

5. Elevations (Show whether DF, RT, etc.)

21A. Kind & Status Plug. Bond

21B. Drilling Contractor

22. Approx. Date Work will start

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP

6. ABOVE SPACE DESCRIBE PROPOSED PROGRAM; IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

7. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

8. Signed _____ Title _____ Date _____

(This space for State Use)

9. APPROVED BY _____ TITLE _____ DATE _____

10. CONDITIONS OF APPROVAL, IF ANY:

All distances must be from the outer boundaries of the Section.

Operator			Lease			Well No.		
Unit Letter	Section	Township	Range	County				
Actual Footage Location of Well:								
feet from the			line and			feet from the		
Ground Level Elev.			Producing Formation			Pool		
						Dedicated Acreage:		
						Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name

Position

Company

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer
and/or Land Surveyor

Certificate No.

0 330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-73

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease
State ☐ Fee ☐

3. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

☐ WELL ☐ GAS WELL ☐ OTHER

7. Unit Agreement Name

8. Farm or Lease Name

9. Well No.

10. Field and Pool, or Wildcat

Name of Operator

Address of Operator

Location of Well

UNIT LETTER _____ FEET FROM THE _____ LINE AND _____ FEET FROM

THE _____ LINE, SECTION _____ TOWNSHIP _____ RANGE _____ NMPM.

15. Elevation (Show whether DF, RT, GR, etc.)

12. County

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

INFORM REMEDIAL WORK ☐PLUG AND ABANDON ☐REMEDIAL WORK ☐ALTERING CASING ☐TEMPORARILY ABANDON ☐COMMENCE DRILLING OPNS. ☐PLUG AND ABANDONMENT ☐WELL OR ALTER CASING ☐CHANGE PLANS ☐CASING TEST AND CEMENT JOBS ☐OTHER ☐OTHER ☐

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED _____

TITLE _____

DATE _____

APPROVED BY _____

TITLE _____

DATE _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease:	
State <input type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.	

1a. TYPE OF WELL		OIL WELL <input type="checkbox"/>		GAS WELL <input type="checkbox"/>		DRY <input type="checkbox"/>		OTHER _____					
1b. TYPE OF COMPLETION		NEW WELL <input type="checkbox"/>		WORK OVER <input type="checkbox"/>		DEEPEN <input type="checkbox"/>		PLUG BACK <input type="checkbox"/>		DIFF. DESVC. <input type="checkbox"/>		OTHER _____	
2. Name of Operator												7. Unit Agreement Name	
3. Address of Operator												8. Farm or Lease Name	
4. Location of Well												9. Well No.	
UNIT LETTER _____ LOCATED _____ FEET FROM THE _____ LINE AND _____ FEET FROM _____												10. Field and Pool, or Wildcat	
THE _____ LINE OF SEC. _____ TWP. _____ RGE. _____ NMPM _____												12. County	
15. Date Spudded		16. Date T.D. Reached		17. Date Compl. (Ready to Prod.)		18. Elevations (DF, RKB, RT, GR, etc.)				19. Elev. Casinghead			
20. Total Depth		21. Plug Back T.D.		22. If Multiple Compl., How Many		23. Intervals Drilled By		Rotary Tools		Cable Tools			
24. Producing Interval(s), of this completion — Top, Bottom, Name										25. Was Directional Survey Made			
26. Type Electric and Other Logs Run										27. Was Well Cored			

28. CASING RECORD (Report all strings set in well)					
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED

29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET

31. Perforation Record (Interval, size and number)				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
				DEPTH INTERVAL			
				AMOUNT AND KIND MATERIAL USED			

3. PRODUCTION							
Date First Production		Production Method (Flowing, gas lift, pumping — Size and type pump)				Well Status (Prod. or Shut-in)	
Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
1. Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)	

4. Disposition of Gas (Sold, used for fuel, vented, etc.)						Test Witnessed By	

5. List of Attachments							

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED _____ TITLE _____ DATE _____

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: _____

Address: _____

Contact party: _____ Phone: _____

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☐ yes ☐ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: _____ Title: _____

Signature: _____ Date: _____

If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

VII. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

WELL NAME (Underline) *Lease Name WELL NO UNIT SEC TWP RNG				INJECTION		TOTAL LIQUIDS PRODUCED			DISPOSITION OF GAS		DISPOSITION OF OIL				OIL ON HAND AT BEG. OF MONTH	BARRELS TO TRANSPOR- TER	OTHER	OIL ON HAND AT END OF MONTH		
VOLUME		PRESS.		MONTHLY OIL ALLOWABLE	ACTUAL BARRELS PRODUCED	BARRELS OF WATER PRODUCED	GAS PRODUCED (MCF)	DAYS PROD.	SOLD	TRANSPOR- TER	OTHER	C O D E	C O D E							
LEASE NAME - Include State Land Lease Number or Federal Lease Number																				
DISTRIBUTION ORIGINAL TO OCC SANTA FE ONE COPY TO OCC DIST. OFFICE ONE COPY TO TRANSPORTER(S)				STATUS CODE F.....FLOWING P.....PUMPING C.....GAS LIFT S.....SHUT IN T.....TEMP ABANDONED I.....INJECTION D.....DISCONTINUED		*OTHER* GAS DISPOSITION CODE X.....USED OFF LEASE D.....USED FOR DRILLING/SPIN G.....GAS LIFT L.....LCST (MCF ESTIMATED) E.....EXPLANATION ATTACHED R.....REPRESSURING OR V.....VENTED U.....USED ON LEASE			*OTHER* OIL DISPOSITION CODE C.....CIRCULATING OIL L.....LCST S.....SEDIMENTATION (BSM) E.....EXPLANATION ATTACHED				I HEREBY CERTIFY THAT THE INFORMATION GIVEN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE							

FORM C-115
 Revised 10-1-76

MONTHLY WATER DISPOSAL REPORT

Submit this report in triplicate to the appropriate District Office, Oil Conservation Division

Disposal System _____
 Disposal System _____
 County _____ Month _____ 19 _____

[illegible]

by certify that the above is true and complete to the best of my knowledge and belief.

arks: _____ Name _____

_____ Company _____

_____ Title _____

ENDING STORAGE (MMCF) _____ Title _____ Date _____

STATE OF NEW MEXICO
ONE-WELL PLUGGING BOND

FOR CHAVES, EDDY, LEA, MCKINLEY, RIO ARRIBA, ROOSEVELT,
SANDOVAL, AND SAN JUAN COUNTIES ONLY

BOND NO. _____
(For Use of Surety Company)

AMOUNT OF BOND _____

COUNTY _____

NOTE: For wells less than 5,000 feet deep, the minimum bond is \$5,000.00*
For wells 5,000 feet to 10,000 feet deep, the minimum bond is \$7,500.00*
For wells more than 10,000 feet deep, the minimum bond is \$10,000.00

* Under certain conditions, a well being drilled under a \$5,000.00 or \$7,500.00 bond may be permitted to be drilled as much as 500 feet deeper than the normal maximum depth, i.e., a well being drilled under a \$5,000.00 bond may be permitted to go to 5,499 feet, and a well being drilled under a \$7,500.00 bond may be permitted to go to 10,500 feet. (See Rule 101)

File with Oil Conservation Division, P.O. Box 2088, Santa Fe 87501

KNOW ALL MEN BY THESE PRESENTS:

That _____, (An individual) (a partnership)
(a corporation organized in the State of _____, with its principal office in the city of _____, State of _____, and authorized to do business
in the State of New Mexico), as PRINCIPAL, and _____, a
corporation organized and existing under the laws of the State of _____,
and authorized to do business in the State of New Mexico, as SURETY, are held firmly bound unto the State of New
Mexico, for the use and benefit of the Oil Conservation Division of New Mexico pursuant to Section 65-3-11, New
Mexico Statutes Annotated, 1953 Compilation, as amended, in the sum of _____
Dollars lawful money of the United States, for the payment of which, well and truly to be made, said PRINCIPAL and
SURETY hereby bind themselves, their successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that:

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO₂) gas leases, or
helium gas leases with the State of New Mexico; and

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO₂) gas leases, or
helium gas leases on lands patented by the United States of America to private individuals, and on lands otherwise owned by private
individuals; and

WHEREAS, The above principal, individually, or in association with one or more other parties, has commenced or
may commence the drilling of one well not to exceed a depth of _____ feet, to prospect for and produce oil
or gas, or carbon dioxide (CO₂) gas or helium gas, or does own or may acquire, own or operate such well, or such well
started by others on land embraced in said State oil and gas leases, or carbon dioxide (CO₂) leases, or helium gas leases,
and on land patented by the United States of America to private individuals, and on land otherwise owned by private
individuals, the identification and location of said well being _____

(Here state exact legal subdivision by 40-acre tract or lot)

_____ Section _____, Township _____ (North) (South), Range _____ (East) (West), N.M.P.M.
_____ County, New Mexico.

NOW, THEREFORE, If the above bounden principal and surety or either of them or their successors or assigns, or any of them, shall
plug said well when dry or when abandoned in accordance with the rules, regulations, and orders of the Oil Conservation Division of New
Mexico in such way as to confine the oil, gas, and water in the strata in which they are found, and to prevent them from escaping into other
strata;

THEN, THEREFORE, This obligation shall be null and void; otherwise and in default of complete compliance with any and all of said
obligations, the same shall remain in full force and effect.

PRINCIPAL

Address
By _____
Signature

Title

(Note: Principal, if corporation, attach corporate seal here.)

SURETY

Address
By _____
Attorney-in-Fact

(Note: Corporate surety attach corporate seal here.)

ACKNOWLEDGEMENT FORM FOR NATURAL PERSONS

STATE OF _____) ss.
COUNTY OF _____)

On this _____ day of _____, 19____, before me personally appeared _____, to me known to be the person (persons) described in and who executed the foregoing instrument and acknowledged that he (they) executed the same as his (their) free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public
My Commission expires _____

ACKNOWLEDGEMENT FORM FOR CORPORATION

STATE OF _____) ss.
COUNTY OF _____)

On this _____ day of _____, 19____, before me personally appeared _____, to me personally known who, being by me duly sworn, did say that he is _____ of _____ and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public
My Commission expires _____

ACKNOWLEDGEMENT FORM FOR CORPORATE SURETY

STATE OF _____) ss.
COUNTY OF _____)

On this _____ day of _____, 19____, before me appeared _____, to me personally known, who, being by me duly sworn, did say that he is _____ of _____ and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public
My Commission expires _____
(Note: Corporate surety attach power of attorney.)

APPROVED BY:

OIL CONSERVATION DIVISION OF NEW MEXICO

By _____

Date _____

STATE OF NEW MEXICO
\$50,000.00 BLANKET PLUGGING BOND

BOND NO. _____

(For Use of Surety Company)

File with Oil Conservation Division, P.O.Box 2088, Santa Fe 87501

KNOW ALL MEN BY THESE PRESENTS:

That _____, (An individual) (a partnership) (a corporation organized in the State of _____, with its principal office in the city of _____, State of _____, and authorized to do business in the State of New Mexico), as PRINCIPAL, and _____, a corporation organized and existing under the laws of the State of _____, and authorized to do business in the State of New Mexico, as SURETY, are held firmly bound unto the State of New Mexico, for the use and benefit of the Oil Conservation Division of New Mexico pursuant to Section 65-3-11, New Mexico Statutes Annotated, 1953 Compilation, as amended, in the sum of Fifty Thousand Dollars (\$50,000.00) lawful money of the United States, for the payment of which, well and truly to be made, said PRINCIPAL and SURETY hereby bind themselves, their successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that:

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO₂) gas leases, or helium gas leases with the State of New Mexico; and

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO₂) gas leases, or helium gas leases on lands patented by the United States of America to private individuals, and on lands otherwise owned by private individuals; and

WHEREAS, The above principal, individually, or in association with one or more other parties, has commenced or may commence the drilling of wells to prospect for and produce oil or gas, or carbon dioxide (CO₂) gas or helium gas, or does own or may acquire, own or operate such well, or such wells started by others on land embraced in said State oil and gas leases, or carbon dioxide (CO₂) gas leases, or helium gas leases, and on land patented by the United States of America to private individuals, and on land otherwise owned by private individuals, the identification and location of said well being expressly waived by both principal and surety hereto.

NOW, THEREFORE, If the above bounden principal and surety or either of them or their successors or assigns, or any of them, shall plug all of said wells when dry or when abandoned in accordance with the rules, regulations, and orders of the Oil Conservation Division of New Mexico in such way as to confine the oil, gas, and water in the strata in which they are found, and to prevent them from escaping into other strata;

THEN, THEREFORE, This obligation shall be null and void; otherwise and in default of complete compliance with any and all of said obligations, the same shall remain in full force and effect.

PROVIDED, HOWEVER, That thirty (30) days after receipt by the Oil Conservation Division of New Mexico of written notice of cancellation from the surety, the obligation of the surety hereunder shall terminate as to property or wells acquired, drilled, or started after said thirty (30) day period but shall continue in effect, notwithstanding said notice, as to property or wells theretofore acquired, drilled or started.

PRINCIPAL

Address
By _____
Signature

Title

(Note: Principal, if corporation, affix corporate seal here.)

SURETY

Address
By _____
Attorney-in-Fact

(Note: Corporate surety affix corporate seal here.)

ACKNOWLEDGEMENT FORM FOR NATURAL PERSONS

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 19____, before me personally appeared _____ to me known to be the person (persons) described in and who executed the foregoing instrument and acknowledged that he (they) executed the same as his (their) free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public

My Commission expires _____

ACKNOWLEDGEMENT FORM FOR CORPORATION

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 19____, before me personally appeared _____ to me personally known who, being by me duly sworn, did say that he is _____ of _____ and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public

My Commission expires _____

ACKNOWLEDGEMENT FORM FOR CORPORATE SURETY

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 19____, before me appeared _____ to me personally known, who, being by me duly sworn, did say that he is _____ of _____ and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Notary Public

My Commission expires _____

(Note: Corporate surety attach power of attorney.)

APPROVED BY:

OIL CONSERVATION DIVISION OF NEW MEXICO

By _____

Date _____

OIL CONSERVATION DIVISION

P. O. BOX 2088

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR					ADDRESS		
REPORT OF	FIRE	BREAK	SPILL	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	ORLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER*
NAME OF FACILITY							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC.	TWP.	RGE.
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK							
DATE AND HOUR OF OCCURENCE				DATE AND HOUR OF DISCOVERY			
WAS IMMEDIATE NOTICE GIVEN?	YES	NO	NOT REQUIRED	IF YES, TO WHOM			
BY WHOM				DATE AND HOUR			
TYPE OF FLUID LOST				QUANTITY OF LOSS		VOLUME RECOVERED	
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO	QUANTITY				
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
DESCRIPTION OF AREA	FARMING		GRAZING		URBAN		OTHER*
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

SIGNED

TITLE

DATE

*SPECIFY

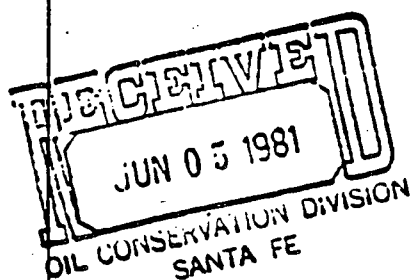
**ATTACH ADDITIONAL SHEETS IF NECESSARY

Name B. W. Weaver Date 5-13-81 Miles 136 District II
Time of Departure 8:00 a.m. Time of Return 5:00 p.m. Car No. 0F659

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature B. W. Weaver

CLASSIFICATION	ACTIVITY	OURS	QUARTER HOURS	
I	2	-	4 Wells	Sec. 18-18-31, Frostman Oil Corp. Shugart 18 Queen Unit Braden head survey, OK
U	I	2	3 Wells	Sec. 22-18-31, Gulf Oil Corp. Littlefield AB Fed. Braden head survey, OK
U	I	2	6 Wells	Sec. 36, 31, 1-T18 & T19-R30 & 31E, Clifford Cone Culwin Queen Unit, Braden head survey, OK
U	I	2	6 Wells	Sec. 10, 11, 15-T18S-R31E, Hudson & Hudson Shugart A, Shugart B, Braden head survey, OK



Mileage

UIC 136

RFA _____

Other _____

Per Diem

UIC 9.00

RFA _____

Other _____

Hours

UIC 8

RFA _____

Other _____

TYPE INSPECTION PERFORMED

M = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
F = Waterflow
W = Mishap or Spill
W = Water Contamination
O = Other

INSPECTION CLASSIFICATION

U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (S&D, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
R = Inspections relating to Reclamation Fund Activity
O = Other - Inspections not related to injection or The Reclamation Fund

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = S&D
U = Underground Storage
G = General Operation
F = Facility or location
M = Mention

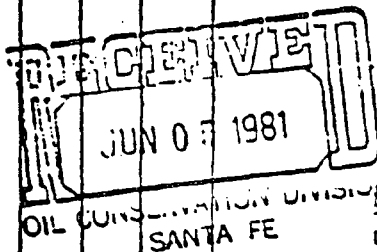
**NEW MEXICO OIL CONSERVATION COMMISSION
FIELD TRIP REPORT**

Name B. W. Weaver Date 5/26/81 Miles 162 District II
Time of Departure 9:00 a.m. Time of Return 5:30 p.m. Car No. DF6598

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature B. W. Weaver

CLASSIFICATION	FACILITY	HOURS	QUARTER	WELLS	DESCRIPTION
0	P	2	-	14 Wells	Sec. 24,25,26-T18S-R30E, Hanson Oil Co. Benson, Ginsberg Fed. checked for leaks & spills, OK
0	P	-	2	2 Wells	Sec. 36-18S-R30E, Getty Oil Co. State BJ, State BK checked for signs, leaks & spills, OK
0	P	-	2	3 Wells	Sec. 31-18-31, Union Oil of Calif. Federal E, Federal F, checked for signs, leaks & spills, OK
U	C	2	-	13 Wells	Sec. 25, 30-18S-30E, R. Q. Silverthorne, Keinath, Kenwood & Lanning, checked for leaks & spills. Lanning #3-I, 25-18-30, salt water running out cellar to pit. Lanning #4-P, 25-18-30, salt water running out cellar to pit water tank was running over to pit. Contacted company man, he will take care of it.
0	P	1	-	3 Wells	Sec. 31-18-30, Union Oil of Calif. Federal lease checked for leaks & spills, OK
0	P	-	2	2 Wells	Sec. 36-18-30, Getty Oil Co. State BJ, State BK Checked for signs, leaks & spills. OK
U	I	1	-	1 Well	J, 23-17-31, Getty Oil Co. Skelly Unit #71 Will move pulling unit on and start repairs.



Mileage	Per Diem	Hours
UIC <u>81</u>	UIC <u>4.50</u>	UIC <u>3</u>
RFA <u> </u>	RFA <u> </u>	RFA <u> </u>
Other <u>81</u>	Other <u>4.50</u>	Other <u>4 1/2</u>

TYPE INSPECTION PERFORMED

INSPECTION CLASSIFICATION

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

H = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
W = Waterflow
M = Mishap or Spill
W = Water Contamination
O = Other

U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (See 2nd dry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
R = Inspections relating to Reclamation Fund Activity
O = Other - Inspections not related to injection or The Reclamation Fund

D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = SWD
U = Underground Storage
G = General Operation
F = Facility or location

OIL CONSERVATION DIVISION FIELD TRIP SUMMARY REPORT DECEMBER 1980

ENF - NUMBER OF ENFORCEMENT ACTIONS TAKEN IN THE FIELD

NO. OF MEN IN FIELD	NO. OF FIELD DAYS	MILEAGE	HOURS	NO. OF INSPECTIONS WELLS OTHER ENF
------------------------	----------------------	---------	-------	---------------------------------------

DISTRICT 1	UIC	4	50	4,113	367	435	37	5
	RFA	0	0	0	0	0	0	0
	OTHER	4	31	4,041	219	171	51	0
	TOTAL	5	73	8,154	586	606	88	5

DISTRICT 11	UIC	4	31	1,950	125	110	1	4
	RFA	0	0	0	0	0	0	0
	OTHER	4	54	4,160	318 1/2	168	15	9
	TOTAL	4	61	6,110	443 1/2	278	16	13

DISTRICT 111	UIC	1	3	204	11	14	0	0
	RFA	1	2	102	6	4	0	0
	OTHER	2	11	1,151	56	104	7	2
	TOTAL	2	11	1,457	73	122	7	2

DISTRICT 1V	UIC	0	0	0	0	0	0	0
	RFA	0	0	0	0	0	0	0
	OTHER	1	6	1,287	70	16	0	0
	DFP DUTY	1	6	0	51	0	0	0
	TOTAL	1	6	1,287	121	16	0	0

STATE TOTAL	UIC	9	84	6,267	503	559	36	9
	RFA	1	2	102	6	4	0	0
	OTHER	11	102	10,639	663 1/2	459	73	11
	DFP DUTY	1	6	0	51	0	0	0
	TOTAL	12	151	17,006	1223 1/2	1022	111	20

OIL CONSERVATION DIVISION

FIELD TRIP SUMMARY REPORT JANUARY THRU

DECEMBER 1980

ENF - NUMBER OF ENFORCEMENT ACTIONS TAKEN IN THE FIELD

DISTRICT	UIC	RFA	OTHER	TOTAL	NO. OF MEN IN FIELD	NO. OF FIELD DAYS	MILEAGE	HOURS	NO. OF INSPECTIONS		
									WELLS	OTHER	ENF
DISTRICT I	7	0	7	7	719	62,170	5525	8441	156	23	
UIC	0	0	0	0	0	0	0	0	0	0	
RFA	357	357	357	357	37,016	2498	3325	373	59	0	
OTHER	7	7	7	7	996	101,186	8023	11766	529	82	
TOTAL	7	0	7	7	719	62,170	5525	8441	156	23	
DISTRICT II	5	0	5	5	366	31,105	1990	3330	122	45	
UIC	0	0	0	0	0	0	0	0	0	0	
RFA	508	508	508	508	44,742	3043	3/4	2314	127	55	
OTHER	5	5	5	5	729	75,847	5034	5644	249	100	
TOTAL	5	0	5	5	366	31,105	1990	3330	122	45	
DISTRICT III	3	2	3	3	28	2,938	140	1/2	164	20	
UIC	45	45	45	45	1,391	243	1/2	49	15	0	
RFA	173	173	173	173	19,666	1098	1/2	2431	192	19	
OTHER	3	3	3	3	213	23,995	1482	2644	227	22	
TOTAL	3	2	3	3	28	2,938	140	1/2	164	20	
DISTRICT IV	2	0	2	2	30	1,852	223	1/4	0	26	
UIC	0	0	0	0	0	0	0	0	0	0	
RFA	134	134	134	134	29,520	1431	3/4	289	52	9	
OTHER	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	2	0	2	2	30	1,852	223	1/4	0	26	
DISTRICT V	3	1	3	3	154	31,312	2128	1/2	289	79	
UIC	0	0	0	0	0	0	0	0	0	0	
RFA	134	134	134	134	29,520	1431	3/4	289	52	9	
OTHER	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	3	1	3	3	154	31,312	2128	1/2	289	79	
STAFF TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
UIC	0	0	0	0	0	0	0	0	0	0	
RFA	1172	1172	1172	1172	1,391	243	1/2	49	15	0	
OTHER	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
OFF DUTY	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
OFF DUTY	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
OFF DUTY	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
OFF DUTY	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
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TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
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TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
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TOTAL	17	2	17	17	1163	98,065	7879	1/4	11935	324	
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OFF DUTY	2	2	2	2	59	0	473	1/2	0	0	
TOTAL	17	2	17	17	1163	98,065	7879	1/4	11		

**NEW MEXICO OIL CONSERVATION DIVISION
CASING--UNADJUSTED TEST --SHD OR INJ.**

OPERATOR: _____ Pool _____
 Lease _____ Well No. _____ Unit Letter _____ Sec. _____ T _____ R _____

OBSERVED DATA

Test Date: _____ Injection Pressure Limited to: _____ psi

CASING STRING	Size	Set At	Cemented	Pressure	REMARKS
<u>SURFACE</u>	_____	_____	_____	_____	_____
<u>INTERMEDIATE</u>	_____	_____	_____	_____	_____
<u>PRODUCTION</u>	_____	_____	_____	_____	_____
<u>TUBING</u>	_____	_____	_____	_____	_____

IF WELL IS ON VACUUM:

Shut well in _____ minutes Tubing pressure _____ Casing: Pressure _____
 Vacuum _____
 Static _____

IF WELL IS INJECTING UNDER PRESSURE: Intermittently _____ Continuously _____
 Est. Hrs. per day running _____

Shut pump down _____ minutes Tubing Pressure _____ Casing Pressure _____

TEST OK _____ RECOMMEND RETEST _____ TEST INDICATES COMPLICATIONS _____ REVIEWED BY _____

REMARKS: _____

OBSERVED DATA

Test Date: _____ Injection Pressure Limited to: _____ psi

CASING STRING	Size	Set At	Cemented	Pressure	REMARKS
<u>SURFACE</u>	_____	_____	_____	_____	_____
<u>INTERMEDIATE</u>	_____	_____	_____	_____	_____
<u>PRODUCTION</u>	_____	_____	_____	_____	_____
<u>TUBING</u>	_____	_____	_____	_____	_____

IF WELL IS ON VACUUM:

Shut well in _____ minutes Tubing pressure _____ Casing: Pressure _____
 Vacuum _____
 Static _____

IF WELL IS INJECTING UNDER PRESSURE: Intermittently _____ Continuously _____
 Est. Hrs. per day running _____

Shut pump down _____ minutes Tubing Pressure _____ Casing Pressure _____

TEST OK _____ RECOMMEND RETEST _____ TEST INDICATES COMPLICATIONS _____ REVIEWED BY _____

REMARKS: _____



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

BRADENHEAD & PACKER TEST REPORT FOR INJECTION & SWD WELLS

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

BRADENHEAD TEST

Date of Test _____ Operator _____

Lease Name & Well NO _____ Location U _____ Sec _____ Twp _____ Rng _____

Tbg Inj. Pressure _____ Tbg SI Pressure _____ Csg. Pressure _____

Intermediate Pres _____ Bradenhead Pres _____ Maximum Inj Pressure _____

If Bradenhead has pressure, flow to atmosphere for 30 minutes and record casing pressure at 5 minute intervals.

CASING PRESSURE

BRADENHEAD FLOWED

5 MIN _____	Steady Flow _____
10 MIN _____	Surges _____
15 MIN _____	Down to Nothing _____
20 MIN _____	Nothing _____
25 MIN _____	Gas _____
30 MIN _____	Gas & Water _____

REMARKS: _____

PACKER TEST

If casing has pressure, flow to atmosphere for 30 minutes and record tubing pressure at 5 minute intervals.

TUBING PRESSURE

REMARKS: _____

5 MIN _____	_____
10 MIN _____	_____
15 MIN _____	BY: _____
20 MIN _____	POSITION _____
25 MIN _____	NMOCD _____
30 MIN _____	WITNESS _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

(Other instructions on
reverse side)

Budget Bureau No. 42-R1425.
30-015-21341

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

A. TYPE OF WORK
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

B. TYPE OF WELL
OIL WELL ☐ GAS WELL ☒ OTHER ☐
SINGLE ZONE ☐ MULTIPLE ZONE ☐

C. NAME OF OPERATOR
Belco Petroleum Corporation

D. ADDRESS OF OPERATOR
2000 Wilco Building, Midland, Texas 79701

E. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface
1980' FSL & 660' FWL, Section 4, T-18-S, R-30-E C. C.
At proposed prod. zone
ARTESIA. OFFICE
SAME

F. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE
2-1/2 mi. South of Loco Hills, New Mexico

G. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. unit line, if any)
H. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
I. ELEVATIONS (Show whether DF, RT, GR, etc.)
3555' GL

16. NO. OF ACRES IN LEASE
320

19. PROPOSED DEPTH
11,700'

17. NO. OF ACRES ASSIGNED TO THIS WELL
320

20. ROTARY OR CABLE TOOLS
Rotary

22. APPROX. DATE WORK WILL START
8/23/74

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/4"	13-3/8"	54.5#	350'	Circulate
12-1/4"	9-5/8"	40#	2000'	To Surface
8-1/2"	5-1/2"	17#	11,700'	300 sx.

It is proposed to drill straight hole to a TD of 11,700' and test as a Morrow gas well.

Mud Program: 0-350' spud mud, 350-2000' brine water, 2000-8000' fresh water, 8000'-TD KCl water with chemicals and weighting material as needed.

BOP Program: Hydril will be installed on 13-3/8" casing and tested to 2000 psi. Pipe and blind rams will be added to Hydril on 9-5/8" casing and tested to 5000 psi.

RECEIVED
AUG 12 1974
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

NOTE: ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout test program, if any.

APPROVED Allen J. Owens TITLE District Engineer DATE August 9, 1974

space for District or State Office use

SUBJECT TO ATTACHED DEEP WELL CONTROL REQUIREMENTS

APPROVED AUG 22 1974 DATE JUN 22 1973

CONDITIONS OF APPROVAL: H. L. DECKMANN TITLE ACTING DISTRICT ENGINEER DATE

THIS APPROVAL IS RESCINDED IF OPERATIONS ARE NOT COMMENCED WITHIN 3 MONTHS.

NOV 22 1974

*See Instructions On Reverse Side

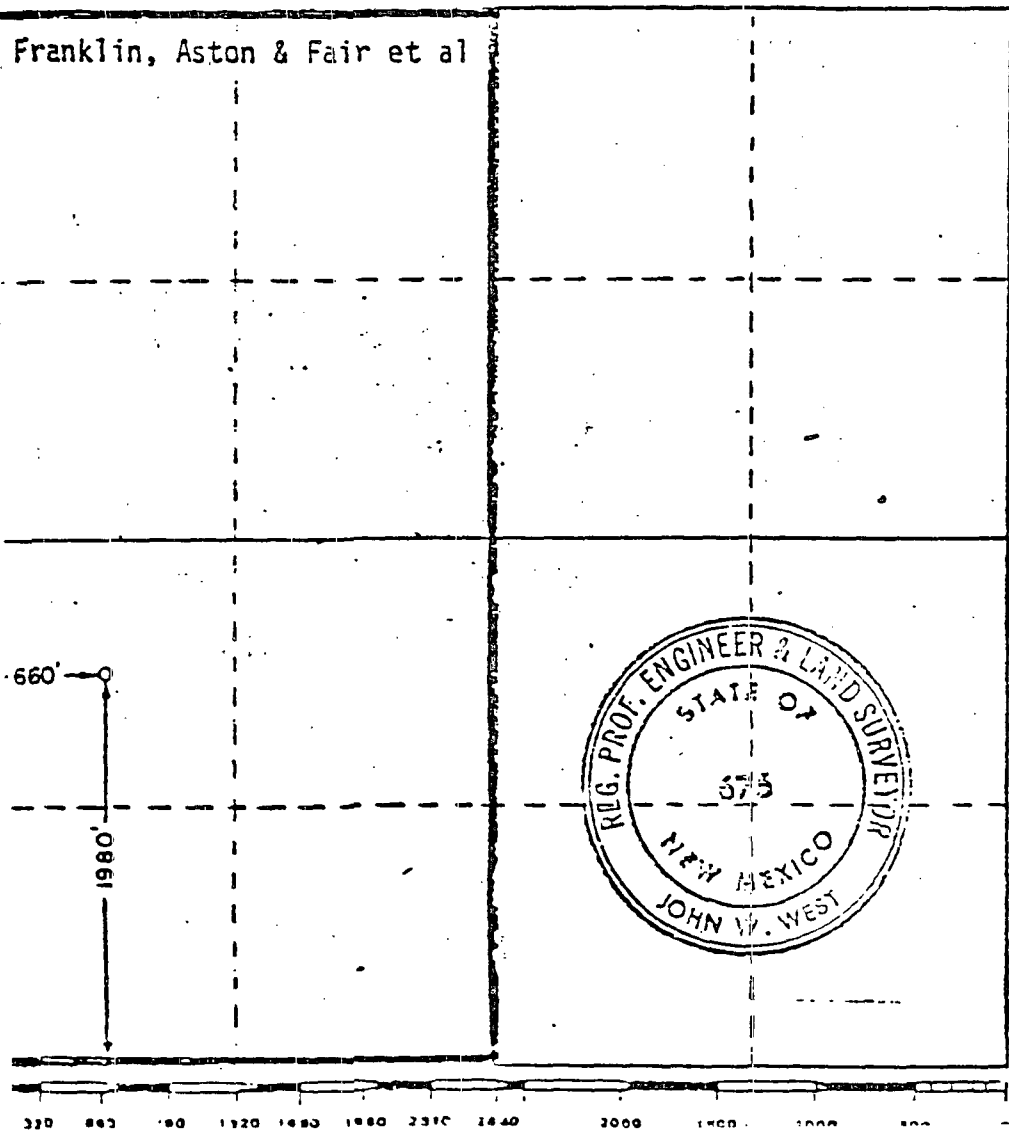
All distances must be from the water boundaries of the Section

BELCO PETROLEUM CORPORATION			FAF FEDERAL		Well No. 1
Section 4	Township 18 SOUTH	Range 30 EAST	County EDDY		
Well Location of Well:					
1980 feet from the SOUTH line and		660 feet from the WEST line			
Producing Formation		Depth		Section - Acres: 320	

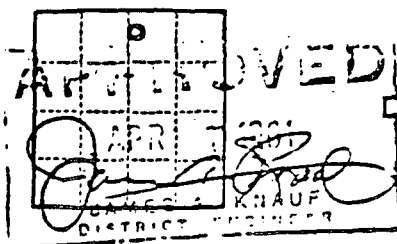
- 1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
 - 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
 - 3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?
- ☒ Yes ☐ No If answer is "yes," type of consolidation Farmout

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Name	Allen J. Owings
Position	District Engineer
Company	Belco Petroleum Corporation
Date	August 8, 1974
RECEIVED AUG 12 1974 U.S. GEOLOGICAL SURVEY ARTESIA, NEW MEXICO	
Date Surveyed	AUGUST 8, 1974
Registered Professional Engineer and/or L. and Surveyor	
<i>John W. West</i>	
Certificate No.	676



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Las Cruces

Lease No. 067343

Unit D

APR 10 1961

O. C. C.
ARTESIA OFFICE

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	X	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....		SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....		SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....		SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

April 6, 1961

Well No. 3 is located 660 ft. from [N] line and 1980 ft. from [E] line of sec. 23

NE 23
(1/4 Sec. and 1/4 Sec. No.)12S
(Twp.)29E
(Range)T15M
(Meridian)Turkey Track
(Field)Eddy
(County or Subdivision)New Mexico
(State or Territory)

The elevation of the derrick floor above sea level is 3461 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Propose to drill with rotary tool to approximately 2100 feet to test the Queen formation. Intend to drill 9" hole and set 7" OD 17# or 20# SH seamless casing at approximately 350 feet, and cement with 50 sack regular cement with 2% gel. Drill 6 1/2" hole to total depth and run 4 1/2" OD 9.6# new ~~seamless~~ casing as oil string and cement with 100 sack regular cement or enough cement to cover all zones of interest. Intend to abide by the rules and regulations of the department.

APR 6 1961

U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

Company Yates Drilling Company

Address 309 Carper Building

Artesia, New Mexico

By

Hugh W. Gray

Title Secretary

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

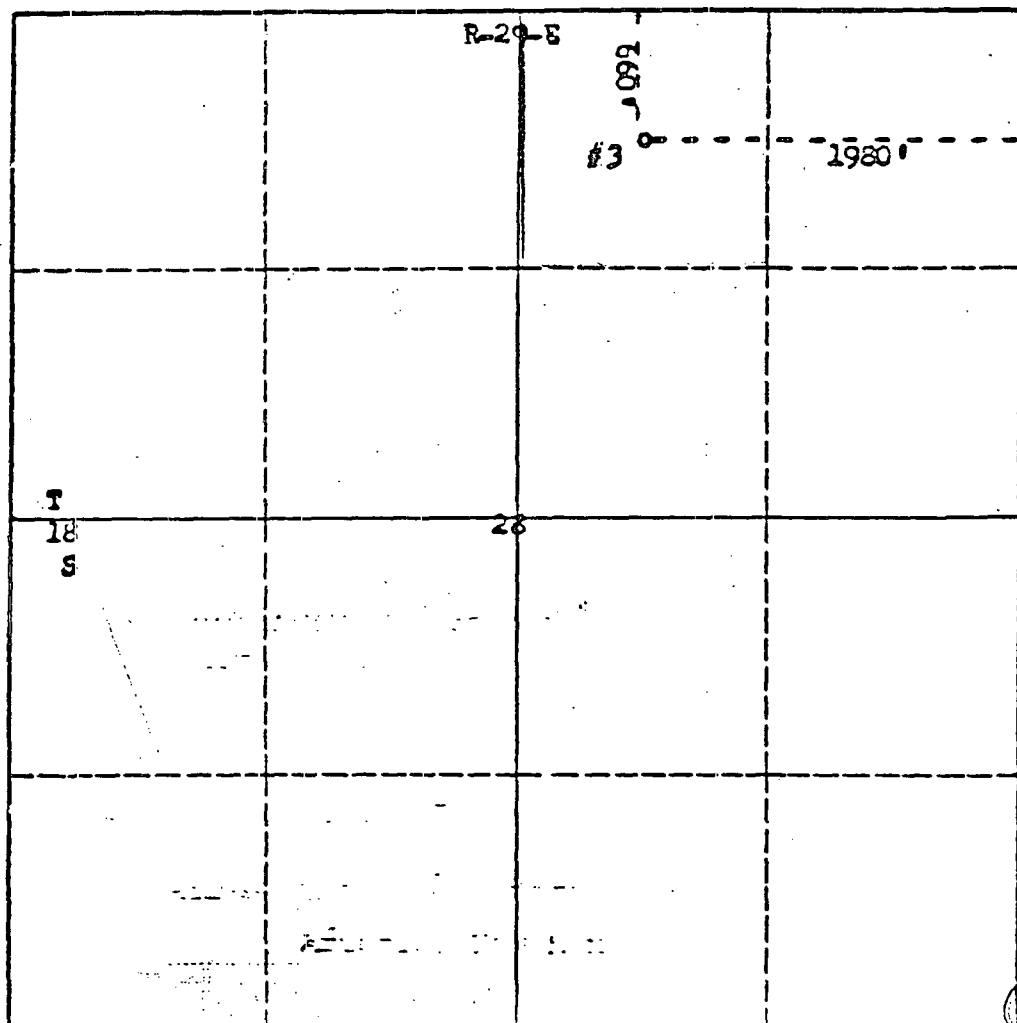
FORM C-128
 Revised 1/57

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

APR 10 1961

SECTION A		
Operator Yates Drilling Co.		Lease Federal DY
Well No. O. C. G.		ARTESIA OFFICE
Unit Letter B	Section 28	Township T-18-S
Range R-20-E	County Eddy	
Actual Footage Location of Well: 660 feet from the North line and 1980 feet from the East line		
Ground Level Elev. 3452	Producing Formation Queen	Pool Turkey Track
Dedicated Acreage: 40 Acres		
1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> ("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.) 2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES <input type="checkbox"/> NO <input type="checkbox"/> If answer is "yes," Type of Consolidation _____ 3. If the answer to question two is "no," list all the owners and their respective interests below:		
Owner	Land Description	
	<p align="center">RECEIVED APR 6 1961</p>	

SECTION B



CERTIFICATION

I hereby certify that the information in SECTION A above is true and complete to the best of my knowledge and belief.

Name *David L. Perry*
 Position **Secretary**
 Company **Yates Drilling Co.**
 Date **April 6, 1961**

I hereby certify that the well location shown on the plat in SECTION B was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed **4-5-61**
 Registered Professional Engineer and/or Land Surveyor
James M. Brown
 Certificate No. _____

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)C-105
Form approved.
Budget Bureau No. 42-P355.1

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> Other _____		5. LEASE DESIGNATION AND SERIAL NO. NM 020498 - Dakota	
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. CENVR. <input type="checkbox"/> Other _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
2. NAME OF OPERATOR Marathon Oil Company		7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR P. O. Box 2659; Casper, WY 82602		8. FARM OR LEASE NAME Ohio Gov't	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1,625' FSL & 955' FWL At top prod. interval reported below 1,610' 880' At total depth		9. WELL NO. 2E	
14. PERMIT NO. 30-045-24334		10. FIELD AND POOL OR WILDCAT Basin Dakota	
DATE ISSUED 7-15-80		11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA Sec. 15, T28N, R11W	
15. DATE SPUDDED 8-7-80		12. COUNTY OR PARISH San Juan	
16. DATE T.D. REACHED 8-25-80		13. STATE New Mexico	
17. DATE COMPL. (Ready to prod.) 5-14-81		18. ELEVATIONS (DP, EEB, AT, CB, ETC.)* 5,625' GL, 5,635' KB	
19. ELEV. CASINGHEAD -		20. TOTAL DEPTH, MD & TVD 6,410'	
21. PLUG, BACK T.D., MD & TVD 6,245'		22. IF MULTIPLE COMPL., HOW MANY* -	
23. INTERVALS DRILLED BY 0'-6,410'		24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* Graneros - Dakota	
25. WAS DIRECTIONAL SURVEY MADE NO		26. TYPE ELECTRIC AND OTHER LOGS RUN CDL/CN/GR, DIFL, CBL/GR	
27. CASING RECORD (Report all strings set in well) Casing Size Weight, lb./ft. Depth Set (MD) Hole Size Cementing Record 9-5/8" 36# 562.50' 12-1/4" 270 Sacks CON. COM. 7" 20# 1,958.14' 8-3/4" 250 Sacks PLST. 3 4-1/2" 11.6#, 10.5# 6,405.92' 6-1/4" 725 Sacks		28. WAS WELL CORED NO	
29. LINER RECORD Size Top (MD) Bottom (MD) Sacks Cement Screen (MD) NONE		30. TUBING RECORD Size Depth Set (MD) Packer Set (MD) 2-3/8" 6,041' -	
31. PERFORATION RECORD (Interval, size and number) Dakota 6,260'-6,268' (Isolated) Graneros 6,070'-6,076' All 2 sof., .34" dia.		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. Depth Interval (MD) Amount and Kind of Material Used SWF - E. Nelson See Reverse Side	
33. DATE FIRST PRODUCTION 5-14-81		PRODUCTION METHOD (Flowing, pumping—size and type of pump) Flowing SANTA FE	
DATE OF TEST 5-14-81		HOURS TESTED 24	
CHOKE SIZE 1/2"		PROD'N. FOR TEST PERIOD 1	
OIL—BSL. 1		GAS—MCF. 161	
WATER—BSL. 2		GAS-OIL RATIO 161,000 SCF/	
FLOW. TUBING PRESS. 205 psi		CASING PRESSURE 365 psi	
CALCULATED 24-HOUR RATE 1		OIL GRAVITY-API (CORR.) Oil 56.6°, Gas C	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Gas committed to El Paso Natural Gas Co.		TEST WITNESSED BY E. Nelson (MOC)	
35. LIST OF ATTACHMENTS None		36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records	

SIGNED

TITLE

District Operations Manager

DATE

May 19, 1981

*(See Instructions and Spaces for Additional Data on Reverse Side)

or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions. If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

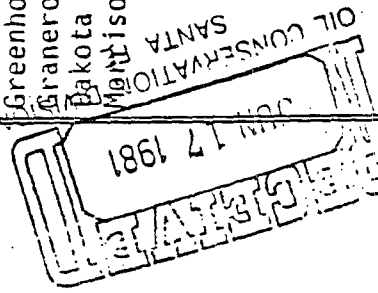
Item 13: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 21 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 25: "Stack Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 23 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND RIG-IN PRESSURES, AND RECORDERIES			38. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
Lewis Shale	surface	3,060'	Lewis Shale	surface	
Cliffhouse	casing	3,202'	Cliffhouse	casing	
Menefee	3,060'	3,202'	Menefee	3,060'	
Point Lookout	3,202'	3,904'	Point Lookout	3,202'	
Mancos	3,904'	4,206'	Mancos	3,904'	
Gallup	4,206'	5,117'	Gallup	4,206'	
Basal Niobrara	5,117'	5,399'	Basal Niobrara	5,117'	
Sanastee	5,399'	5,550'	Sanastee	5,399'	
Greenhorn	5,550'	5,854'	Greenhorn	5,550'	
Graneros	5,854'	5,958'	Graneros	5,854'	
Dakota	5,958'	6,081'	Dakota	5,958'	
Morrison	6,081'	6,274'	Morrison	6,081'	
	6,274'	TD		6,274'	



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

BRUCE KING
GOVERNOR

DIVISION RULES
STATUTES
OIL CONSERVATION COMMISSION

LARRY KEHOE
SECRETARY

LAND COMMISSIONER
ALEX, J. ARMIJO,
MEMBER

STATE PETROLEUM ENGINEER
JOE D. RAMEY, MEMBER AND
DIRECTOR, OIL CONSERVATION
DIVISION

STATE GEOLOGIST
EMERY C. ARNOLD,
MEMBER

OIL CONSERVATION DIVISION

PRINCIPAL OFFICE: STATE LAND OFFICE BLDG., OLD SANTA FE TRAIL, SANTA FE
MAILING ADDRESS: P. O. BOX 2088, SANTA FE, NEW MEXICO 87501

TELEPHONES:

DIRECTOR: (505) 827-3260 ENGINEERING: (505) 827-2533
ADMINISTRATION: (505) 827-2434 LEGAL: (505) 827-2741

JOE D. RAMEY, DIRECTOR

TECHNICAL SUPPORT CHIEF
RICHARD L. STAMETS

CHIEF ENGINEER
DANIEL S. NUTTER

WATER RESOURCE SPECIALIST
OSCAR A. SIMPSON

GEOLOGIST
CARL G. ULVOG

GENERAL COUNSEL
PERRY PIERCE

ENGINEER
MICHAEL E. STOGNER

DISTRICT OFFICES

DISTRICT I - HOBBS 88240

P.O. BOX 1980
Telephone: (505) 393-6161

J. T. Sexton, Supervisor and
Oil & Gas Inspector

P. F. Kautz, Geologist & Deputy
Oil & Gas Inspector

Deputy Oil & Gas Inspectors:

L. A. Clements
R. M. Castleberry
E. W. Seay
A. A. Plattsmier
O. W. Wink

DISTRICT III - AZTEC 87410

1000 Rio Brazos Road
Telephone: (505) 334-6178

F. T. Chavez, Supervisor and
Oil & Gas Inspector

J. A. Edmister, Geologist and Deputy
Oil & Gas Inspector

C. C. Gholson, Deputy Oil & Gas Inspector

DISTRICT II - ARTESIA 88210

P.O. DRAWER DD
Telephone: (505) 748-1283

W. A. Gressett, Supervisor and
Oil & Gas Inspector

Larry Brooks, Geologist & Deputy
Oil & Gas Inspector

Deputy Oil & Gas Inspectors:

M. B. Williams
B. W. Weaver
M. C. Stubblefield

DISTRICT IV - SANTA FE 87501

P. O. Box 2088
Telephone: (505) 827-2533

C. G. Ulvog, Geologist and Oil
& Gas Inspector

R. E. Johnson, Geologist and Deputy Oil
& Gas Inspector

CHANGE SHEET

Instructions for the insertion of Revisions to the New Mexico Oil Conservation Division Rules and Regulations dated October 1, 1978. Please remove, substitute, delete, or add pages as noted below and retain this Change Sheet in the Rule Book.

[illegible]

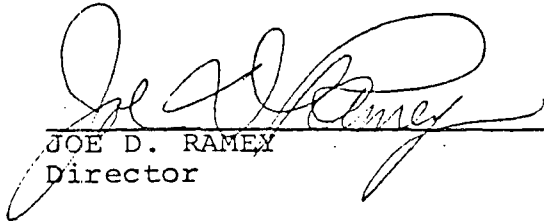
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

RULES AND REGULATIONS

Dated 10-1-78

This book contains the Division Rules and Regulations of statewide application revised through October 1, 1978. From time to time the book will be updated through the distribution of change sheets incorporating new or revised rules or statutes.

Special rules governing individual oil and gas pools are not included in this publication but should be consulted where applicable. Order No. R-1670, as amended, should be consulted for general and special rules governing prorated gas pools in Southeast and Northwest New Mexico. Order No. R-111-A, as amended, should be consulted for special rules governing the Oil-Potash Area of Southeast New Mexico. Order No. R-3221, as amended, should be consulted for special rules governing salt water disposal. Order No. R-5353, as amended, should be consulted for special rules governing associated pools. Order No. R-5436 should be consulted for special rules governing exemption of new wells from the provisions of the Natural Gas Pricing Act.



JOE D. RAMEY
Director

The Legislature
of the
State of New Mexico

35th Legislature, 1st Session

LAWS 1981

CHAPTER 372

SENATE BILL 162

Introduced by
SENATOR JACK M. MORGAN



AN ACT

RELATING TO EXPENDITURES FROM THE OIL AND GAS RECLAMATION FUND.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

Section 1. Section 70-2-38 NMSA 1978 (being Laws 1977, Chapter

237, Section 5, as amended) is amended to read:

"70-2-38. OIL AND GAS RECLAMATION FUND ADMINISTERED--PLUGGING
WELLS ON FEDERAL LAND--RIGHT OF INDEMNIFICATION--ANNUAL REPORT--CON-
TRACTORS SELLING EQUIPMENT FOR SALVAGE.--

A. The oil and gas reclamation fund shall be administered
by the oil conservation division. Expenditures from the fund may be
used by the director of the division for the purpose of employing the
necessary personnel to survey abandoned wells and to prepare plans
for the plugging of abandoned wells which have not been plugged or
which have been improperly plugged. The director, as funds become
available in the oil and gas reclamation fund, shall reclaim, and
properly plug, all abandoned wells in accordance with the provisions
of the Oil and Gas Act and the rules and regulations promulgated there-
under. The division may order wells plugged on federal lands on which
there are no bonds running to the benefit of the state in the same
manner and in accordance with the same procedures as with wells drilled
on state and fee land, including utilizing funds from the oil and gas
reclamation fund to pay the cost of such plugging. When the costs of
plugging a well drilled on federal mineral leases are paid from the
oil and gas reclamation fund, the division is authorized to bring a

suit against the operator or the owner of the minerals under the tract,
or both, in the district court of the county in which the well is lo-
cated for indemnification for all costs incurred by the division in
plugging the well. Any funds collected pursuant to a judgment in a
suit for indemnification brought under the Oil and Gas Act shall be
deposited in the oil and gas reclamation fund.

B. The director shall make an annual report to the secre-
tary of energy and minerals, the Governor and the legislature on the
use of the oil and gas reclamation fund.

C. All contracts for well plugging shall be entered into
in accordance with the provisions of the Public Purchases Act. Any
contractor employed by the division to plug a well is authorized to
sell for salvage the equipment and material which is removed from the
well in plugging it."

The Legislature
of the
State of New Mexico

35TH Legislature, 11ST Session

LAWS 1981

CHAPTER 262

HOUSE BILL 232, AS AMENDED

Introduced by
REPRESENTATIVE THOMAS P. FOY
REPRESENTATIVE FRANK L. HORAN



CHAPTER 362
AN ACT

RELATING TO ENERGY; PROVIDING PENALTIES FOR VIOLATIONS OF THE OIL AND GAS ACT OR THE GEOTHERMAL RESOURCES CONSERVATION ACT.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

Section 1. Section 70-2-31 NMSA 1978 (being Laws 1935, Chapter 72, Section 22, as amended) is repealed and a new Section 70-2-31

NMSA 1978 is enacted to read:

"70-2-31. VIOLATIONS OF THE OIL AND GAS ACT--PENALTIES.--

A. Any person who knowingly and willfully violates any

provision of the Oil and Gas Act or any provision of any rule or order issued pursuant to that act shall be subject to a civil penalty of not more than one thousand dollars (\$1,000) for each violation. For purposes of this subsection, in the case of a continuing violation, each day of violation shall constitute a separate violation.

The penalties provided in this subsection shall be recoverable by a civil suit filed by the attorney general in the name and on behalf of the commission or the division in the district court of the county in which the defendant resides or in which any defendant resides if there be more than one defendant or in the district court of any county in which the violation occurred. The payment of such penalty shall not operate to legalize any illegal oil, illegal gas or illegal product involved in the violation for which the penalty is imposed or relieve a person on whom the penalty is imposed from liability to any other person for damages arising out of such

1 violation.
2
3 B. It is unlawful, subject to a criminal penalty of a fine
4 of not more than five thousand dollars (\$5,000) or imprisonment for a
5 term not exceeding three years or both such fine and imprisonment,
6 for any person to knowingly and willfully:
7
8 (1) violate any provision of the Oil and Gas Act or
9 any rule, regulation or order of the commission or the division
10 issued pursuant to that act; or
11
12 (2) do any of the following for the purpose of
13 evading or violating the Oil and Gas Act or any rule, regulation or
14 order of the commission or the division issued pursuant to that act:
15 (a) make any false entry or statement in a
16 report required by the Oil and Gas Act or by any rule, regulation or
17 order of the commission or division issued pursuant to that act;
18 (b) make or cause to be made any false entry in
19 any record, account or memorandum required by the Oil and Gas Act or
20 by any rule, regulation or order of the commission or division issued
21 pursuant to that act;
22 (c) omit or cause to be omitted from any such
23 record, account or memorandum full, true and correct entries; or
24 (d) remove from this state or destroy, mutilate,
25 alter or falsify any such record, account or memorandum.
C. For the purposes of Subsection B of this section, each
day of violation shall constitute a separate offense.
D. Any person who knowingly and willfully procures,

1 counsels, aids or abets the commission of any act described in
2 Subsection A or B of this section shall be subject to the same
3 penalties as are prescribed therein."
4 Section 2. Section 71-5-23 NMSA 1978 (being Laws 1975, Chapter
5 272, Section 23, as amended) is repealed and a new Section 71-5-23
6 NMSA 1978 is enacted to read:
7 "71-5-23. VIOLATIONS OF THE GEOTHERMAL RESOURCES CONSERVATION
8 ACT--PENALTIES.--
9
10 A. Any person who knowingly and willfully violates any
11 provision of the Geothermal Resources Conservation Act or any
12 provision of any rule or order issued pursuant to that act shall be
13 subject to a civil penalty of not more than two thousand five
14 hundred dollars (\$2,500) for each violation. For purposes of this
15 subsection, in the case of a continuing violation, each day of
16 violation shall constitute a separate violation. The penalties
17 provided in this subsection shall be recoverable by a civil suit
18 filed by the attorney general in the name and on behalf of the
19 commission or the division in the district court of the county in
20 which the defendant resides or in which any defendant resides if
21 there be more than one defendant or in the district court of any
22 county in which the violation occurred. The payment to such penalty
23 shall not operate to legalize any illegal geothermal resources or
24 illegal product involved in the violation for which the penalty is
25 imposed or relieve a person on whom the penalty is imposed from
liability to any other person for damages arising out of such

1 violation.
2
3 B. It is unlawful, subject to a criminal penalty of a fine
4 of not more than five thousand dollars (\$5,000) or imprisonment for
5 a term not exceeding three years or both such fine and imprisonment,
6 for any person to knowingly and willfully:
7 (1) violate any provision of the Geothermal Resources
8 Conservation Act or any rule, regulation or order of the commission
9 or the division issued pursuant to that act; or
10 (2) do any of the following for the purpose of evading
11 or violating the Geothermal Resources Conservation Act or any rule,
12 regulation or order of the commission or the division issued pursuant
13 to that act:
14 (a) make any false entry or statement in a report
15 required by the Geothermal Resources Conservation Act or by any rule,
16 regulation or order of the commission or division issued pursuant to
17 that act;
18 (b) make or cause to be made any false entry in
19 any record, account or memorandum required by the Geothermal Resources
20 Conservation Act or by any rule, regulation or order of the commission
21 or division issued pursuant to that act;
22 (c) omit or cause to be omitted from any such
23 record, account or memorandum full, true and correct entries; or
24 (d) remove from this state or destroy, mutilate,
25 alter or falsify any such record, account or memorandum.
C. For the purposes of Subsection B of this section, each

1 day of violation shall constitute a separate offense.
2
3 D. Any person who knowingly and willfully procures,
4 counsels, aids or abets the commission of any act described in
5 Subsection A or B of this section shall be subject to the same
6 penalties as are prescribed therein."
7
8 Section 3. REPEAL.--Section 70-2-20 NMSA 1978 (being Laws 1941,
9 Chapter 166, Section 3, as amended) is repealed.
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