PROGRAM DESCRIPTION: TEXT

PROGRAM DESCRIPTION

The material required pursuant to 123.4(a) is discussed below:

The State of New Mexico, through a number of Legislative Statutes, administered by several State Agencies, developed and implemented programs to control ground water pollution. A summary of these statutes, administering agencies and types of injection wells covered is given in the attached Table 1. The New Mexico Water Quality Act (74-6-1 through 74-6-13 NMSA 1978; see Appendix A) is the legislative authority for control of Class I, III, IV and some Class V injection wells. Class V wells relating to Coal Surface Mining are regulated by the Surface Mining Act (Appendix A) and Class V wells relating to geothermal operations are regulated by the Geothermal Resources Conservation Act (Appendix A). The Water Quality Act establishes the Water Quality Control Commission (WQCC) composed of eight constituent state agencies, plus an appointed member of the public, and assigns to the Commission the duty to "adopt, promulgate and publish regulations to prevent or abate water pollution . . .". In response to that mandate, the Commission has adopted the WQCC Regulations for ground water protection (Part 3). Technical requirements for Class I and Class III injection wells (Part 5) were adopted by the Commission on July 21, 1982.

New Mexico's highly effective program to protect ground water quality follows procedures that are equivalent in effect but not identical to the Consolidated Permit Regulations. The technical requirements of the New Mexico program are as stringent as the Federal provisions. Table 2 is a summary of the similarities and differences between the Consolidated Permit Regulations, as they apply to the UIC program, the New Mexico Water Quality Act and WQCC Regulations for protection of ground water. Although the methodology of application of the two sets of regulations differs between the two agencies, the results are identical: ground water in New Mexico has been and will continue to be protected, and the public is involved and participates in the permitting process.

The heart of the Environmental Improvement Division (EID) and the Oil Conservation Division's (OCD) program to protect ground water quality under the Water Quality Act is Part 3 of the WQCC Regulations: "Regulations for Discharges Onto or Below the Surface of the Ground."

The purpose of these Regulations as stated in Section 3-101 is to:

> ". . . protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards."

These Regulations, adopted under the authority of the New Mexico Water Quality Act, are considered by many to be the most comprehensive in the nation for the

prevention and abatement of ground water pollution. The New Mexico ground water standards, some of the first in the United States, have been used extensively by other states in developing ground water protection programs. They apply to all discharges of effluent or leachate onto or below the surface of the ground, including all types of well injection, seepage from surface impoundments, land application of municipal and industrial wastes, and any other discharge which may impact ground water, except for those discharges which are specifically exempted.

Two central aspects of the Part 3 WQCC Regulations are the establishment of ground water quality standards and the requirement for an approved "discharge plan". Section 3-103 establishes numerical water quality standards for ground water of 10,000 mg/l or less total dissolved solids concentration. Standards for 27 parameters were adopted and have been in effect since 1977.

Development of the WQCC Regulations by the EID began in early 1974; they were discussed at numerous meetings of the WQCC from 1974 through 1976; they were taken to public hearing in June, 1976; they were adopted by the WQCC on January 11, 1977; and they became effective the following month. The Regulations were appealed by nine uranium companies in February, 1977, but they were not stayed by the court and remained in effect throughout the appeal process. The New Mexico Court of Appeals largely upheld the Regulations in December of 1978. A New Mexico Supreme Court ruling on November 16, 1979 was also generally favorable to the Regulations, except for the definition of "Toxic Pollutants" and the WQCC subsequently deleted that definition from the Regulations.

The EID presented information to the Water Quality Control Commission in September, 1980 on the potential hazards of various toxic organic compounds. In October, the EID requested and received authorization from the WQCC to proceed to the public hearing (held January 14-15, 1981) on proposed amendments to the Regulations to control the discharge of toxic pollutants to ground water. On April 22, 1981, the WQCC adopted a revised definition of "Toxic Pollutant" covering 76 compounds designated as potential toxic pollutants, and appropriate other amendments to incorporate effective control of these toxic pollutants into the Regulations. These amendments were subsequently filed at the State Records Center and became effective July 2, 1981. Four uranium companies challenged the amendments and filed a Notice of Appeal on June 30, 1981, but did not request a stay of the Regulation Amendments. The appeal did not apply to the bulk of the Regulations which were previously upheld by the courts. A public hearing was held in July 1981 on proposed standards for several of the "Toxic Pollutant" compounds and standards were adopted for 8 toxic pollutants at the December 16, 1981 WQCC meeting. The New Mexico Court of Appeals, in a unanimous decision on January 19, 1982, upheld the "Toxic Pollutant"amendments to the Regulations (See Appendix F). This decision has been subsequently affirmed by the New Mexico Supreme Court.

The Commission received and approved a request by the EID and the OCD at the January 12, 1982 WQCC meeting to conduct a public hearing on March 3, 1982 on the Part 5 amendments to the WQCC Regulations. These amendments are equivalent to the Environmental Protection Agency's (EPA) technical

requirements (40 CFR Part 146). Part 5 and the necessary Part 3 additions were unanimously adopted by the Commission on July 21, 1982. The procedural aspects of a discharge plan application and public and staff review remain the same. Changes to the existing regulations include references to the new Part 5 and additional UIC definitions.

A discharge plan submitted for staff review is essentially an application for a permit. In a discharge plan an applicant must describe in detail the process to be used for discharging to ground water, and the hydrology, geology and hydrochemistry of the ground water in areas which may be affected by the discharge. The applicant may also propose or the Director may require a monitoring and reporting schedule, a contingency plan in the event of failure of the system, and any other information that may be necessary to demonstrate the discharge will be consistent with the Regulations. All injection wells that are regulated under Part 5 of the WQCC Regulations must submit the information required in Section 5-210 and other applicable sections. Any discharge allowed must be consistent with the Regulations and with the conditions outlined in an approved discharge plan. Therefore an approved discharge plan is equivalent to an EPA permit because the New Mexico Regulations are equivalent to or more stringent than the Federal provisions.

Implementation of the WQCC Regulations as they apply to most types of discharges, including injection wells, is carried out by the EID Ground Water Section with aid from other sections (such as Surface Water). Certain oil, natural gas, carbon dioxide gas, geothermal, and coal mining discharges are specifically exempted from these Regulations since they are covered by other statutes and regulations as discussed in the Attorney General's statement (also see Table 1). In addition, the OCD administers the WQCC Ground Water Regulations as they apply to certain other aspects of the oil and gas industry, such as refining.

All new discharges since June, 1977, are subject to the discharge plan requirement, except as specifically exempted. In addition, there is legal authority to require existing discharges to come into conformance with the Regulations upon notification by the Division. New section 5-300 of the WQCC Regulations requires existing injection well dischargers which have not previously notified the Director to do so within 1 year. The 1980 New Mexico Surface Impoundment Assessment found that all of the documented or suspected cases of ground water contamination in New Mexico are from facilities which were existing prior to implementation of the Regulations and that there are no known ground water contamination problems due to new discharges initiated since implementation of the Regulations. The preliminary underground injection well inventory of Class I, III, and IV wells was completed in August, 1981 and revised August 8, 1982.. The results of the inventory (Table 4) show that 5 Class III wells are operating without an approved discharge plan. These brine production wells have been asked to submit a discharge plan and are required to have an approved discharge plan within 90 days of the effective date of the Regulations. All Class III wells under construction have applied for discharge plan approval. Six Class III wells were abandoned without State approval, but the operator will be required to meet State requirements for abandonment of their site. One inactive Class I well does not have an approved discharge plan; this well will be required to submit a discharge plan prior to resuming operation, or an abandonment plan

prior to final closure. Since the adoption of the WQCC Regulations in 1977 through August of 1982, 238 discharge plans of all types have been submitted to the EID. Approximately 200 have been approved, 2 have been disapproved and the rest either were withdrawn or are pending. The OCD has received 22 dishcarge plan applications with 6 approvals and the rest pending. Upon submission of a discharge plan, the receiving Division issues a public notice (Figure 1), provides an opportunity for public hearing and reviews the plan for conformance with the Regulations (Table 5).

When questions are raised by the Division reviewing staff about the adequacy of a discharge plan, most dischargers have been willing to provide more information and/or to amend their plans to come into conformance with the Regulations, and have had their amended plans approved. Public hearings have been held on six plans, four of which were subsequently approved and two were disapproved. The disapproved plans were for proposed surface impoundments which EID hydrologists judged to have unacceptable ground water contamination potential; one was a proposed copper leaching operation and one was a proposed uranium mill tailings pond. The uranium mill operators later submitted a completely new, environmentally acceptable discharge plan which was approved in January, 1980.

Self-monitoring of ground water is required of many discharges including all injection wells covered by Part 5. Self-monitoring results are reported to the Division regularly. Specific monitoring requirements for Class I and III injection wells are listed in Section 5-207. The Divisions periodically sample effluents and monitoring wells of dischargers. Past sampling programs have emphasized the uranium facilities in the Grants Mineral Belt and petroleum refining facilities in the southeast and northwest part of the state. Monitoring of dischargers was increased as a result of a very significant increase in EID Water Pollution Control Bureau staffing authorized in 1981 by the New Mexico Legislature. The Commission Regulations allow for a wide range of Division monitoring activity, including installation, maintenance and use of devices for monitoring effluent and ground water likely to be affected by a discharge; monitoring in the vadose zone, and continued monitoring after cessation of operations.

Violations of the provisions of an approved discharge plan may result in termination of the plan by the Director. Both criminal and civil penalities can be assessed against persons discharging without approval. The Water Quality Act provides for criminal fines ranging between $300 and $10,000 per day and/or up to a year imprisonment. A civil penality of up to $5,000 per day can also be assessed.

The Part 5 additions to the WQCC Regulations require that all "effluent disposal wells" and "in situ extraction wells" have an approved discharge plan (a permit) prior to operation. The definiton for "effluent disposal well" is broad enough to include all Class I and Class IV injection wells (the inventory found no Class IV wells in the State), and some Class V wells which the State feels may have the potential to cause a violation of the Safe Drinking Water Act. "In situ extraction wells" covers all Class III wells. Class V wells not covered by Part 5 are presently regulated by Part 1 and Part 3 of the existing WQCC Regulations, or under other State Statutes as discussed in the Attorney General's statement.

In evaluating the effectiveness of the existing program, the following facts are pertinent:

1. The WQCC Regulations (Part 3), adopted in 1977, were developed over a period of years with a large amount of public input, and they have been thoroughly tested and upheld by the courts.

2. New Mexico has established numerical ground water quality standards for 35 parameters, and these standards apply to ground water of 10,000 mg/l or less total dissolved solids concentration.

3. After the deletion of the generic "Toxic Pollutant" provisions from the WQCC Regulations in response to the November, 1979, New Mexico Supreme Court ruling, the Regulations controlled only contamination from the parameters listed in the numerical Standards, which were technically demonstrated in public hearing to be parameters of concern in New Mexico. The WQCC has taken action to control other parameters, but the definition and published list of "Toxic Pollutants" that became effective July 2, 1981, is not exhaustive.

4. The Part 5 Regulations adopted in 1982 the prohibit disposal of effluents by well injection, and the use of in situ extraction wells without a permit (discharge plan) and requires the applicant to satisfy stringent technical criteria and performance standards.

5. All new or modified discharges, including injection wells, initiated since the 1977 adoption of the WQCC Regulations are required to be in conformance with the Regulations and to have montoring adequate to assure that problems are promptly identified. There have been no known ground water contamination problems due to such new discharges.

The material required pursuant to 123.4(b). is discussed below:

The organization, structure and responsibilities of each State agency responsible for UIC is best described by the following tables. Table 1 shows the division of responsibility and authority for controlling ground water pollution from different classes and types of injection wells. The administrative structure of each agency is described in Tables 6 through 10. Since administrative review of Class I and Class III injection well applications is performed by either the Environmental Improvement Division (EID) or the Oil Conservation Division (OCD) under the WQCC Regulations, division responsibilities for these well classes are the same.

Each Division is responsible for determining whether an injection practice (including Class V wells) may affect ground water and therefore require a discharge plan. It is the responsibility of the Division to perform a technical evaluation of a discharge plan submitted to that Division. Based upon the technical evaluation, the Director will approve the discharge plan (equivalent to the issuance of a permit) or disapprove the plan. The Division is then responsible for insuring that the discharger operates pursuant to the Regulations and the approved discharge plan. The Division does this through spot inspections of the facility or an

evaluation of the monitoring reports required by the discharge plan. The Division can undertake studies to determine if a specific injection practice has the potential to cause ground water pollution. The Class V well evaluation is an example of the types of studies that the Division plans to undertake. In addition the Division can investigate complaints about ground water pollution from the public or from another state agency. Each Division has the authority to halt the discharge and impose fines or imprisonment subject to the "Water Quality Act" (74-6-5.J.,P.,Q., NMSA 1978).

A "Memorandum of Understanding" has been developed to codify the individual responsibilities of the EID, OCD and MMD and to designate the OCD as the"lead agency" for UIC responsibility within the State. The "Memorandum of Understanding" is attached as Appendix B to the Program Description.

EID and OCD budgets for Federal Fiscal Year 1981 and 1982 are presented in Appendix C. They adequately address the funding and cost estimates. As stated in the enclosed documents the funding is 75% Federal. Funding needs for FY '83 and '84 are expected to be increased only to compensate for increased costs of salaries due to inflation and/or productivity increases. The State does not anticipate any other source of funding to replace any loss of Federal funds for the UIC program.

The job specifications of the technical staff who will carry out the State program are given in Appendix D. The job descriptions for the EID staff are also presented.

The material required pursuant to 123.4(c) is discussed below:

New Mexico will not submit a lengthy narrative description of the permitting process for Underground Injection Wells (See Table 5). Instead Table 2 shows which portions of the New Mexico Statutes or Regulations would meet or sometimes exceed the requirements of CFR 40 Parts 122, 124, and 146. The equivalence of the Federal and State permitting process is obvious in most instances; however, some of the State Regulations or Statutes may require a brief narrative description. The State has attempted to anticipate those regulations which may require further explanation. These narrative descriptions which demonstrate the equivalency of the two processes are explained in Table 3. Under "the material required pursuant to 123.4(e)" administrative and judicial review procedures are discussed.

The material required pursuant to 123.4(d) is discussed below:

New Mexico does not require a discharger to fill out forms in order to obtain a permit to discharge. Information which must be submitted to the Director concerning any injection operations is addressed in the following sections of the New Mexico WQCC Regulations.

Regulation	Type of Well
1-201.B. 5-300	All injection wells covered under Water Quality Act.
5-101.B. 5-210 3-107.E.	All effluent disposal and in situ extraction wells needing a discharge plan.
3-107.A. 3-106.C.	Injection wells needing a discharge plan other than effluent disposal wells or in situ extraction wells

The material required pursuant to 123.4(e) is discussed below:

The New Mexico UIC program meets the EPA requirements of 40 CFR Part 123.8 (Requirements for compliance evaluation programs, also see Attorney General's Statement, point 6) and Part 123.9 (Requirements for enforcement authority, see also Attorney General's Statement, point 7). All effluent disposal wells and in situ extraction wells are required to submit monitoring data and other reports in accordance with sections 5-207 and 5-208 of the WQCC Regulations. If the Director feels that a monitoring program and reporting schedule is necessary for other types of injection wells that require a discharge plan under the WQCC regulations, the discharger will be required to include such a schedule in the discharge plan, or the discharge plan can be approved with monitoring and reporting prescribed by the Director. The hydrologist in charge of the discharge plan will review required reports to insure that injection conforms with the Regulations and the approved discharge plan.

The Water Quality Act (NMSA 1978) section 74-6-9.F. provides for Division access to any injection facility to:

1. Copy any records required to be maintained by the Regulations,
2. Inspect any monitoring equipment or methods required to be installed by regulations, and
3. Sample any effluents.

The administering Division will typically inspect every injection facility once a year to insure compliance with the Regulations and the approved discharge plan. The data collected by the Division is examined to determine if it is in agreement with the data supplied by the discharger.

The Divisions have District and field offices throughout the State (see Tables 6 - 10). These field offices are typically the first to hear any public complaint concerning injection operations. The field staff are usually the first to report gross violations of the Regulations and injection practices which may endanger ground water. The UIC staff will then respond to these complaints and recommend enforcement action or other remedies. The Division feels that yearly inspections (at a minimum) by the UIC staff, reporting by

the field staff and investigation of citizen complaints, plus review of reports submitted by the operator are adequate methods to insure compliance with the injection regulations.

Procedures have been established under the Water Quality Act for the administrative and judicial enforcement of injection operations. When the Division discovers a violation of laws or regulations it adminsters, through the methods listed above or through self-monitoring data submitted to the Division by the discharger, it first initiates administrative procedures seeking voluntary compliance. If such voluntary compliance is not achieved within a reasonable time, district court proceedings are initiated. Injunctive relief against any violation or threatened violation of regulations is subject to the continuing jurisdiction and supervision of the district court and the court's powers of contempt. A person required under Part 3 and Part 5 of the Regulations to obtain a permit, and who either refuses to apply or violates the permit or any permit condition is guilty of a misdemeanor and shall be punished by a fine of not less then $300 nor more than $10,000 per day, or by imprisonment for not more than one year, or both. The trial court may also impose a civil penality for a violation of permit requirements not to exceed $5000 per day. (74-6-5 NMSA 1978) 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 affected. Any such assurance shall specify a time limit during which such discontinuance is to be accomplished." (74-6-10, NMSA 1978)

In addition to the above enforcement actions, "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 Division 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 hours, the Director of the Environmental Improvement Division shall file an action in the district court, not later than forty-eight hours after the date of the order, to enjoin operations of any person in violation of the order." (74-6-11, NMSA 1978)

<u>The material required pursuant to 123.4(f) does not apply to the UIC program.</u>

<u>The material required pursuant to 123.4(g).1. is discussed below:</u>

All effluent disposal wells and in situ extraction wells are required to have an approved discharge plan (permit) pursuant to Section 5-101. All operating effluent disposal (Class I) wells and in situ extraction (Class III) wells have an approved discharge plan under Part 3 of the WQCC Regulations except several salt solution mining wells under OCD jurisdiction. These solution mining wells are required to have an approved Part 3 discharge plan within 90 days of the effective date of the Part 5 of the WQCC Regulations to continue operation. Operations with approved Part 3 discharge plans will be

required to be in compliance with Part 5 of the regulations upon application for discharge plan approval.

All discharge plans are approved for a maximum of 5 years (WQA 74-6-5 and Section 3-109.C.4. of the WQCC regs). Part 5 discharge plans will be evaluated as they expire pursuant to Section 5-101.C.

The material required pursuant to 123.4(g).2. is discussed below:

The salt solution mining wells mentioned above are the only operating injection wells which are not permitted under an approved discharge plan. The operators of these wells have been asked to submit a discharge plan and are the first and only priority and will be operating with an approved discharge plan by time of program approval from the EPA. Future permitting priority will be set according to the expiration date of the discharge plans.

The material required pursuant to 123.4(g).3. is discussed below:

Please see Table 2 under EPA Section 146.08. Notification is required prior to mechanical integrity tests to allow Division inspection (see Section 5-205.A.5). UIC staff will observe all mechanical integrity tests of effluent disposal wells. Mechanical integrity testing of in situ extraction wells which is required every 5 years will be observed on a timely basis. The Director will review the results of all mechanical integrity tests.

The material required pursuant to 123.4(g).4. is discussed below:

The Director determines which wells require an approved discharge plan according to the information provided by the Notice of Intent to discharge (1-201 and 5-300 WQCC Regulations). A discharge plan for effluent disposal wells and in situ extraction wells must be submitted pursuant to Section 5-101. Other types of injection wells may be required to submit a discharge plan for approval pursuant to Part 3 of the WQCC regulations (See Table 5 showing the permitting process). As described in Section (g).1. above, all known operators of effluent disposal wells and in situ extraction wells are required to apply for discharge plan approval within 90 days of the effective date of the regulations.

The material required pursuant to 123.4(g).5. is discussed below:

Injection wells which are not effluent disposal wells or in situ extraction wells may be authorized by rule. Prior to 90 days after the effective date of Part 5, in situ extraction wells or effluent disposal wells which have a discharge plan approved pursuant to Part 3 are considered permitted by rule since Part 3 of the WQCC Regulations meets the EPA requirements of authorization by rule (see also Table 3, 122.37). Class V wells (injection wells which are not effluent disposal or in situ extraction wells) must submit notification pursuant to WQCC 1-201 and 5-300, and operate in conformance with Parts 1 and 3 of the Regulations.

The material required pursuant to 123.4(g).6. does not apply to this application.

The material required pursuant to 123.4(g).7. is discussed below:

The New Mexico injection well inventory for those wells affected by this program description is current. Updating the inventory is a simple task because all discharges to the subsurface are required to file a Notice of Intent to discharge. The inventory will be updated yearly based upon information received in that Notice and submitted to EPA annually.

The material required pursuant to 123.4(g).8. is discussed below:

All ground water in New Mexico which has a concentration of 10,000 mg/l TDS or less is considered an underground source of drinking water in New Mexico. However, under Part 5 of the Regulations, some waters between 5,000 and 10,000 mg/l TDS could be designated for injection.

The material required pursuant to 123.4(g).9. is discussed below:

New Mexico WQCC Regulations do not provide for exemption of aquifers. No aquifers in New Mexico are designated for injection pursuant to 5-103 of the WQCC regulations.

The material required pursuant to 123.4(g).10. discussed below:

Presently there are no Class IV wells in the state and these wells will not be permitted (see 5-205.B.1). If such a well did exist it would be required to submit a discharge plan application pursuant to Part 5-101.B. The Division could not approve any discharge plan application for a Class IV well because it does not meet the requirements of Part 5 or Part 3 for the protection of ground water. However, injection of hazardous or radioactive wastes into an aquifer containing between 5,000 and 10,000 TDS may be authorized if the aquifer is designated for injection pursuant to 5-103 and the applicant receives discharge plan approval.

The material required pursuant to 123.4(g).11 is discussed below:

Table 4 shows the known Class V wells in the state. A complete inventory and assessment of Class V wells will be submitted pursuant to 146.52. Information submitted under 1-201 and 5-300 will be used to inventory and assess all Class V wells. However, regulations for Class V wells are currently in effect as shown in Table 1.

The material required pursuant to 123.54(b) is described below:

After the close of the public comment period the Division will submit the following to EPA:

1. Copies of all written comments received by the State;

2. A copy of the transcript of the public hearing; and

3. A responsiveness summary which idenifies the public participation activities conducted, describes the matters presented to the public, summarizes significant comments received, and responds to these comments.

OCD STAFF RESPONSIBILITY FOR CLASS I AND III WELL REGULATION

The Oil Conservation Division Water Resource Specialist is responsible for requesting, evaluating and submitting to the Director for approval or disapproval, Discharge Plans from oil and gas related processing, refining, treatment and transportation facilities which are regulated under the Water Quality Control Commission Regulations. The Chief Engineer, the Technical Support Chief, the Chief Geologist, the General Counsel and other staff members assist in carrying out this task.

The UIC Program Administrator is responsible for carrying out administrative activities related to all Class I, II, III and V injection wells.

Other Division staff members offer support in all of the above activities. The Energy and Minerals Department and the Oil Conservation Division Tables of Organization are attached as Tables 9 and 10.

REGULATION OF CLASS V WELLS UNDER OCD JURISDICTION

Introduction

Under the provisions of the Geothermal Resources Act (see Appendix A) and the Rules promulgated thereunder, the OCD regulates the drilling for and the production of geothermal resources in this State. At the present time there are six geothermal injection wells in the state completed or under construction. Five of these are in two experimental projects in the Jemez Mountains intended for the production of heat to use in generating electrical power. The sixth injection well is in the south central area of the State and is for the purpose of disposal of geothermal fluids utilized for space heating at New Mexico State University.

During FY 83 the OCD will begin a program of studying Class V (geothermal) wells under its jurisdiction as a UIC Program task.

Geothermal Injection Well Study

The purpose of the geothermal injection well study to be started during FY 83 will be, in order of importance, to:

(1) Study the construction, use, operation, and history of geothermal injection wells for the purpose of recommending or validating the most appropriate regulatory approach;
(2) Assess contamination potential of such wells;
(3) Determine if corrective action is required relative to such wells and available alternatives;
(4) Complete an inventory of such wells giving information on construction and the nature and volume of injected fluids.

These items are to be begun within 12 months and completed within 3 years after the date primacy is granted provided funding is continued.

The ultimate purpose of the Division's proposed geothermal injection well study will be to codify those factors which are significant in any determination to permit or deny injection into geothermal wells. Such factors would include but not be limited to:

(1) Well construction,
(2) Expected well life,
(3) Water protection,
(4) Corrosion and treatment,
(5) Area of influence, and
(6) Hydrologic regimes.

The study is expected to involve use of private contractor as well as appropriate Division Staff. Division records and data on existing wells, both inside and outside New Mexico, will be utilized. Depending upon initial findings, the Division may seek industry cooperation in testing programs on actual wells.

Within three years after the approval of the State Primacy application, the Division will present recommendations to the EPA as to the most appropriate regulatory approach to permitting of geothermal injection wells and, if appropriate, remedial action.

OCD Regulatory Program Relative to Geothermal

In a manner to similar to its regulation of oil and gas wells, the Division regulates the drilling for and the production of geothermal resources in this State. This authority is exercised under provisions of the Geothermal Resources Act (Appendix A) and includes, in part, authority to permit and regulate the injection of fluids into geothermal reservoirs, to regulate the subsurface disposal of geothermal resources or the residue thereof, and to require geothermal wells to be operated in such a manner as to afford reasonable protection to human life and health and to the environment.

A full description of the Division's geothermal program does not appear necessary at this time due to the nature of the immediate study activity to be performed following approval of a State Primacy application. A full description would accompany any later application which may be required as a result of the aforesaid immediate activity.

In general, the Division's Geothermal Program encompasses the application and enforcement of its Rules and Regulations and permit terms and conditions.

Significant features of the Division's Rules and Regulations include:

(1) Rule 4 which requires operations to be conducted in a manner which will "afford maximum reasonable protection to human life and health and to the environment."
(2) Rule 100 through 119 which, in part, require designation of a local agent, a plugging bond, a drilling permit (all prior to operations), well identification, the sealing off and separation of strata, including fresh and saltwater strata, and the sealing off of geothermal strata, casing and cement to

well continued

protect water and geothermal zones, the proper disposal of produced water, and notice of leaks, spills and blowouts. Rule 111 confirms the right of duly authorized Division representatives to enter a geothermal resources lease for inspection purposes.

(3) Rule 200 through 212 requires and designates forms and locations for reporting a variety of geothermal operations, including:

   (a) Permit to drill,
   (b) Drilling reports,
   (c) Workover reports,
   (d) Plugging reports,
   (e) Well log data and history,
   (f) Requests for authority to produce or inject,
   (g) Production and injection reports, and
   (h) Well test reports.

(4) Rules 301 through 304 deal with liability and requirements to plug and abandon geothermal wells.

(5) Rules 401 through 403 concern the purchase of geothermal resources.

(6) Rules 501 through 506 cover geothermal injection wells and are more fully discussed later in this description.

(7) Rules 601 through 604 are designed to limit the possibility of loss of control (blowouts) of geothermal wells.

(8) Rules 701 through 723 contain the rules of procedure related to:

   (a) Public hearings and notice thereof,
   (b) Emergency orders,
   (c) Appeal process following issuance of orders resulting from such hearings.

The Division must approve applications to drill, inject into, or plug geothermal wells prior to commencing work. Considerations in such approvals include all those mandated by the Rules and Regulations as well as any considerations related to local conditions in the area involved.

The Division conducts inspections of all types of geothermal operations to assure compliance with Rules and Regulations and with specific permit terms and conditions.

Field inspectors investigate any complaints received and operators are required to cease or correct any operations which do not comply with the Rules and Regulations or with permit conditions.

Geothermal Injection Wells

Geothermal injection and disposal wells are currently regulated under Division Rule 501 through 506. These rules define each such well and preclude its use prior to Division approval.

Rule 501 defines geothermal injection wells and precludes their use prior to Division approval.

Rule 502 defines geothermal disposal wells and precludes their use prior to Division approval.

Rule 503 describes the method and form to be used in making application to the Division for approval of a geothermal injection or disposal well. In general this rule requires preparation of an application (Form C-112) which provides for submittal of plats or maps showing wells within one mile of a proposed injection well, a log of a well, data on well construction and cementing, information on fresh water zones, and information on appropriate operation parameters.

Rule 504 provides for the filing by permittees of monthly injection/disposal reports for any such well.

Rule 505 provides for periodic and continuing testing to confirm the injection/disposal well's mechanical integrity and the containement of injected fluids in the intended zone. The rule further provides for Division inspection of such operations and for prompt correction of unsatisfactory conditions. The rule finally provides for permit rescission after six months of non-injection.

Rule 506 provides for proper abandonment of injection wells.

OCD Staff Responsibility for Geothermal Regulation

The sixty-two staff members of the OCD spend on average of approximately eighteen per cent of their time on UIC activities. The majority of this time is devoted to Class II well regulation. Regulation of geothermal activity throughout the state is the responsibility of District IV staff. At present geothermal activity is taking place in the Rio Grande rift zone which bisects the state from north to south.

The District IV Supervisor, who is also the Division's Chief Geologist, and the District IV Field Inspector, inspect all geothermal operations. The District Supervisor must approve all geothermal applications to drill on state or private land. Applications to drill on federal land are submitted for approval to the U.S. Geological Survey.

Applications for approval to inject are submitted by the operator on Form C-112. They are reviewed and approval by the Division Chief Engineer and signed by the Division Director.

Enforcement actions are taken when required by the District Supervisor and Field Inspector, the General Counsel, and the Division Director.

Individual goethermal well files showing all activity in connection with each well are maintained by District IV personnel. Computer files of geothermal wells are maintained by the Division data processing staff.

Actual or potential water contamination problems related to geothermal drilling and production would be investigated and assessed by the Division Water Resource Specialist.