Activities of the Texas Groundwater Protection Committee Report to the 74th Legislature

Texas Groundwater Protection Committee:

Texas Natural Resource Conservation Commission
Texas Water Development Board
Railroad Commission of Texas
Texas Department of Health
Texas Department of Agriculture
Texas State Soil and Water Conservation Board
Texas Alliance of Groundwater Districts
Texas Agricultural Experiment Station
Bureau of Economic Geology

December 1994

SFR-14

TEXAS GROUNDWATER PROTECTION COMMITTEE

Committee Membership:

Texas Natural Resource Conservation Commission
Texas Water Development Board
Railroad Commission of Texas
Texas Department of Health
Texas Department of Agriculture
Texas State Soil and Water Conservation Board
Texas Alliance of Groundwater Districts
Texas Agricultural Experiment Station
Bureau of Economic Geology

The Activities of the Texas Groundwater Protection Committee was developed and produced by the Texas Grondwater Protection Committee in fulfillment of requirements given in House Bill 1458, Regular Session, 71st Legislature. While the information contained in the report represents the contribution of each individual participating agency and group, the report as a whole is the work of the Committee and does not necessarily reflect all of the views and policies of each participating organization.

Published and distributed
by the

Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-8037

TABLE OF CONTENTS

TABLE OF CONTENTS - CONTINUED

APPENDICES

INTRODUCTION

Creation and Mandate - Texas Groundwater Protection Committee

The Texas Groundwater Protection Committee was created by the 71st Texas Legislature in 1989 as a means to bridge the gap between existing state ground-water programs and to optimize water quality protection by improving coordination among agencies involved in ground-water activities. House Bill 1458 (codified as Chapter 26, subchapter J, Sections 26.401 through 26.407 of the Texas Water Code) established the Committee and outlined the powers, duties, and responsibilities of the Committee.

A state ground-water protection policy was also adopted by the Legislature as part of the bill that created the Committee. The policy sets out nondegradation of the State's ground-water resources as the goal for all State programs. The Policy recognizes the variability of the State's aquifers, the importance of maintaining water quality for existing and potential uses, the protection of the environment, and the maintenance and enhancement of the long-term economic health of the state. The Policy states that discharges of pollutants, disposal of wastes, and other regulated activities be conducted in a manner that will maintain present uses and not impair potential uses of ground water or pose a public health hazard. The use of the best professional judgement by the responsible state agencies in attaining the goal and policy is also recognized.

The Committee actively seeks to implement this policy by identifying opportunities to improve existing ground-water quality programs and promoting coordination between agencies. The Committee also strives to improve or identify areas where new or existing programs could be enhanced to provide additional protection. Major responsibilities of the Committee are:

- To improve interagency coordination in the area of ground-water protection;
- To develop and update a comprehensive ground-water protection strategy for the state;
- To study and recommend to the Legislature ground-water protection programs for areas in which ground water is not protected by current regulation;
- To publish an interagency ground-water monitoring and contamination report; and
- To file with the governor, lieutenant governor, and speaker of the house of representatives a report of the Committee's activities during the biennium preceding each regular legislative session, including any recommendations for legislation for ground-water protection.

The Committee's membership is composed of the following individuals or their designated representative:

- The Executive Director of the Texas Natural Resource Conservation Commission;
- The Executive Administrator of the Texas Water Development Board;
- A representative selected by the Railroad Commission of Texas;
- The Commissioner of Health of the Texas Department of Health;
- The Deputy Commissioner of the Department of Agriculture;
- The Executive Director of the Texas State Soil and Water Conservation Board;
- A representative selected by the Texas Alliance of Groundwater Districts;
- The Director of The Texas Agriculture Experiment Station; and
- The Director of the Bureau of Economic Geology, The University of Texas at Austin.

The Texas Natural Resource Conservation Commission is designated as the lead agency with the

Commission's Executive Director designated as the Committee's Chairman. The Executive Administrator of the Texas Water Development Board is designated as the Committee's Vice-Chairman.

Federal Involvement and Coordination

In March 1985 the Texas Department of Water Resources, predecessor to the Texas Natural Resource Conservation Commission and the Texas Water Development Board, received a grant from the U.S. Environmental Protection Agency (EPA) to improve coordination of ground-water protection activities undertaken by State agencies. In response to this federal mandate, the interagency Groundwater Protection Committee, predecessor to the Texas Groundwater Protection Committee, was formed. Since that time, coordination of ground-water protection activities of the various state programs and agencies, and development of a ground-water protection strategy have been mandated and funded through EPA grants administered under the Clean Water Act, Section 106. During Fiscal Year 1991, EPA required states to reassess their ground-water protection strategies in a process called profiling the state's ground-water protection program. The Committee completed this profile for submission to EPA (TGWPC, 1991c). In addition, EPA's development of its federal ground-water protection strategy for pesticides in ground water requires development of a state management plan for specific chemicals to preserve the use of that pesticide in the state after national use is banned. The Committee is working with EPA to coordinate the development of the state management plan.

During Fiscal Year 1992 and Fiscal Year 1993, EPA developed and published draft guidance for the development of a comprehensive state ground-water protection program (CSGWPP). EPA has developed its concept of such a program and is encouraging states to further their efforts in developing existing programs into a more comprehensive approach. Final guidance was published early in 1993. EPA's guidance first calls for the development of a core protection program, a basic program from which states would work with EPA over the next few years to build a fully integrated protection program. While this is a voluntary program, EPAA has promised greater program flexibility for states with endorsed porgrams.

The Committee feels that the components of Texas' program should meet EPA's criteria for a core program. Early in Fiscal Year 1994, the Committee prepared a Core Program Assessment comparing the Texas program with the federal guidance and demonstrating core program compliance. During Fiscal Year 1994, EPA initiated coordinating mechanisms among its programs to better address a comprehensive approach.

Fiscal Year 1995 should see increased EPA involvement in the process of developing the comprehensive program. The Fiscal Year 1995 work plan has been reorganized to align with the six CSGWPP strategic activities. The Committee's efforts in Fiscal Year 1995 are focused on working with EPA to document the Committee's recent efforts toward strengthening programs and establishing priorities appropriate for the state to achieve a fully integrating CSGWPP.

NEW AND EXISTING COMMITTEE MEMBERS

Senate Bill 469 of the 73rd Texas Legislature, 1993, amended Section 26.403 of the Texas Water Code to extend Committee membership to the Texas Agricultural Experiment Station and the Bureau of Economic Geology, The University of Texas at Austin. In addition, Senate Bill 469 further amended Section 26.403 to formally recognize the change in name from the Texas Groundwater Conservation Districts Association to that of the Texas Alliance of Groundwater Districts. The following description of the ground-water related responsibilities, ground-water related research, and ground-water protection programs conducted by the new and standing member agencies of the Committee. The member agencies cooperate on an ongoing basis to protect the ground-water resources within the State.

Texas Agriculture Experiment Station

The Texas Agricultural Experiment Station (TAES) is the official agricultural research agency in Texas. Headquartered at Texas A&M University, TAES promotes food and fiber production that emphasizes water conservation and the protection of natural resources. TAES operates a system of 14 research centers which are located in the major land and natural resource regions of Texas. The Texas Water Resources Institute is an administrative unit of TAES that guides internal water-related research.

Broad goals of the TAES ground-water research program are to protect, preserve, and efficiently use water resources, and to develop sustainable agricultural production systems. Ground-water programs of TAES stress the development of management strategies, technologies, and educational programs to support sustainable agriculture. TAES ground-water quality research focuses on reductions in chemical use; the control, fate, and transport of agricultural chemicals; and the remediation of contaminated ground waters.

Major new projects are underway to develop strategies to manage brush species on rangelands to increase water yields and protect water quality; to manage livestock wastes from dairies and feedlots to prevent water contamination; and to identify crop production programs that produce high yields while minimizing the loss of pesticides, chemicals and nutrients into ground and surface-waters.

Bureau of Economic Geology

The Bureau of Economic Geology, The University of Texas at Austin, established in 1909 as the successor to the Texas Geological Survey and the Texas Mineral Survey, is a research entity of The University of Texas at Austin. It also functions as the State Geological Survey, and therefore as a quasi-State agency, and the Bureau Director represents Texas in the Association of American State Geologists.

Extensive advisory, technical, and informational services relating to the geology and ground-water resources of Texas are provided by the Bureau. In addition, the Bureau conducts basic and applied research projects in energy and mineral resources and in hydrogeology, ground-water resources, and geochemistry. Some projects are conducted jointly with other units of the University as well as with State, Federal, and local agencies, industry associates, and foreign companies. The Bureau provides ongoing services to governmental agencies such as reviews of (1) environmental impact statements that

are submitted to the Office of the Governor of Texas and (2) permit applications that are submitted to the Railroad Commission of Texas and to the Texas Natural Resource Conservation Commission.

Texas Natural Resource Conservation Commission

The Texas Natural Resource Conservation Commission (TNRCC) conducts various ground-water protection programs that focus on both prevention of contamination and remediation of existing problems through education, permitting, and enforcement. As the state lead agency for water resources, the TNRCC has to administer both state and federally mandated programs including: the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation and Liability Act (also referred to as the Superfund program); the Clean Water Act; the Safe Drinking Water Act; and the state management plans for ground water under the Federal Insecticide, Fungicide and Rodenticide Act.

The Office of Waste Management and Pollution Cleanup conducts the following ground-water related programs. The Petroleum Storage Tank Division regulates underground and above ground product storage tanks and requires ground-water monitoring and remediation at contaminated sites. The Industrial and Hazardous Waste Division has responsibility for preventing contamination and insuring remediation at industrial sites through the waste disposal facility permitting and enforcement programs, underground injection control programs, and uranium and radioactive waste disposal programs. The Municipal Solid Waste Division monitors activities associated with the collection, handling, storage, processing, and disposal of municipal solid waste to ensure protection of ground water and requires remediation where these activities have failed. The Pollution Cleanup Division is responsible for both Federal and State Superfund activities and conducts remedial investigations and seeks funding for remedial activities based upon a health risk ranking program.

The Office of Water Resource Management conducts the following ground-water related programs. The Water Planning and Assessment Division is responsible for supporting the Texas Groundwater Protection Committee and is also responsible for surface and ground-water quality management and planning programs, the Class V underground injection well program, and implementation of the ground-water nonpoint source pollution program and pesticides. The Watershed Management Division is responsible for ensuring that ground-water resources are protected during permitting and enforcement activities related to municipal and industrial wastewater treatment. The Agriculture and Rural Assistance Division is responsible for protecting ground-water resources by permitting confined animal feeding operations and conducting the Wellhead Protection Program. The Water Utilities Division monitors public water systems for compliance with state drinking water standards.

The Field Operations Division of the Office of Legal Services and Compliance is responsible for the field investigation of contamination complaints and the inspection of permitted and non permitted facilities. In addition, primary responsibility for the Edwards Aquifer pollution abatement plan review program and On-site Waste Water Program are in this division. The Water Well Drilling Program is also in this office within the Technical Training Division.

Texas Water Development Board

The Texas Water Development Board (TWDB) conducts an active ground-water resource assessment program. Boundaries and various characteristics for all of the State's major and minor aquifers have been identified and include water availability, recharge, and other geologic information. In addition, major entities using ground water have been identified within each river basin together with the aquifer(s) being utilized, the quality of water being developed, and the quantity of water needed for a 50-year planning period. To accomplish this, the TWDB collects data on the State's aquifers which includes the occurrence, availability, quality, and quantity of ground water present and the current and projected demands on ground-water resources. This is done through the statewide ground-water level measurement program, ground-water quality sampling program, and ground-water studies.

The purpose of the ground-water quality sampling program is to: 1) monitor changes, if any, in the quality of ground water over time; and 2) establish, as accurately as possible, the baseline quality of ground water occurring naturally in the State's aquifers. The ground-water quality monitoring program is accomplished in accordance with procedures established in the TWDB's Field Manual for Ground-Water Sampling, in supplemental samples analyzed on Hach instruments, and by obtaining data collected by other entities such as the Groundwater Conservation Districts and other State/Federal Agencies.

Collected data is processed and stored, by state well number, in the TWDB's ground-water database. Indicators of sample reliability, collecting entity, and analytical laboratory are also stored along with sample results. Since wells are identified with latitude and longitude, GIS systems can spatially present water-quality data throughout the State. Also, the program allows eligible entities to purchase water-quality lab equipment through Agricultural Conservation grants funded by the TWDB. Selected constituents reported by grant recipients are also included in the database.

Railroad Commission of Texas

The Surface Mining and Reclamation Division of the Railroad Commission of Texas (RCT) is authorized to enforce laws and regulations consistent with the Texas Surface Coal Mining and Reclamation Act and the Texas Uranium Surface Mining and Reclamation Act. Ground-water information is required in the regulations, as are monitoring plans for pre-mining and post-mining conditions.

Ground-water investigations and monitoring by the Surface Mining and Reclamation Division is conducted in response to citizen complaints of adverse impact from surface mining activities.

The RCT Oil and Gas Division is responsible for protecting ground water from activities related to the drilling, exploration, and production of oil, gas, and geothermal resources, the underground storage of hydrocarbons, and the solution mining of brine. The regulations of the Oil and Gas Division for the well drilling, completion, and plugging focus on the protection of ground-water resources. The RCT administers the EPA-delegated Underground Injection Control Program under the Safe Drinking Water Act for injection wells associated with oil and gas activities. The RCT regulates the handling, storage, treatment, and disposal of oil and gas wastes. Seismic and core holes, and cathodic protection wells, which are used in relation to oil and gas activities, are regulated by the Oil and Gas Division. The RCT responds to spills from pipelines under its jurisdiction and to other emergencies related to the production and transportation of oil and gas.

The RCT responds to citizen complaints regarding alleged ground-water contamination from oil and gas activities and to alleged unauthorized activities, which may endanger ground water.

Texas Department of Health

The Texas Department of Health (TDH), Bureau of Radiation Control (BRC), regulates radioactive materials in Texas under the authority of the Atomic Energy Act of 1954 as amended. In the past, the BRC also regulated uranium recovery and radioactive waste disposal. As of September 1, 1993, upon the creation of the Texas Natural Resource Conservation Commission, all regulation of these activities transferred to that agency.

Almost all ground-water monitoring activities previously conducted by the TDH/BRC were transferred to the TNRCC on September 1. The BRC continues to monitor ground water for radionuclides on a routine basis at two facilities in Texas - Pantex and the University of Texas System Interim Storage site. Intermittently the BRC will sample ground water as a result of an incident, complaint, or situation which leads the BRC to believe there may be ground-water contamination.

Texas Department of Agriculture

The Texas Department of Agriculture (TDA) has lead authority for pesticide regulation in the state of Texas. Recognizing pesticides as potential ground water contaminants, and having primary responsibility to prevent unreasonable risk to humans or the environment from the use of pesticides, TDA performs studies and analyses aimed at assessing health, ecological, and environmental effects of various pesticides. This analysis is performed by the agency's Pesticide Impact Evaluation activity in order to ensure compliance with federal laws and regulations relating to the use of pesticides and eventual protection of ground water resources. TDA accomplishes this by independently substantiating and validating claims of pesticide contamination relating to human health and the environment. This includes claims of ground water contamination as well.

Texas State Soil and Water Conservation Board

The Texas State Soil and Water Conservation Board (TSSWCB) was created by House Bill 20, Acts of the 46th Legislature in 1939. The Soil and Water Conservation Board is charged with the overall responsibility for administering and coordinating the state's soil and water conservation program with the state's soil and water conservation districts. Title 7, Chapter 201 and 203 of the Agriculture Code of Texas contain the provisions of law pertaining to soil and water conservation and to agricultural nonpoint source programs. The State Soil and Water Conservation Board is named as the agency responsible for implementing the constitutional provisions and state laws relating to the conservation and protection of soil resources. Section 201.016 gives the agency responsibility for planning, implementing and managing programs and practices for abating agricultural and silvicultural nonpoint source pollution. Currently, the agricultural/silvicultural nonpoint source management program includes: problem assessment, management program development and implementation, monitoring, education, and coordination.

Texas Alliance of Groundwater Districts

The Texas Alliance of Groundwater Districts (TAGD) is the umbrella organization composed of ground-water conservation districts within the state. The districts are created by the Legislature or by the Texas Natural Resource Conservation Commission with the purpose and responsibility to preserve and protect ground water. Districts are local or regional in their jurisdiction and have, for the most part, elected boards of directors. Among their legislatively granted authorities is the power to monitor ground-water quality. A number of districts also have the authority to bring civil court proceedings for injunctive relief against an entity causing ground-water contamination.

COMMITTEE ACTIVITIES 1993-1994

Activities

As required under Texas Water Code Section 24.404, the Texas Groundwater Protection Committee met quarterly during the 1993 and 1994 biennium for a total of eight meetings. The Committee's major activities and accomplishments include compilation and publication of two Joint Groundwater Monitoring and Contamination Reports for 1992 and 1993, updating and making revisions to the generic Texas State Management Plan for Agricultural Chemical in Ground Water, development of the Atrazine Chemical Specific Monitoring Plan, and compilation of the Ground-Water Data Dictionary.

At the quarterly meetings, the Committee heard presentations discussing a number of new or improved ground-water protection activities and initiatives from various agencies. The presentations serve to broaden interagency awareness and coordination and have included the following:

- The U.S. Environmental Protection Agency presented a summary of the recently released final guidance for the development of a Comprehensive State Ground Water Protection Program.

- The Texas Water Development Board (TWDB) gave two presentations. The first presentation discussed the Economically Distressed Areas Program in which the TWDB acts as an intermediary for identifying and securing funding for Colonias with inadequate water and wasterwater services, with the long term goal of protecting ground water. The second presentation briefed the Committee on the consensus development process between the TWDB, Texas Natural Resource Conservation Commission (TNRCC), and the Texas Parks and Wildlife Department (TPWD) to produce the State Water Plan. The TNRCC develops water policies based on program and regulatory needs; the TWDB approaches water from a financial, ground water, surface water, and long-range planning perspective; and the TPWD addresses water protection for ecosystems in streams, bays, and estuaries. These discussions and coordination provide a clearer perspective of the state's long-term water needs.

- The Texas Radiation Advisory Board (TRAB) presented information on radiation control, ground-water protection, and understanding the state regulation for control of radiation. TRAB reviews and evaluates radiation policies and programs of the state and makes recommendations on rules and guidelines and provides technical advice. Issues involving ground water included licensing of low-level radioactive waste disposal sites, Naturally Occurring Radioactive Materials (NORM) disposal as it applies to the TNRCC and the Railroad Commission of Texas (RCT), as well as disposal of radium removed in the drinking water treatment process.

- The Bureau of Economic Geology (BEG), The University of Texas at Austin, discussed current ground-water research projects including: geological and hydrogeological characterizations at the Pantex Weapons Facility, the Super Collider site, and the proposed Low Level Radioactive Waste Disposal site in Hudspeth County; nitrate contamination of dairy farms in Erath County; the quantity of ground water within the Edwards aquifer; hydrogeology studies related to energy resource in the Texas Coastal Plains and geothermal energy along the Gulf Coast; ground-water salinization studies in the Concho and Canadian River watersheds; studies of ground-water quality impacts from oil and gas activities; and ground-water impact studies from feedlots and agriculture over the Ogallala aquifer.

- A Texas Agriculture Experiment Station (TAES) presentation discussed their promotion of food and fiber production that emphasizes water conservation and the protection of natural resources. Broad goals of the TAES ground-water research program are to protect, preserve, and efficiently use water resources, and to develop sustainable agricultural production systems. Ground-water programs of TAES stress the development of management strategies, technologies, and educational programs to support sustainable agriculture. TAES ground-water quality research focuses on reductions in chemical use; the control, fate, and transport of agricultural chemicals; and the remediation of contaminated ground waters.

- The U.S. Geological Survey gave a presentation of their ongoing ground-water programs within the state. Programs discussed included the: West Gulf Coast Regional Aquifer System Analysis; Edwards-Trinity Regional Aquifer System Analysis; National Water-Quality Assessment Program (NAWQA) Trinity River Basin; NAWQA South-Central Texas; NAWQA Southern High Plains; Analysis of Flow Paths - Edwards Aquifer; Hydrogeology of the Edwards Aquifer, Uvalde and Knippa Areas; Recharge to Chicot and Evangeline Aquifer, Houston; Effectiveness of Agricultural Best Management Practices for Protecting Ground-Water Quality, Seymour Aquifer, North-Central Texas; and the Hueco Bolson Aquifer, El Paso.

- The Texas State Soil and Water Conservation Board (TSSWCB) gave a presentation on their Agricultural and Silvicultural Water Quality Management Program and the site-specific water quality management plans developed for individual agriculture producers. The TSSWCB establishes the criteria by which the plans are developed in accordance with available technology and established TNRCC water quality standards.

- The TNRCC gave two presentations. The first presentation updated the Committee on new ground-water protection regulations for municipal solid waste landfills and also discussed historic municipal solid waste practices within the state. The second presentation provided information on international ground-water protection activities. The U.S. Environmental Protection Agency asked the TNRCC to assist Mexico in developing a wellhead protection program. The TNRCC presented the Texas Wellhead Protection Program concept to the International Boundary Water Commission in Juárez. The program was met with enthusiasm and interest resulting in a program in Juárez modeled after the El Paso Wellhead Protection Program. Important ground work for the Juárez program has been completed, including the delineation of 130 wellhead protection areas and providing technical assistance.

Other topics of discussion at the quarterly meetings of the Committee included: reorganization of the Texas Natural Resource Conservation Commission; the Clean Water Council's recommendations to the Texas Natural Resource Conservation Commission; activities of the Texas Alliance of Groundwater Districts; public education outreach efforts; ground-water conservation district creation process and legislation; and Clean Water Act, Section 319, Nonpoint Source federal funding.

The Committee was kept apprised of EPA actions in various areas including the development of a comprehensive state ground-water protection program, ground-water monitoring and reporting, and the development of rules for the state management plan process for agricultural chemicals determined to impact ground water. The Committee was also updated on agencies' program changes, rulemaking, ground-water conferences, and publications.

In addition, during the biennium, participating Committee members provided information for the annual Nonpoint Source Management Program Evaluation Report. The report, prepared by the Texas Natural Resource Conservation Commission for submittal to the U.S. Environmental Protection Agency, is an ongoing commitment of the Committee arising from its previous development of the Nonpoint Source Management Plan.

Subcommittees

The Committee has worked through four subcommittees during the biennium to accomplish its major goals. The various subcommittees serve to keep the Committee up to date on activities involving agricultural chemical issues, the ground-water classification system, data management issues, and the preparation of the interagency ground-water monitoring and contamination report. The public is encouraged to fully participate within the subcommittee process.

The Agricultural Chemicals Subcommittee, composed of representatives from each member agency, agricultural commodity groups, and other interested parties, met quarterly during the biennium. In the first quarter of 1993, five work groups were designated: the Site Selection Task Force, the Educational Task Force, the Management Task Force, the Data Evaluation and Interpretation Task Force, and the Atrazine Best Management Plan Task Force. The latter two Task Forces have not been activated to date. The Education Task Force is creating a brochure for distribution through the subcommittee members. A set of slides along with an outlined speech are being assembled for presentation to special interest groups and the general public. The Management Task Force is responsible for the revisions of the State Management Plans (SMPs). Components of the generic SMP have been distributed to each state agency for revisions to parts that affect their respective agencies. A revised document is expected to be submitted to USEPA during Fiscal Year 1995 for concurrence. State, federal, and other entities have met and discussed the best method of implementing these plans. USEPA, through rules, will identify the chemicals that will require pesticide specific state management plans. Without concurred SMPs and approved pesticide specific state management plans (PSSMPs), continued registration for these pesticides will not be permitted, preventing usage of the pesticide in Texas. Further information on the SMPs and PSSMPs are outlined in the following section of this report.

The Data Management Subcommittee was formed to address the issue of coordinating electronic databases between local, state, and federal agencies to improve processing of and access to ground-water data and to develop standards or templates to facilitate the sharing of information.

The Ground-Water Classification Subcommittee has developed a ground-water classification system for use by state agencies. The classification system provides guidelines for developing criteria to assess ground-water impacts, particularly for the remediation of contaminated ground water. The classification is based on ground-water quality conditions - specifically, the total dissolved solids concentration.

An informal subcommittee was utilized to prepare the Committee's Joint Groundwater Monitoring and Contamination Reports for 1992 and 1993. Representatives of each member agency provided information and data for inclusion in the reports. Texas Natural Resource Conservation Commission staff compiled and reviewed the materials and initiated publication efforts for the reports.

Public Records

The Texas Natural Resource Conservation Commission (TNRCC) maintains a mailing list of committee members, designated and alternate members, subcommittee members, agency staff, and interested parties for meeting notification and correspondence. The list of committee members is provided in Appendix II. The TNRCC also maintains audio tapes of Committee meetings, and correspondence of the Committee and its subcommittees. The Committee's publications are available through the Texas Natural Resource Conservation Commission Library. Information regarding each agency's ground-water monitoring programs and each agency's public files on ground-water contamination incidents are maintained by the individual agency or district. Appendix III contains a list of agency contacts for obtaining additional information. Appendix IV provides a list of underground water conservation districts with their mailing addresses for further information about their individual programs and records.

MAJOR ACCOMPLISHMENTS

Ground-Water Nonpoint Source Assessment Report and Management Plan

During 1994, work was carried out to revise the state Nonpoint Source Assessment and Nonpoint Source Management Plan reports, which were last updated in 1991. The Assessment Report is an evaluation of the impacts of nonpoint sources of pollution to ground water. It reflects the state of knowledge about ground-water contamination from nonpoint sources in Texas. The Management Plan is a four-year set of goals for abating those impacts. Implementation of the management program has been underway since 1989. Other state, regional, and local entities are implementing their respective programs, which are generally regulatory or educational in nature.

The reports are being updated to reflect current nonpoint source problem areas; to indicate the changing priorities of the state nonpoint source program; and to make the reports compatible with the surface water portions of the two reports.

Some members of the Texas Groundwater Protection Committee have provided information about nonpoint source programs under their jurisdiction. The report is being compiled by the Ground-Water Nonpoint Source Team of the TNRCC, will be integrated into the overall (surface and ground water) Nonpoint Source Assessment Report and Nonpoint Source Management Plan, and forwarded to the USEPA.

In addition, the TNRCC is also responsible for an annual evaluation of the state nonpoint source management programs. Input to this report is gathered from other entities that carry out nonpoint source programs and combined with the surface water portion of the final report to USEPA. Significant comments were received from the USEPA in 1993 which have helped to improve the format and content of the 1994 edition.

State Management Plan for Agricultural Chemicals in Ground Water

Certain pesticides have been determined to potentially threaten the quality of drinking water supplies in various regions of the country. The USEPA has established a Pesticides and Ground-Water Strategy (USEPA, 1991) to protect ground water through pesticide use management. The USEPA has proposed that specific pesticides that threaten ground water cannot be used in a state unless an approved generic State Management Plan (SMP) and an approved pesticide specific state management plan for each identified pesticide, have been developed and implemented by the state.

The initial Texas State Management Plan for Agricultural Chemicals in Ground Water (TGWPC, 1991) was developed by the Agricultural Chemicals Subcommittee and approved by USEPA in June 1991. This document is now being revised. During the second quarter of fiscal year 1994, the components of the generic SMP were distributed to the state agencies for revisions to the components of the generic SMP which affect their agencies. A final revised document is expected to be submitted to USEPA during Fiscal Year 1995 for concurrence.

The generic SMP describes the general policies and regulatory approaches the State will use in order to protect ground-water resources from risks of contamination by agricultural chemicals and agents. The

generic SMP describes how the various state and federal agencies will cooperate and build upon existing efforts they have undertaken in developing comprehensive ground-water protection programs, nonpoint source plans, as well as other ground-water programs and activities. The development of the generic SMP was guided by the Texas Groundwater Protection Strategy (GWPC, 1988), the USEPA's Pesticides and Ground-Water Protection Strategy, and the Draft Guidance for Pesticides and Ground Water State Management Plans (USEPA, December 1993). The generic SMP represents an effort of all participating Committee agencies and includes input from agricultural and environmental interest groups. The program allows for public participation in the development of the generic and pesticide specific state management plans.

The major principles that govern the generic SMP include: the importance and benefits of agricultural chemicals to the economy of the State; the focus of ground-water protection at the state and local level with the assistance from federal expertise and information; proper use of agricultural chemicals to prevent impairing any present or future use of ground water or causing a public health hazard; directing ground-water quality monitoring to areas of the state most vulnerable to contamination; tailoring chemical specific use and practices to prevent contamination from chemicals that pose a threat to ground-water quality; and emphasis on education and voluntary implementation of best management practices.

The generic SMP provides the framework for the Pesticide Specific State Management Plans (PSSMPs). A PSSMP is required for each pesticide identified by USEPA as having a potential to contaminate ground water under normal use conditions. An PSSMP outlines the steps the state will take to facilitate the wise use of a pesticide in a manner that is protective of ground-water resources. This will include monitoring of ground-water quality and encouraging the use of voluntary best management practices. If contamination is still occurring, regulatory best management practices may become necessary to allow continued use of the pesticide within the State. If all management practices fail, the use of the pesticide can be cancelled in vulnerable areas. If USEPA determines that the State is unable to implement an effective PSSMP, USEPA will cancel the use of the pesticide statewide.

The Agricultural Chemicals Subcommittee is currently developing a PSSMP for the pesticide atrazine. One primary ingredient for each PSSMP is conducting a monitoring program for the pesticide in question. The chemical specific monitoring program for atrazine is now being carried out. A test geographic area for monitoring atrazine has been chosen based on the combined presence of the following conditions: relatively high use of atrazine, presence of leachable soils, and presence of a shallow ground-water table. In addition, shallow wells must be present that are suitable for sampling. The selection focused on areas most vulnerable to ground-water contamination by the normal use of the pesticide. Using this criteria, the Brazos River alluvium area in Robertson, Brazos, and Burleson Counties has been chosen for the initial atrazine monitoring program. At present the monitoring program is in the well sampling stage. Because of difficulties in securing permission to sample private wells, only monitoring wells and irrigation wells on Texas A&M property, in the Brazos River Bottom, are scheduled for sampling at this time. It is hoped that permission can yet be obtained to sample some other wells in the area.

Comprehensive State Ground-Water Protection Program

In evaluating state's activities under the Ground Water Protection Strategy initiative begun in the early 1980's, EPA concluded that additional efforts were needed to protect the nation's ground water. EPA developed a new initiative to build core programs which were termed comprehensive state ground water protection programs (CSGWPP). The Committee feels that the components of Texas' program should

meet EPA's criteria for a core program. Early in Fiscal Year 1994, the Committee prepared a Core Program Assessment comparing the Texas program with the federal guidance and demonstrating core program compliance. During Fiscal Year 1994, EPA initiated coordinating mechanisms among their program to better address a comprehensive approach.

The Committee prepared and submitted a Core Program Assessment to EPA in October of 1993. The Core Assessment compared the Texas ground-water protection program, as strengthened and coordinated by the Committee, to federal CSGWPP guidance. The Committee feels that the Assessment demonstrated core program compliance, thus providing the base from which to develop the fully integrating CSGWPP. All the activities of the Committee outlined in this report; such as Ground-Water Classification, data management coordination efforts, the development of the SMPs, and public education support, are a part of the Texas program. These efforts are significant improvements and serve to address the components of a fully integrating CSGWPP. Activities planned for Fiscal Year 1995 are focused on public education, ongoing data management, and coordination with local government. The Committee's activities have and will continue to improve protection of ground water in Texas and provide an integrated protection program which will also address federal initiatives.

Ground-Water Data Dictionary

The Data Management Subcommittee was formed to address the issue of coordinating electronic databases between local, state, and federal agencies to improve processing of and access to ground-water data. The Subcommittee's main goals are to develop ways of linking and sharing ground-water data and to develop standards or templates to facilitate the sharing of information. The Subcommittee distributed a review draft of the Texas Ground-Water Data Dictionary to the full Committee on August 20, 1994. Representatives of ten state, federal, and local agencies, and the private sector spent over two years preparing this document. The document contains descriptions of 141 data elements, 52 look-up tables, as well as guidance on the design of databases. Current plans are to publish the dictionary in both digital and paper formats. The subcommittee believes that the data dictionary can be used by all levels of government and the private sector as a basis for sharing ground-water information.

Ground-Water Classification

The Ground-Water Classification System developed by the Committee has been incorporated into rules of the industrial solid waste program of the Industrial and Hazardous Waste Division and the Pollution Cleanup Division of the TNRCC for closure and remediation of hazardous and non-hazardous waste sites and areas of contamination. The rules, known informally as the Risk Reduction Rules, were promulgated in Title 30 Texas Administrative Code Chapter 335, Subchapters A and S, with an effective date of June 28, 1993. These rules specify three risk reduction standards or levels of cleanup for contaminated media including ground water. Standard 1 calls for cleanup to background conditions regardless of the ground-water classification. Standards 2 and 3 allow for consideration of the potential use of ground water as a human drinking water resource based on Total Dissolved Solids (TDS) concentration. Cleanup levels are initially based on human health criteria or promulgated drinking water standards for ground water with a background TDS concentration less than 10,000 milligrams per liter, consistent with the classification. Other considerations specified in the rules can adjust these levels, taking into account ecological impacts or ingestion rates reflecting residential or industrial exposure.

For example, the point of exposure where ground water would be pumped from a well, is set at the waste unit for Standard 2 but can be varied for Standard 3. Standard 2 utilizes a multiplier of 100 times the drinking water standard to set a maximum level, subject to other limitations. Standard 3 utilizes an alternate concentration limit determined by site specific considerations. In both Standards 2 and 3, phase separated liquids such as gasoline must be removed or decontaminated to the extent practicable and effects of contaminant migration to surface water or other drinkable ground-water resources must be evaluated. If the salinity of the ground water exceeds the TDS threshold, cleanup levels are based on criteria other than human health protection.

Educational Outreach

The Committee has compiled an educational brochure (TGWPC, 1994b) which outlines the Committee's creation, membership, and major responsibilities. The brochure also discusses the state's ground-water protection strategy and implementation, subcommittee responsibilities, Committee meetings, and the development of a Comprehensive State Ground-Water Protection Policy. The educational brochure has recently been published by the TNRCC print shop. In addition, the Committee has initiated efforts to compile a ground-water information directory listing descriptions of, and contacts for, the myriad of ground-water programs administered by the member agencies.

In addition, the Agricultural Chemicals Subcommittee is creating a brochure (TGWPC, 1994c) for distribution through the subcommittee members. The brochure introduces and discusses the Texas State Management Plan for Agricultural Chemicals in Ground Water and the Pesticide Specific State Management Plans. The brochure also includes information on: the registration process for a pesticide; illustrates the implementation of Pesticide Specific State Management Plans; and lists members of the Agricultural Chemicals Subcommittee including the Committee members, cooperative federal agencies, agricultural producer groups, and other assorted groups. A set of slides along with an outlined speech are being assembled for presentation to special interest groups and the general public.

JOINT GROUNDWATER MONITORING AND CONTAMINATION REPORT

Section 26.406 of the Texas Water Code requires the Committee to annually publish a report on the ground-water monitoring activities of each member agency and cases of documented ground-water contamination related to activities regulated by the state agencies represented on the Committee. Section 26.406 requires the annual report to describe the current status of ground-water monitoring activities conducted by or required by each agency at regulated facilities or associated with regulated activities. The report is required to contain a description of each case of ground-water contamination documented during the previous calendar year, and a description of each case of contamination documented during previous periods for which enforcement action was incomplete at the time of issuance of the preceding report. The report is also required to indicate the status of enforcement action for each case listed.

The Committee produced and published two reports during the biennium. The Joint Groundwater Monitoring and Contamination Reports for 1992 and 1993 (TGWPC, 1993b and 1994a) described the status of ground-water monitoring programs and ground-water contamination cases documented or under enforcement status by the participating agencies for the previous calendar year. The reports further describe the enforcement status of each case of ground-water contamination in a tabular format.

Ground-Water Monitoring

Several state regulatory agencies require or conduct ground-water monitoring to assure compliance with guidelines and regulations and to protect ground water from discharges of contaminants. Each agency or specific regulatory program that requires ground-water monitoring has its own monitoring program requirements and procedures. Some agencies or entities do not have specific regulatory functions which would be served by ground-water monitoring programs. Agencies or entities such as the Texas Water Development Board conduct ground-water monitoring to assess ambient or existing ground-water quality conditions and to track changes in water quality over time. Some monitoring programs are developed for water-quality assessment studies which target specific geographic areas and specific contaminants or constituents. Contamination cases discovered by these agencies or entities through ground-water studies or ground-water sampling programs are referred to the regulatory agency with appropriate jurisdiction (TGWPC, 1994a).

Twelve major programs in three agencies monitor changes in ground-water quality for permit and operational requirements at over 8,000 facilities statewide. An estimated 23,000 monitor and water wells were being used for ground-water monitoring at these facilities. The majority (97.3%) of the facilities being monitored were under the jurisdiction of the Texas Natural Resource Conservation Commission, with the remainder under the jurisdiction of the Railroad Commission of Texas (slightly less than 2.7%) and the Texas Department of Health (less than 0.1%). Monitoring programs addressing ambient ground-water quality and assessing the occurrence of particular constituents carried out by the Texas Water Development Board and participating organizations involved over 1,000 water wells (TGWPC, 1994a).

Ground-Water Contamination

There were 5,670 documented ground-water contamination cases listed in the 1994 report. Approximately 97% of the cases were under the jurisdiction of the Texas Natural Resource Conservation

Commission. The remainder of the cases were under the jurisdiction of the Railroad Commission of Texas with slightly more than 1%, the Texas Department of Agriculture with slightly more than 1%, and the underground water conservation districts which make up the Texas Alliance of Groundwater Districts with less than 1%. The Interagency Pesticide Database, which represents a multi-agency compilation of ground-water impacted by agricultural chemicals, also contained less than 1% of the total number of cases in the report (TGWPC, 1994a).

The most common contaminants reported include gasoline, diesel, and other petroleum products attributed to the large number of petroleum storage tank cases listed in the reports. Less common contaminants included volatile organic compounds (such as benzene; toluene; xylene; phenol; trichloroethylene; carbon tetrachloride; dichloroethylene; and naphthalene), pesticides (such as Alachlor; Atrazine; Bromacil; Dicamba; and Prometon), creosote constituents, solvents, heavy metals, and sodium chloride (TGWPC, 1994a).

Once ground-water contamination is confirmed, cases generally follow a sequence of actions until the investigation concludes no further action is necessary. The activity status for all cases are identified in the reports. The following table shows the number of documented cases of ground-water contamination and the activity status for cases listed in the 1993 and 1994 reports.

ACTIVITY STATUS	CALENDAR YEAR 1992	CALENDAR YEAR 1993
DOCUMENTED CASES	5632	5670
NO ACTIVITY	21	10
CONTAMINATION CONFIRMED	1288	1410
ONGOING INVESTIGATION	2202	2153
CORRECTIVE ACTION PLANNING	828	751
ACTION IMPLEMENTED	524	717
MONITOR ACTION	468	266
ACTION COMPLETED	273	343
NO STATUS GIVEN	28	20

In the two-year period covering 1992 and 1993, there was a net increase of 38 (from 5,632 to 5,670) in the total number of ground-water contamination cases documented within the state. Documented ground-water contamination cases under the jurisdiction of the Petroleum Storage Tank (PST) Division of the TNRCC represented 86.7% and 86.3% of the total ground-water contamination cases, and 89.6% and 88.9% of the TNRCC's ground-water contamination cases, documented in 1992 and 1993 respectively.

Increases in the number of documented ground-water contamination cases have been observed in several programs administered by the TNRCC during the two years covering 1992 and 1993. The PST Division saw a net increase of ten (from 4,883 to 4,893) in the number of cases with documented ground-water contamination. The Industrial and Hazardous Waste Division (IHW) saw a net increase of 22 (from 435 to 457) in the number of documented ground-water contamination cases. In 1993 ground-water contamination cases under the jurisdiction of the IHW Division represented 8.0% of the total ground-water contamination cases. The Pollution Cleanup Division (PCD) saw an increase of ground-water contamination cases of 131% (from 58 to 76). PCD Division cases represented 1.3% of the total number of ground-water contamination cases in 1993. The Municipal Solid Waste Division (MSW) realized a net increase of two (from 22 to 24) in the number of ground-water contamination cases under their program. The MSW Division cases represented less than 1% of the total number of ground-water contamination cases listed in 1993. The increases observed in the programs listed above were generally due to new efforts in ground-water monitoring. As new ground-water monitoring requirements come into effect for several programs, it is anticipated that these programs will observe an increase in the number of documented ground-water contamination cases (TGWPC, 1994a).

Over the two-year period covering 1992 and 1993, action was completed on 273 and 343 ground-water contamination cases respectively. The completed ground-water contamination cases are dropped from the report annually. Action on these cases was considered complete when the desired remedy was achieved or when no further regulatory action was required. From 1989 to 1992, the number of new ground-water contamination cases documented within the state each year was far greater than the number of cases in which action had been completed. This trend appears to be slowing in view of the 1993 data. From 1992 to 1993 there was an increase of 122 (from 1,288 to 1,410) new cases of ground-water contamination confirmed and an increase of 70 (from 273 to 343) cases of ground-water contamination where action was completed. In 1993, the majority of the documented cases were being addressed through ongoing investigations (2,153 cases), corrective action planning (751 cases), corrective action implementation (717 cases), or monitoring of the corrective action (266 cases).

Historically, the continued growth of the number of documented ground-water contamination cases identified by the PST program was mainly responsible for the dramatic increase in the total number of ground-water contamination cases documented within the state. The total number of new ground-water contamination cases documented for the initial four-year period of the report's publication was heavily influenced by the regulations (Title 30, Texas Administrative Code, Chapter 334) of the PST program. The regulations call for mandatory upgrading of existing underground storage tank (UST) systems. The sheer number of UST systems requiring upgrading had a direct relationship with the number of ground-water contamination cases documented. The majority of the milestone dates for UST systems to come into compliance have been met. It is anticipated the growth in the number of ground-water cases documented by the PST Division should begin to show a decline in the future, as fewer new ground-water contamination sites are expected to be documented, and action will be completed on a large number of the existing ground-water contamination sites.

GROUND-WATER PROTECTION STRATEGY

Strategy Development

The Texas Groundwater Protection Strategy (GWPC, 1988) was developed by the Groundwater Protection Committee, the predecessor committee to the Texas Groundwater Protection Committee. The Strategy is intended to be a flexible guide for state agencies and others in developing and implementing ground-water protection efforts. The Strategy was preceded by the compilation of existing ground-water programs published by the predecessor committee and titled Texas Groundwater Protection Activities - 1986 (GWPC, 1986). The Strategy was developed by six subcommittees consisting of committee members, agency staff, and interested parties over the course of many months.

The Strategy outlines goals, needs, and recommendations in six important areas: Interagency Coordination; Hazardous and Non-Hazardous Materials Management; Public Water Supply; Rural Water Supply; Research; and Legislation. Within these areas, the following strategy elements are discussed: status of existing programs; gaps or inadequacies in these programs; areas of currently unaddressed ground-water issues; recommendations for changes or improvements in existing programs and institution of new programs where needed. The final chapter of the Strategy summarizes the important needs and goals for improvement of ground-water protection efforts.

Strategy Implementation and Update

House Bill 1458 requires the Committee to "develop and update a comprehensive ground-water protection strategy for the state that provides guidelines for the prevention of contamination and for the conservation of groundwater and that provides for the coordination of the ground-water protection activities of the agencies represented on the committee." The Committee, as reported to the 72nd Legislature (TGWPC, 1991a), added contributions to the Strategy from two new member agencies, the Texas Alliance of Groundwater Districts and the Texas State Soil and Water Conservation Board. The Committee also reported at that time on implementation efforts of the agencies since publication of the Strategy in 1988.

During the biennium, the Committee made two important efforts concerning the Strategy. In 1991, the Committee developed a Profile of the State's ground-water protection program at the request of EPA. The Profile sought to set out the current roles of each state agency in ground-water protection and identify new efforts and improvements in the program. During 1992, the Committee discussed and prepared comments and input on EPA's efforts and guidance for the development of a state comprehensive ground-water protection program (CSGWPP). Member agencies attended an EPA Roundtable discussion on the CSGWPP in December of 1992 and provided additional input to EPA.

Development of a Comprehensive State Groundwater Protection Program

The first step identified by EPA in building a CSGWPP is the development of a core ground-water protection program. The Core Program in Texas has as its basis the Groundwater Protection Policy set out by the Legislature and the Groundwater Protection Strategy developed by the Committee. The Profile of the state's program, developed in 1991, outlined the agencies' responsibilities relative to the basic activities identified by EPA for a CSGWPP. Early in Fiscal Year 1994, the Committee prepared a Core Program Assessment comparing the Texas program with the federal guidance and demonstrating core program compliance. During Fiscal Year 1994, EPA initiated coordinating mechanisms among their program to better address a comprehensive approach.

The Committee prepared and submitted a Core Program Assessment to EPA in October of 1993. The Core Assessment compared the Texas ground-water protection program, as strengthened and coordinated by the Committee, to federal CSGWPP guidance. The Committee feels that the Assessment demonstrated core program compliance, thus providing the base from which to develop the fully integrating CSGWPP. All the activities of the Committee outlined in this report; such as Ground-Water Classification, data management coordination efforts, the development of the SMPs, and public education support, are a part of the Texas program. These efforts are significant improvements and serve to address the components of a fully integrating CSGWPP. Activities planned for Fiscal Year 1995 are focused on public education, ongoing data management, and coordination with local government. The Committee's activities have and will continue to improve protection of ground water in Texas and provide an integrated protection program which will also address federal initiatives.

RECOMMENDATIONS TO THE 74TH LEGISLATURE

These recommendations reflect the consensus of the Committee to further the protection of ground-water resources within the State. They do not represent the views of any individual agency on the Committee, rather a consensus recognition of the issues. Recommendations were initially brought forward by Committee members and the public during a Legislative Report Subcommittee meeting which focused on ground-water protection concerns. The full Committee discussed and came to a consensus on four of the original eight recommendations brought up from the Subcommittee.

Ground-water protection has become an increasingly important concern of the general public and local, state, and federal agencies. High quality ground-water resources are of vital importance to the State and the public welfare. The State has responded to this need through the formation of the Texas Groundwater Protection Committee and through the actions of the individual agencies and organizations represented on the Committee. As required by Texas Water Code, Section 26.405(4), the following recommendations for legislative action regarding ground-water protection are being submitted by the Committee. The Committee also urges the Legislature to carefully consider the Legislative Appropriations Requests of the individual agencies and provide the funds necessary to carry out the existing and recommended ground-water protection programs.

Topic 1 - Pesticide Specific State Management Plans

Problem to be Addressed:

Under Chapter 26 of the Texas Water Code, Subchapter J, the Committee is tasked to facilitate state efforts to develop and implement management plans for agricultural chemicals (e.g., pesticides) that threaten ground water. In the near future, EPA will release proposed rules for development and implementation of pesticide specific management plans for five pesticides that are heavily used within the state. EPA has indicated that funding for this program is minimal and will remain so in the future. Once the federal rules are published and final, federal funding levels will still not be adequate to support the full development and implementation of the plans. Without EPA approved pesticide specific state management plans, EPA will cancel the use of these pesticides statewide, ultimately affecting a large segment of the state's agricultural community.

EPA is proposing that a pesticide specific state management plan will be required for each pesticide that poses a potential threat to contaminate ground water under normal use conditions. Over the next two to three years, EPA will require the state to develop and implement specific management plans to maintain the usage of the following pesticides; Alachlor, Atrazine, Cyanazine, Metolachlor, and Simazine. There is a distinct possibility that additional pesticides will be added to the federal list in the future. Pesticide specific state management plans outline the approach the state will take to facilitate the wise use of a pesticide in a manner that is protective of ground-water resources. This approach will include monitoring of ground-water quality and encouraging the use of voluntary best management practices. If ground-water contamination still occurs, regulatory best management practices may become necessary to allow continued use of the pesticide within the state.

The following entities are involved in the development and implementation of the pesticide specific state management plans: the Texas Natural Resource Conservation Commission, Texas Department of

Agriculture, Texas Water Development Board, Texas State Soil and Water Conservation Board, Texas Agricultural Experiment Station, Texas Agricultural Extension Service, Railroad Commission of Texas, Bureau of Economic Geology, and the Texas Alliance of Groundwater Districts. Additionally, grower and producer groups, chemical manufacturers, and public interest groups have been involved in the planning phase of this program. The development and implementation of the state management plans are the main focus of the Committee's Agricultural Chemicals Subcommittee.

The Committee has several concerns regarding the pesticide specific state management plans. Currently, the state does not know exactly what will be mandated by EPA for the implementation of the state management plans. This uncertainty does not allow for clear planning on what the future cost of the state management plans could be. In addition, EPA has not indicated a clear time-line for the implementation of the state management plans. Lastly, the Committee is concerned with funding for the implementation of the state management plans. As previously mentioned, EPA funding for the state management plans has been minimal.

Costs associated with the development and implementation of the pesticide specific state management plans include: geographic targeting and preventative measures; implementation, monitoring, modeling, research, and education; and compliance and prevention assessment. Total cost to the state is unknown. A preliminary estimate for the development and implementation of the pesticide specific management plans for the Texas Natural Resource Conservation Commission alone is $250,000 per pesticide per year.

Recommended Legislative Action:

The Texas Groundwater Protection Committee would like to make the Legislature aware of the possibility of an EPA regulation regarding the implementation of a state management plan for pesticides in ground water that may be issued in the future. This regulation may be issued in the form of an under-funded federal mandate. As a result, there may be a need for additional state funding in order to implement such a program.

Topic 2 - Committee Membership

Problem to be Addressed:

The Texas Groundwater Protection Committee is the legislative designated organization responsible for the coordination of the ground-water protection programs within the state. The Committee is composed of representatives from the principal agencies in Texas involved in ground-water protection policies and programs, data collection and management, and research.

Through the Legislative Report Subcommittee, the U. S. Geological Survey (USGS), Texas District, approached the Committee with a proposed recommendation to the Legislature to be added as a member of the Committee. In the past, USGS has interacted with the Committee through the subcommittee and public participation processes. The USGS has a purely scientific mission and does not have responsibility for the management or regulation of water resources in Texas. The agency serves a very important role by providing needed information interpretations, data, and predictive tools for water managers and regulators at all levels of government and the public. The USGS conducts its ground-water data and research programs in cooperation and collaboration with most of the agencies represented on the Committee as well as over 50 other local, regional, and federal agencies.

The issue of Committee membership was taken up by the Committee for discussion. In addition to the USGS, several state agencies with ground-water programs have informally suggested the desire to serve on the Committee, and some of the current member agencies have been modified by the Legislature to no longer have direct jurisdiction over programs related to ground water. The Committee has no formal guidelines for the addition or deletion of state or federal agencies for membership to or from the Committee.

Recommended Legislative Action:

It is recommended the Legislature establish guidelines for Committee membership and review the Committee's current membership for their appropriateness to meet the Committee's goals. The Committee seeks the Legislature's comments and guidance on this issue.

Ground-Water Data Management and the Critical Ground-Water Area Program

The remaining two topics are similar in several aspects. Both topics involve ground-water protection programs which are currently carried out by the Texas Natural Resource Conservation Commission (TNRCC) and the Texas Water Development Board (TWDB). Both programs have been carried out through funding from general revenue in the past, and ideally this funding should be increased to strengthen the programs. For the past four years, as general revenue funding has become less available, the implementation of the two programs has been seriously impeded.

Topic 3 - Ground-Water Data Management

Problem to be Addressed:

The drilling of water wells, and the data contained on well reports submitted to the state, provide the primary source of information for ground water throughout the state. Over 16,000 water wells and an additional 8,000 dewatering, injection, and monitoring (DIM) wells are drilled annually statewide. The TNRCC currently has records for 438,953 water wells within the state. The acquisition, organization, and accessibility of the data contained in these records are of critical importance to all the member agencies represented on the Committee, as well as to the public and private sectors. Accurate well locations are critical for ground-water protection activities such as the performance of environmental assessments, identifying possible direct conduits to aquifers in wellhead protection areas or in areas adjacent to regulated facilities, monitoring ambient ground-water quality and ground-water levels adjacent to regulated facilities, and ultimately providing protection to the citizens of the state from ground-water contamination and the degradation of ground-water resources. The proper maintenance of ground-water data impacts local, state, and federal efforts to insure adequate supplies of ground water for agricultural, industrial, domestic, and public use; and is critical in efforts to identify, prevent, and remediate ground-water contamination for public health protection.

Reduced funding has seriously degraded two components of the state ground-water data system: well location and processing of the well reports submitted to the state. Less than 45% of the water wells with assigned state well numbers meet the accuracy level of 25 meters (approximately 82 feet). This level of accuracy is needed by state agencies and the public and private sectors to facilitate ground-water protection efforts. Other water and DIM wells with partial state well numbers have far less accuracy,

and may be located only within one quarter of a mile of their actual location. In addition, there is a backlog of approximately 80,000 water and DIM wells, which have not been located and are catalogued by county name only, making them virtually unaccessible for assessments and other studies. Funding levels have significantly reduced efforts necessary to locate new or reworked wells. Entering the twenty-first century with the advent of geographical information systems (GIS) and with the continued reliance of the state agencies upon GIS to assemble, store, query, and display geographical information, accurate well locations must be obtained to maintain a dynamic ground-water data management system. Due to a lack of processing, accessibility to information on water wells has been significantly reduced and has made it extremely difficult for private citizens, engineering firms, and governmental agencies to access and use existing data on the location of water wells.

Recognizing the importance of maintaining accurate information regarding ground-water data, the 59th Legislature (1965), required water well drillers to submit a well report to the state for each well they completed. From 1962 until 1986, partial well numbers were assigned consisting of five digits and an alphanumeric character(s). This provided location accuracy within a 2.5-minute quadrangle (approximately 2.5 square miles). The alphanumeric characters further identified the well location within the 2.5-minute quadrangle. The wells were plotted on county highway maps from the drillers written locational directions. From 1986 until September 1991, only partial well numbers to the 2.5-minute quadrangle (five digits, no alphanumeric character) were assigned; reduced funding did not allow for the wells to be located on maps. From September 1991 until September 1994, reduced funding did not allow for the assignment of 2.5-minute quadrangle numbers for new wells.

Well reports for approximately 80,000 wells, drilled from September 1991 through September 1994, are filed by county name only. A new program for locating wells was implemented by the TWDB and the TNRCC in September 1994. With this program, licensed drillers purchase 2.5-minute gridded county maps from the TNRCC, which in conjunction with new well report forms, allows the drillers to locate the wells to within a few hundred feet within a 2.5-minute quadrangle. The new program has had excellent results to date. This filing and numbering system is the initial foundation for locating water wells, accessing information on ground-water quantity and quality, and assuring that abandoned water wells are addressed. However, because there has been a four-year gap in processing, local and regional entities have begun assigning their own "state wells numbers" bringing chaos to a system designed to coordinate ground-water data management at all levels of government.

Before the ground-water data contained in the well reports submitted to the state becomes electronically accessible, a three-step process for unique identification and inventorying of water wells is necessary. Initially, the well reports are submitted to the state, and efforts must be made to insure the location data on the well reports are as accurate as possible. In addition to location data, the well reports include ground-water quality data, ground-water level data, geological data, and well construction data which provides insight as to the ground-water condition at the well. Secondly, to ensure accuracy levels needed (<25 meters) by the state, public, and private sectors, the wells must be inventoried (accurately located in the field). Inventorying has been restricted to only high capacity water wells or other wells as needed to allow the TWDB to take a regional approach in researching the state's major and minor aquifers. To date, approximately 115,000 sites with assigned state well numbers have been field located to a more accurate level. Additionally, the TNRCC's Water Utilities Division has inventoried public water supply wells and has varying degrees of location accuracy for over 15,000 public water supply wells. There is some overlap of the wells inventoried by the TWDB and the Water Utilities Division, however the two agencies are coordinating efforts to avoid duplicative work. Finally, to make the data accessible to others, the data is entered into the TWDB's digital ground-water database.

Only the sites which have been assigned state well numbers, field located and verified, and their geographic locations digitized, can be included in the TWDB's database, making this information readily available to users. The value of the ground-water data includes: the location and purpose of each well and the use of water; the regional identification and tracking of ground-water quality and quantity over time; the location of domestic wells, and the identification of shallow water wells which may be impacted by man's activities; and the study of ground-water systems within individual aquifers.

Several priorities must be addressed to ensure the integrity of the ground-water data management system. Where possible, digital geographic locations need to be incorporated into the database for the new water wells. Also, the database must be dynamic, and should be continually updated regarding information pertaining to ground-water quality, ground-water levels, and additional information for individual wells. Secondly, the backlog of 80,000 water and DIM wells needs to be addressed in regard to filing and accessibility. For the state agencies and the public and private sectors which rely on accurate well locations, the assignment of partial well numbers to the backlog of well reports, and the accurate filing of the well reports must be accomplished.

Recommended Legislative Action:

The Legislature should address the funding needs to maintain the state's ground-water data system. Increased funding for ground-water data management is needed for the member agencies of the Texas Groundwater Protection Committee to perform their legislatively mandated duties for the protection of ground-water quality and quantity, the conservation of ground-water resources, and to better serve the citizens of Texas by providing accurate and timely information that will enhance planning for economic growth and development within the State.

Topic 4 - Critical Ground-Water Area Program

Problem to be Addressed:

As the State's population continues to increase, the demands for ground-water supplies continue to increase as well. In many areas of the state, there has been a continuous deterioration of ground-water quality due to the intrusion of poorer quality ground water from overpumpage or salt-water intrusion. In other parts of the State, ground-water levels have continued to fall in certain aquifers. As a result, little or no opportunity may exist for the conjunctive management of ground-water and surface-water supplies.

Critical areas are defined as those areas experiencing or likely to experience critical ground-water problems such as water shortages, land subsidence, ground-water contamination including saltwater intrusion, and waste of ground-water supplies. The main objective of the critical area process is to identify problems which could arise within the immediately following 20-year period. By educating the local citizens on these problems and encouraging the creation of local ground-water conservation districts, the State initiates a process that will allow local populations to begin addressing their problems. In the past, this program has been successful in increasing the awareness of ground-water problems.

The Critical Area Program can and has served as a driving force for public awareness and involvement in ground-water problems and focused attention on areas of the state where ground-water resources are most threatened. Currently, the Critical Area Program is behind schedule in implementing actions within

four Designated Critical Areas, in following monitoring activities in eight identified study areas, in completing the sixteenth study, and in reviewing and initiating new studies in problem areas of the state. Due to a general revenue shortfall and new legislative mandates, sufficient funding has not been allocated to the Critical Area Program. If adequate funding were available, these funds would be applied in the following areas: administering of the Critical Area Process; completing the sixteenth critical area ground-water study; holding district creation hearings in the four Designated Critical Areas; follow-up monitoring in eight critical study areas previously identified; and, identifying and initiating future critical area ground-water studies by the TNRCC and the TWDB. In addition, these funds would allow the TNRCC and the TWDB to continue to provide technical assistance, upon request, to existing ground-water conservation districts.

In 1985, the 69th Legislature amended Chapter 52 of the Texas Water Code, adding Subchapter C which allows for the creation of ground-water conservation districts in critical areas. Under Section 52.051, the Legislature recognized that certain areas of the state have experienced and will experience in the future critical ground-water problems including water shortages, land subsidence, ground-water contamination including salt-water intrusion, and waste of ground-water supplies. The Legislature's goal was to establish a procedure through which the TNRCC and the TWDB could monitor and study ground-water conditions within the state and work within critical areas to solve existing or potential problems. It was also the goal of the Legislature to assure that the local populations determine the best methods for handling ground-water problems either through the creation of ground-water conservation districts or through other means available in each specific area. Chapter 52 of the Texas Water Code gives local governments the power to address ground-water problems. It also provides a mechanism for ground-water conservation districts to finance the management of ground water. If local initiatives fail to approve the creation of ground-water conservation districts within the critical areas, Subchapter C authorizes the TNRCC and the TWDB to identify and delineate critical ground-water areas within the state and to initiate the creation of ground-water conservation districts within these areas.

Since the enactment of the Critical Area Program, sixteen critical area ground-water studies have been initiated; fifteen of which have been completed. In 1990, five of these study areas were recommended by the Commission's executive director for designation as Critical Areas. Subsequently, four of the study areas were designated as Critical Areas, and the fifth proposed designation was placed under advisement until the completion of a regional water study by the local government. The executive director recommended that three of the study areas not be designated Critical Areas. The executive director also recommended the remaining seven study areas not be designated as Critical Areas but that the Commission continue to monitor ground-water levels and local ground-water management initiatives over the next five years to determine if ground-water problems were being mitigated.

Through local initiatives, four new districts have been created in Designated Critical Areas and a fifth district has currently petitioned the Commission for creation. Annexations of three areas to existing districts have also taken place in Designated Critical Areas. In the other seven study areas, there has been local initiative for district creation and significant, but less formal, ground-water management efforts. During the last four years, the Critical Area Process has been placed "on hold" due to insufficient funding.

Recommended Legislative Action:

The Committee recommends that the Legislature provide a mechanism for funding the Critical Area Program authorized under Chapter 52 of the Texas Water Code. The proposed funding should also be

made available to allow the TNRCC to assist, and the TWDB to further assist, the existing ground-water conservation districts by providing technical assistance upon request.

REFERENCES

Groundwater Protection Committee (GWPC), 1988, Texas Ground Water Protection Strategy; Texas Water Commission Report Z-80, January 1988.

Texas Groundwater Protection Committee (TGWPC), 1991, Texas State Management Plan for Agricultural Chemicals in Ground Water; Agricultural Chemicals Subcommittee, June 1991.

_____, 1993a, Activities of the Texas Groundwater Protection Committee, Report to the 73rd Legislature; Texas Water Commission Report R 93-01, January 1993.

_____, 1993b, Joint Groundwater Monitoring and Contamination Report - 1992; Texas Natural Resource Conservation Commission Report SFR-1, November 1993.

_____, 1994a, Joint Groundwater Monitoring and Contamination Report - 1993; Texas Natural Resource Conservation Commission Report SFR-6, May 1994.

_____, 1994b, Texas Groundwater Protection Committee Educational Brochure; Texas Natural Resource Conservation Commission General Information Brochure GI-88, November 1994.

_____, 1994c, Final Draft - Texas State Management Plan for Agricultural Chemicals in Ground Water Educational Brochure; October 1994.

U.S. Environmental Protection Agency (USEPA), 1991, Pesticides and Ground Water Strategy (USEPA), EPA Publication 21T-1022, October 1991.

_____, Draft Guidance for Pesticides and Ground Water State Management Plans (USEPA, EPA 735-B-93-005a, December 1993).

APPENDIX I

COMMITTEE RULES

TEXAS GROUNDWATER PROTECTION COMMITTEE

Chapter 601

Subchapter A
General Provisions Relating to
Public Files and Joint Report
§§601.1-601.5

These sections are promulgated under the authority of Texas Water Code §26.406, which authorizes the Texas Groundwater Protection Committee to adopt any rules necessary to carry out its powers and duties under Chapter 26 of the Water Code and to establish and approve general policy of the committee.

§601.1. Purposes of Rules. The purpose of these sections is to implement duties and responsibilities assigned to the committee under Texas Water Code §26.406 relating to the maintenance by certain state agencies of public files containing documented cases of ground water contamination and the publication by the committee, in conjunction with the commission, of annual ground water monitoring and contamination reports and to establish general policies of the committee to guide such implementation.

§601.2. Applicability. These rules specifically apply to each state agency (*) having responsibilities related to the protection of ground water, and include the Texas Water Commission, the Texas Water Well Drillers Board, the Texas Department of Health, the Department of Agriculture, the Railroad Commission of Texas, and the State Soil and Water Conservation Board.

§601.3. Definitions. The following words and terms, when used in this chapter, shall have the following meanings unless the context clearly indicates otherwise:
Act--House Bill 1458 (71st Regular Session) codified as §§26.401-407 Texas Water Code.
Commission--Texas Water Commission
Committee--Texas Ground Water Protection Committee
Enforcement Action--Any action of the agencies, identified in §_.2 of this chapter, which accomplishes or requires the, identification, documentation, monitoring, assessing, or remediation of ground water contamination.
Ground Water--Water below the land surface in a zone of saturation.
Ground Water Contamination--The detrimental alteration of the naturally occurring physical, thermal, chemical, or biological quality of ground water. Further, ground water contamination, for purposes of inclusion of cases in the public files and the joint ground water monitoring and contamination report, shall be limited to contamination reasonably suspected of having been caused by activities or by entities under the jurisdiction of the agencies identified in §601.2 of this chapter, except in the case of an underground source of drinking water granted an aquifer exemption by the commission with concurrence from the U.S. Environmental Protection Agency in accordance with 40 VKD Parts 144, 145, and 146 and 31 TAC Chapter 331; and affecting ground water which contains a concentration of:

(a). less than or equal to 10,000 milligrams per liter (mg/L) of dissolved solids, or

(b). greater than 10,000 mg/L if it is:

(i). currently extracted for beneficial use such as domestic, industrial, or agricultural purposes, or

(ii). hydrologically connected with and with the potential for contaminant movement to a surface water body or another zone of ground water which has a concentration of less than or equal to 10,000 mg/L of dissolved solids.

§601.4. Public File.

(a). Subject to the limitations provided by the act and the Open Records Act, Texas Civil Statutes, Article 6252-17a, information collected, assembled, or maintained by the committee and the agencies subject to the act is public record open to inspection and copying during regular business hours.

(b). Each agency shall maintain a public file of all documented cases of ground water contamination that are reasonably suspected of having been caused by activities regulated by the agency.

§601.5. Joint Ground Water Monitoring and Contamination Report. In conjunction with the commission, the committee shall publish not later than April 1 of each year a joint ground water monitoring and contamination report covering the activities and findings of the committee made during the previous calendar year. The report must:

(1) Describe the current status of ground water monitoring programs conducted by or required by each agency at regulated facilities or in connection with regulated activities.

(2) Contain a description of each case of ground water contamination documented during the previous calendar year and of each case of ground water contamination documented during previous years for which enforcement action was incomplete at the time of issuance of the preceding report.

(3) Indicate the status of enforcement action for each case of ground water contamination that is included in the report.

* Subsequent legislation addressing the reorganization of state agencies has since redefined the agencies which have responsibilities related to the protection of ground water. Senate Bill 2 (72nd Texas Legislature, 1991) amended Chapter 5, Section 5.001 of the Texas Water Code. Senate Bill 2 mandated that certain divisions of the Texas Department of Health with regulatory authority over water and waste, and the Texas Water Well Drillers Board be consolidated within the Texas Water Commission effective March 1, and September 1, 1992, respectively. In addition, Senate Bill 2 combined the Texas Water Commission and the Texas Air Control Board and named the new agency the Texas Natural Resource Conservation Commission (TNRCC) effective September 1, 1993. Senate Bill 469 of the 73rd Texas Legislature, 1993, amended Section 26.403 of the Texas Water Code to extend Committee membership to the Texas

Agricultural Experiment Station, the Bureau of Economic Geology of the University of Texas at Austin, and the Texas Alliance of Groundwater Districts.

The agencies which are currently represented on the Committee and have the primary responsibilities related to the protection of ground water include the following: Texas Natural Resource Conservation Commission, Texas Water Development Board, Railroad Commission of Texas, Texas Department of Health, Texas Department of Agriculture, Texas State Soil and Water Conservation Board, Texas Alliance of Groundwater Districts, Texas Agricultural Experiment Station, and the Bureau of Economic Geology.

APPENDIX II

COMMITTEE MEMBERSHIP

TEXAS GROUNDWATER PROTECTION COMMITTEE

Members

Chairman

Dan Pearson, Executive Director
Texas Natural Resource Conservation Commission
P.O. Box 13087
Building F, Room 4211
Austin, Texas 78711-3087
Ph. # (512) 239-3900 FAX # (512) 239-3939

Designated Chairman
Mary L. Ambrose
Water Policy and Regulations Division
Texas Natural Resource Conservation Commission
Building F, Room 5103
Ph. # (512) 239-4813 FAX # (512) 239-6166

Vice Chairman

Craig D. Pedersen, Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231
Ph. # (512) 463-7850 FAX # (512) 475-2053

Designated Vice Chairman
Phil Nordstrom
Ph. # (512) 445-1434 FAX # (512) 445-1488

Walter H. Washington, Jr., Executive Director
Railroad Commission of Texas
P.O. Drawer 12967
Austin, Texas 78711-2967
Ph. # (512) 463-7274 FAX # (512) 463-7161

Designated Representative
Richard Ginn
Oil and Gas Division
Ph. # (512) 463-6796 FAX (512) 463-6780

Members - Cont.

David R. Smith, MD
Commissioner of Health
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756
Ph. # (512) 458-7375 FAX # (512) 458-7477

Designated Representative
Charles Maddox
Chief, Bureau of Environmental Health
Texas Department of Health
1100 W. 49th Street
Austin, Texas 78756
Ph. # (512) 834-6640 FAX (512) 834-6707

Barry McBee
Deputy Commissioner
Texas Department of Agriculture
P.O. Box 12847
Austin, Texas 78711
Ph. # (512) 463-7567 FAX # (512) 463-1104

Designated Alternate
Steve Bearden, Assistant Commissioner
Pesticide Programs
Ph. # (512) 463-1093 FAX # (512) 475-1618

Robert G. Buckley
Executive Director
Texas State Soil and Water Conservation Board
P.O. Box 658
Temple, Texas 76503

Designated Representative
James Moore
Ph. # (817) 773-2250 FAX # (817) 773-3311

Members - Cont.

Allan Lange, President
Texas Alliance of Groundwater Districts
P.O. Box 67
Vancourt, Texas 76955
Ph. # (915) 469-3988

Designated Alternate
Bill E. Couch, General Manager
Barton Springs/Edwards Aquifer Conservation District
1124A Regal Row
Austin, Texas 78748
Ph. # (512) 282-8441 FAX # (512) 282-7016

Edward A Hiler, Vice Chancellor and Dean
Agriculture and Life Sciences
Director, **Texas Agricultural Experiment Station**
The Texas A&M University System
College Station, Texas 77843-2147
Ph. # (409) 845-8484

Designated Representative
Dr. Wayne R. Jordan, Director
Texas Water Resources Institute
Ph # (409) 845-1851 FAX # (409) 845-8554

Dr. Noel Tyler, Director
Bureau of Economic Geology
The University of Texas at Austin
University Station, Box X
Austin, Texas 78713-7508
Ph. # (512) 471-1534 or 471-7721 FAX # (512) 471-0140

Designated Representative
Alan Dutton, Ph.D.
Bureau of Economic Geology
University of Texas at Austin
University Station, Box X
Austin, Texas 78713-7508
Ph. # (512) 471-1534 FAX # (512) 471-0140

APPENDIX III

AGENCY CONTACTS

AGENCY CONTACTS

The following is a list of agency staff to contact for further information:

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Petroleum Storage Tanks Division	Tom Lewis (512) 239-2235
Industrial and Hazardous Waste Division	David Ruckman (512) 239-2548
Pollution Cleanup Division	Gregory Tipple (512) 239-2465
Municipal Solid Waste Division	Ada Lichaa (512) 239-6728
Water Planning and Assessment Division	Cary Betz (512) 239-4506
Watershed Management Division	Karen Dailey (512) 239-4466
Environmental Training Division (Water Well Drillers Team)	Steve Wiley (512) 239-0537
Water Utilities Division	Tony Bennet (512) 239-6020
Water Policy Division	Mary Ambrose (512) 239-4813
Field Operations Division	Jeffie Barbee (512) 239-6308

TEXAS DEPARTMENT OF HEALTH

Charles Meyer
(512) 834-6688

TEXAS DEPARTMENT OF AGRICULTURE

Steve Beardon
(512) 463-7476

RAILROAD COMMISSION OF TEXAS	
Surface Mining and Reclamation Division	Sergio Garza (512) 463-6900
Oil and Gas Division	Richard Ginn (512) 463-6796
TEXAS STATE SOIL AND WATER CONSERVATION BOARD	James Moore (817) 773-2250
TEXAS WATER DEVELOPMENT BOARD	Phil Nordstrom (512) 445-1434
BUREAU OF ECONOMIC GEOLOGY **THE UNIVERSITY OF TEXAS AT AUSTIN**	Alan Dutton (512) 471-1534
THE TEXAS AGRICULTURE EXPERIMENT STATION	Dr. Wayne Jordan (409) 845-1851
TEXAS ALLIANCE OF GROUNDWATER DISTRICTS	Lee Arrington (806) 637-7467

APPENDIX IV

UNDERGROUND WATER CONSERVATION DISTRICTS

UNDERGROUND WATER CONSERVATION DISTRICTS

Mr. Oren Williams, President
Anderson County Underground Water Conservation District
Route 3, Box 3885
Palestine, Texas 75801
Phone No. (903) 729-6375

Mr. Bill E. Couch, Manager
Barton Springs/Edwards Aquifer Conservation District
1124-A Regal Row
Austin, Texas 78748
Phone No. (512) 282-8441
(Member - Texas Alliance of Groundwater Districts)

Mr. Eph Cummings, Manager
Coke County Underground Water Conservation District
P.O. Box 1110
Robert Lee, Texas 76945
Phone No. (915) 453-2232
(Member - Texas Alliance of Groundwater Districts)

Mr. Neil Davis, Manager
Collingsworth County Underground Water Conservation District
802 Ninth Street
Wellington, Texas 79095
Phone No. (806) 447-5341

Mr. Cameron Wiley
Comal County Underground Water Conservation District
29298 Wiley Road
Bulverda, Texas 78163
(Pending Confirmation)

Mr. Glen Olson, Manager
Dallam County Underground Water Conservation District No. 1
P.O. Box 103
Texline, Texas 79087
Phone No. (806) 362-4673
(Member - Texas Alliance of Groundwater Districts)

Mr. Rick Illgner, Manager
Edwards Underground Water District
P.O. Box 1580
San Antonio, Texas 78212
Phone No. (512) 222-2204
(Member - Texas Alliance of Groundwater Districts)

Mr. Dennis Clark, Manager
Emerald Underground Water Conservation District
P.O. Box 1458
Ozona, Texas 76943
Phone No. (915) 392-5156
(Member - Texas Alliance of Groundwater Districts)

Mr. Jim T. Hester, Manager
Evergreen Underground Water Conservation District
P.O. Box 155
Jourdanton, Texas 78026
Phone No. (210) 769-3740
(Parliamentarian - Texas Alliance of Groundwater Districts)

Mr. Russell C. Jones, Chairman
Fort Bend Subsidence District
P.O. Box 427
611 Jackson Street
Richmond, Texas 77469
Phone No. (713) 342-3273

Mr. Dale Henry, Chairman
Fox Crossing Water District
P.O. Box 157
Mullin, Texas 79864
Phone No. (915) 985-3576

Mr. Rick Harston, Manager
Glasscock County Underground Water Conservation District
P.O. Box 208
Garden City, Texas 79739
Phone No. (915) 354-2430
(Member - Texas Alliance of Groundwater Districts)

Mr. David Thiede
Gonzales Underground Water Conservation District
P.O. Box 922
Gonzales, Texas 78629
Phone No. (210) 437-2830
(Pending Confirmation)

Mr. Ronald J. Neighbors, General Manager
Harris-Galveston Coastal Subsidence District
1660 West Bay Area Boulevard
Friendswood, Texas 77546
Phone No. (713) 486-1105

Mr. David Stubblefield
Haskell/Knox Underground Water Conservation District
P.O. Box 905
Haskell, Texas 79521
(Pending Confirmation)

Mr. John Wendele, Manager
Headwaters Underground Water Conservation District
213 W. Waters Street
Kerrville, Texas 78028
Phone No. (210) 896-4110

Mr. Stan Reinhard, Manager
Hickory Underground Water Conservation District No. 1
P.O. Box 1214
Brady, Texas 76825
Phone No. (915) 597-2785
(Member - Texas Alliance of Groundwater Districts)

Mr. A. Wayne Wyatt, General Manager
High Plains Underground Water Conservation District No. 1
2930 Avenue Q
Lubbock, Texas 79405
Phone No. (806) 762-0181

Mr. Paul Tybor, Manager
Hill Country Underground Water Conservation District
508 S. Washington
Fredericksburg, Texas 78624
Phone No. (512) 997-4472
(Member - Texas Alliance of Groundwater Districts)

Mr. Gene Lutrick, President
Hudspeth County Underground Water Conservation District No. 1
P.O. Box 24
Dell City, Texas 79837
Phone No. (915) 964-2424

Mr. Scott Holland, General Manager
Irion County Underground Water Conservation District
P.O. Box 10
Mertzon, Texas 76941
Phone No. (915) 835-2015
(Member - Texas Alliance of Groundwater Districts)

Mr. Albert Miller, Chairman
Jeff Davis Underground Water Conservation District
P.O. Box 1203
Fort Davis, Texas 79734
Phone No. (915) 467-2971
(Non Voting Member - Texas Alliance of Groundwater Districts)

Mr. Allan Lange, Manager
Lipan-Kickapoo Water Conservation District
P.O. Box 67
Vancourt, Texas 76955
Phone No. (915) 469-3988
(President - Texas Alliance of Groundwater Districts)

Mr. Lonnie Stewart, Manager
Live Oak Underground Water Conservation District
P.O. Box 980
George West, Texas 78022
Phone No. (512) 449-1151
(Member - Texas Alliance of Groundwater Districts)

Ms. Luana Buckner, Manager
Medina County Underground Water Conservation District
1813 Avenue K Suite #105
Hondo, Texas 78861
Phone No. (210) 426-3162
(Member - Texas Alliance of Groundwater Districts)

Mr. Harvey Everheart, Manager
Mesa Underground Water Conservation District
P.O. Box 497
Lamesa, Texas 79331
Phone No. (806) 872-9205
(Member - Texas Alliance of Groundwater Districts)

Mr. Richard S. Bowers, Manager
North Plains Groundwater Conservation District No. 2
P.O. Box 795
Dumas, Texas 79029
Phone No. (806) 935-6401
(Member - Texas Alliance of Groundwater Districts)

Mr. C. E. Williams, Manager
Panhandle Ground Water Conservation District No. 3
P.O. Box 637
White Deer, Texas 79097
Phone No. (806) 883-2501
(Vice President - Texas Alliance of Groundwater Districts)

Mr. Mark Hoelscher, Manager
Permian Basin Underground Water Conservation District
Box 1314
Stanton, Texas 79782
Phone No. (915) 756-2136
(Member - Texas Alliance of Groundwater Districts)

Ms. Cindy Cawley, Manager
Plateau Underground Water Conservation & Supply District
P.O. Box 324
Eldorado, Texas 76936
Phone No. (915) 853-2121
(Member - Texas Alliance of Groundwater Districts)

Mr. James A. Holt, Jr., President
Plum Creek Conservation District
P.O. Box 328
Lockhart, Texas 78644
Phone No. (512) 398-2383

Mr. Dick Baker
Presidio County Underground Water Conservation District
P.O. Box 628
Marfa, Texas 79813
(Pending Confirmation)

Mr. Mel Stayton
Real-Edwards Conservation and Reclamation District
P.O. Box 43
Barksdale, Texas 78828
Phone No. (512) 232-6303

Mr. Buddy Baldridge
Salt Fork Underground Water Conservation District
P.O. Box 6
Jayton, Texas 79528
Phone No. (806) 237-9125

Mr. Gary Walker, Manager
Sandy Land Underground Water Conservation District
P.O. Box 130
Plains, Texas 79365
Phone No. (806) 456-2155
(Member - Texas Alliance of Groundwater Districts)

Mr. Eugene Vinson, Manager
Santa Rita Underground Water Conservation District
P.O. Box 849
Big Lake, Texas 76932
Phone No. (915) 884-2893
(Member - Texas Alliance of Groundwater Districts)

The Honorable Norris Monroe
Saratoga Underground Water Conservation District
P.O. Box 231
Lampasas, Texas 76550
Phone No. (512) 556-8271

Mr. Lee Arrington, Manager
South Plains Underground Water Conservation District
P.O. Box 986
Brownfield, Texas 79316
Phone No. (806) 637-7467
(Secretary - Texas Alliance of Groundwater Districts)

Mr. Ray Buck, Manager
Springhills Water Management District
P.O. Box 771
Bandera, Texas 78003
Phone No. (210) 796-7260
(Member - Texas Alliance of Groundwater Districts)

Ms. Gerry Robertson, Manager
Sterling County Underground Water Conservation District
P.O. Box 359
Sterling City, Texas 76951
Phone No. (915) 378-2704
(Treasurer - Texas Alliance of Groundwater Districts)

Mr. Mike Smith, Manager
Sutton County Underground Water Conservation District
P.O. Box 707
Sonora, Texas 76950
Phone No. (915) 387-2369
(Member - Texas Alliance of Groundwater Districts)

Ms. Knoxie Johnson, Secretary
Uvalde County Underground Water Conservation District
P.O. Box 100
Knippa, Texas 78870
Phone No. (210) 278-2846
(Member - Texas Alliance of Groundwater Districts)