HEMPHILL COUNTY UNDERGROUND WATER CONSERVATION DISTRICT

CANADIAN, TEXAS

MANAGEMENT PLAN
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SECTION I
INTRODUCTION

A. DEFINITIONS

"Abandoned well or deteriorated well" shall mean a well or bore hole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water Well Driller’s Act, Texas Natural Resources Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, is presumed to be an abandoned or deteriorated well.

"Acceptable decline rate" is a percentage of the saturated thickness which may be removed from the groundwater reservoir annually and will encourage conservation and extend its longevity.

"Allowable decline" is an amount of water, expressed in acre feet. It is calculated by multiplying the net saturated thickness of the previous year by the acceptable decline rate set by the Board. It is assigned at the center of each section of land.

"Annual" shall mean recurring or done every year. The use within this document, unless otherwise stated, is based on the fiscal year of the District which is a twelve (12) month period from October 1 of one calendar year through September 30 of the following calendar year.

"Aquifer" shall mean a formation or group of saturated geologic formations capable of storing and yielding fresh water in usable quantities.

"Beneficial use" shall be any use which is advantageous and does not constitute waste.

"Board" shall mean the governing body of the District, which shall consist of five elected directors. Two directors were elected for two years and three directors were elected for four years. The terms of the directors elected for two years will increase to four years after the second election for these places. The number of directors has been set at five by the district’s enabling legislation.

"Chapter 35" refers to Sections 35.001 through 35.019 of the Texas Water Code, which authorize the Texas Natural Resource Conservation Commission (TNRCC) to designate groundwater management areas and create groundwater conservation districts. This Chapter also outlines the Priority Groundwater Management Area (PGMA) process. A reference to a specific section or subsection may be identified using the symbol "§" or using the abbreviation of "Sec."
"Chapter 36" refers to Sections 36.001 through 36.374 of the Texas Water Code, which authorize creation of groundwater conservation districts and outline the powers and duties of a groundwater conservation district. A reference to a specific section or subsection may be identified using the symbol "$\S$" or using the abbreviation of "Sec."

"Coliform bacteria" is bacteria that are used to indicate the presence of pathogens. Coliform bacteria may not be pathogens but usually are present when pathogens are present and are more resistant to environmental stresses than pathogens.

"District" shall mean the Hemphill County Underground Water Conservation District, maintaining its principal office in Hemphill County, Canadian, Texas. Where applications, reports and other papers are required to be filed with or sent to "the District", this means the District's headquarters at 5th and Main, Canadian, Hemphill County, Texas 79014, Phone: 806-323-6521, The District shall also be known as "Hemphill County Water District", "Hemphill County Water Conservation District" and the acronym "HCWD" shall also refer to the Hemphill County Underground Water Conservation District.

"Each year" shall mean recurring or done every calendar year.

"Groundwater" shall mean water percolating below the surface of the earth.

"Groundwater reservoir" shall mean a specific subsurface water-bearing reservoir having ascertainable boundaries containing groundwater.

"Hydraulic conductivity" is a measurement of the capacity of a porous medium to transmit water. It is expressed as the volume of water at the kinematic viscosity that will move in a unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.

"Irrigation distribution system or irrigation system" shall mean a device or combination of devices having a hose, pipe or other conduit which connects directly to any water well through which water or a mixture of water and chemicals is drawn and applied to land. The term does not include any hand held-hose sprayer or other similar device which is constructed so that an interruption in water flow automatically prevents any backflow to the water source.

"Management plan" is the groundwater management plan required pursuant to Texas Water Code §36.1071.

"Monitoring well or observation well" shall mean an artificial excavation constructed to measure or monitor the quality or quantity or movement of substances, elements, chemicals, or fluids beneath the surface of the ground. The term shall not include any monitoring well which is used in conjunction with the production of oil, gas, or any other minerals.
"Natural resource" is a material source of wealth, such as timber or a mineral deposit, that occurs in a natural state. (The American Heritage Dictionary, Third Edition)

"Owner" shall mean and include any person or other entity, public or private, that has the right to produce water from the land either by ownership, contract, lease, easement or any other estate in the land or water.

"Person" shall mean any individual, partnership, firm or corporation.

"Pollution" shall mean the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, water in the District that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or which impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

"Porosity" is a measurement of the voids or openings in a medium. It may be expressed quantitatively as the ratio of the volume of openings to the total volume.

"Saturated thickness" is the vertical distance between the water table and the base of the groundwater reservoir, and the pores between the solid particles are filled with water.

"Specific yield" is the ratio of the volume of water that will drain under the influence of gravity to the total volume.

"Texas Water Code (TWC)" shall refer to the laws which govern the use and disposition of water in the state of Texas.

"Underground water" is used synonymous with groundwater.

"Waste" as used herein shall have the same meaning as defined by Chapter 36 of the Texas Water Code as now or hereafter amended as follows:

1. Withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock-raising purposes;

2. The flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;

3. Escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;
4. Pollution or harmful alteration of groundwater in a groundwater reservoir by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground;

5. Willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the Commission under Chapter 26;

6. Groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge; or

7. For water produced from an artesian well, "waste" has the meaning assigned by Section 11.205."

"Water" is used synonymous with groundwater and underground water.

"Water rights" shall mean a defined number of surface acres, within each section of land which a person has acquired the right to capture the groundwater from beneath, subject to the Rules of this District.

"Water well" shall mean any artificial excavation constructed for the purpose of exploring for or producing groundwater. The term, however, shall not include any test or blast holes in quarries or mines, or any well or excavation for the purpose of exploring for, or producing oil, gas, or any other minerals unless the holes are used to produce groundwater. The term shall not include any injection water source well regulated by the Railroad Commission of Texas.

"Well" shall mean a water well, injection well, recharge well, dewatering well, or monitoring well and is in compliance with the District Rules.

B. PURPOSE OF THE DISTRICT

Actions, procedures, performance, and avoidance needed to carry out the management plan of the District.

The purpose of the District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence within the defined boundary of the District. The purpose of the District will be achieved through rules, education programs, District-provided services, and through mutual cooperation of local, state, and federal agencies. The District will issue water well permits, collect groundwater information, perform water quality analyses, provide well system tests and other services. It is the belief of the District's residents and the Board of Directors that groundwater is
best managed locally through a groundwater conservation district. This belief is realized by the adoption and implementation of a management plan outlining the goals, methods, and procedures to be utilized in the management of the groundwater resources of the District. This management plan will provide a better understanding of the goals and objectives of the District by the residents and promote cooperation in its implementation.

This document has been developed in accordance with the requirements of Chapter 36 of the Texas Water Code, and the provisions of Texas Administrative Code Title 31, Chapter 356 Groundwater Management Plan Certification.

C. HISTORY AND STATUTES

The Texas State Legislature in 1949 authorized the creation of Underground Water Conservation Districts to perform certain prescribed duties, functions, and hold specific powers as set forth in Article 7880-3c, Texas Civil Statutes, changed to Chapter 52 of the Texas Water Code, currently Chapter 36 of the Texas Water Code.

In 1994 a committee appointed by the County commissioners reviewed the need for Hemphill County to either join an existing water district or to form a single county district. After investigating other districts and discussion within the county, the committee recommended that a single county district be formed. The following year legislation was passed to enable Hemphill County to form a district to be known as Hemphill County Underground Water Conservation District. In 1997 local voters confirmed the district, but no tax rate was approved because of an oversight on the ballot. In 1998 voters confirmed a maximum tax rate of .035 per $100 valuation. In the fall of 1999 the district will collect taxes and will have money to operate with. In the 1997 elections, five directors were elected. Bret Begert, David Isaacs, and Trey Webb were elected to four year terms. Lee Haygood and Mark Meek were elected to two year terms. The District endeavors to be aware of regulations of other local, state, and federal agencies which affect groundwater and acts as a buffer between these agencies and the residents of the District. It is the goal of the District to provide the best management of groundwater resources and make every effort to insure that an abundant supply of potable water will be available for many future generations.

In the District’s effort to fulfill its purpose, provisions contained in Chapter 36 of the Texas Water Code have been used as an outline for the development of rules, programs, policies, and activities. The District continues to remain aware of changes in the Water Code as they occur and if appropriate, will adopt rules and modify or update the rules or Management Plan.

D. THE GOVERNING BODY

The District is currently governed by a five-member elected Board of Directors. Each Director is
elected from a defined area within the District for a four-year term. The elections are held on the 
first Saturday in May each even-numbered year in accordance with Chapter 36 of the Texas Water 
Code and Texas Election Code. The Board elects officers after each director election and these 
officers serve for two-year terms. This Board develops and adopts the rules, programs and practices 
of the District. The Board hires the staff, sets the annual budget, and determines the tax rate needed 
to carry out the operations of the District.

E. ADMINISTRATIVE

It is the goal of the District that its activities be consistent with sound business practices; that the 
interest of the public shall always be considered in conducting District business, that impropriety or 
the appearance of impropriety shall be avoided to ensure and maintain public confidence in the 
District; and that the Board shall control and manage the affairs of the District lawfully, fairly, 
impartially, and in accordance with the stated purposes of the District.

The District plans to employ a secretary to carry out the administrative affairs of the District as 
directed by the District Board. The Board may employ additional staff to assist in these duties. The 
District Board is responsible for ensuring that the rules, regulations, policies, and procedures 
adopted by the Board are followed. The methodology by which the District will track its progress 
in achieving management goals is as follows:

Financial- Provide current year budget updates at least quarterly; monthly financial reports of all 
accounts; provide any information needed for the financial audit of the District and identify 
future needs for budget planning.

* Rules- Manage the implementation of the rules of the District in accordance with procedures set 
forth in the District Rules and/or Policies. Schedule requests for exceptions to the Rules for a 
hearing before the Board in accordance with proper procedure. Bring before the Board any problem 
with any of the activities of the District.

* Information- At each regular board meeting the Secretary will report on the activities of the 
District Board or its individual members and the Secretary and/or staff in carrying out their duties. 
These activities may include meetings and/or seminars attended, upcoming meetings and seminars, 
legislative activities, new program development, and updates on programs being developed.

* Personnel- Annually, the President of the Board will provide an evaluation of the district staff and 
make recommendations about personnel needs or adjustments needed to continue to meet the goals 
and objectives of the District.

(A list of the current Directors and Officers is included in Appendix A.)
SECTION II
PLANNING PERIOD

At the present time the Hemphill County Underground Water Conservation District is in the process of writing and adopting rules. The proposed rules and orders address the fundamental requirements: 1) A permit will be required before drilling a well capable of producing water in excess of 25,000 gallons per day. 2) Wells will be required to be separated based upon the size of the wells. 3) A completed driller's log and registration of well will be required to be filed with the District. 4) Procedures of compliance with the rules and hearings before the Board will be required. In addition the District has endeavored to address areas of concern such as pollution of the groundwater and high volume wells which have a negative impact on water levels in specific areas.

The purpose of this District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions within the defined boundary of the District. To carry out this purpose, these proposed rules and regulations will be passed, adopted and will be enforced to: minimize as far as practicable: draw down of the water table, depletion of the groundwater reservoirs and aquifers, interfere between wells, reduction of artesian pressure; and to prevent waste of groundwater, pollution or harmful alteration of the character of the groundwater resource, and to manage the groundwater effectivity based upon ecological and socio-economic systems unique to the area of the Hemphill County Underground Water Conservation District.

The Board will hold public hearings in November, 1999 and plans to adopt the rules by the end of 1999.

Senate Bill 1, adopted by the 75th Texas Legislature and became effective September 1, 1997, is a massive piece of legislation which directly impacted groundwater conservation districts in many ways.

The Act is significant in that it states the following:
1. A new Section 36.0015 was added to the Texas Water Code reading in part as follows: "Groundwater conservation districts created as provided by this chapter are the state's preferred method of groundwater management."
2. The legislation did not change the private ownership or "right of capture" law under which Texas groundwater has historically been governed since the Texas Supreme Court handed down its opinion in East v. H&TC Ry. Co. in 1904.

It is the intent of the District to write a management plan which shall guided the district for the next 10 years and beyond. The management plan is intended to remain unchanged indefinitely but the District will modify, change and/or amend the plan as needed in accordance with Chapter 36, §36.1072(e), Texas Water Code. The Board may review the management plan annually and must review and re-adopt the plan, with or without revisions, at least once every five years. For the purpose of 31 TAC §356.5(a) this management plan uses a planning period of at least ten (10) years.
SECTION III
GROUNDWATER SUPPLY

A. GENERAL GEOLOGY, STRATIGRAPHY, AND HYDROLOGY

The Ogallala Formation in Texas is the southernmost extension of the major water-bearing unit underlying the physiographic province of North America. It was named by Darton (1898) for the town of Ogallala, Nebraska, near the type locality.

Following the Laramide revolution in which the southern Rocky Mountains were uplifted and the Cretaceous seas retreated, rivers flowing east and southeastward cut valleys into the pre-Ogallala surface. The deposition of the Ogallala Formation began in late Miocene to early Pliocene age and continued until late Pliocene time when the climate became more and up warping of the High Plains area caused deposition to cease and erosion to begin. During Pliocene time, large quantities of eroded material from the Rocky Mountain region were transported by wind and water southeastward and deposited on the then existing surface of primarily Triassic and Permian age rocks. In certain areas, the depositional surface was composed of Cretaceous and Jurassic age sediments. The low valley areas were usually filled first by coarser materials such as gravels and coarse sand. As the valleys and basins filled, sediments overflowed to form coalescing aprons fed by braided streams that spread across a generally level plain. Eventually, the entire area was covered by Ogallala sediments until a maximum thickness of almost 900 feet (274 in) was attained in southwestern Ochiltree County (Muller and Price, 1979; Bell and Morrison, 1978).

Throughout the time when the Ogallala sediments were being deposited, the Southern Rocky Mountains remained tectonically active, providing source material for the Ogallala Formation (Knowles and others 1984).

The Ogallala Formation unconformably overlies Permian, Triassic, Jurassic, and Cretaceous strata and consists primarily of heterogeneous sequences of coarse-grained sand and gravel in the lower part grading upward into fine clay, silt, and sand. Gravel commonly occurs in layers in the basal section and ranges in size from boulders to pea size. In places, the Ogallala Formation contains some quartz gravel and caliche with pebbles and cobbles of quartz, quartzite, and chert being common. In the Northern High Plains the formation has been divided into three subdivisions: the Valentine, Ash Hollow, and Kimball, based on fossil vertebrates and flora. The subdivisions, often referred to as floral zones, are less distinguishable in the Southern High Plains.

The sands are generally tan, yellow, or reddish brown, medium to coarse-grained, moderately to well sorted, unconsolidated quartz grains, interbedded with thin layers of clay and occasionally sandstone. The sand is generally poorly consolidated to unconsolidated, although local cementation by calcium carbonate and silica occurs. Grain size and condition of sorting is an indication of the high energy involved in the depositional process of these sediments. As expected, sand grain and gravel size decreases and sorting improves eastward.
The gravel is usually associated with sand, silt, and clay and is occasionally cemented. Quartzite is generally the predominant rock type in the gravel, although a high percentage of limestone boulders and cobbles occur in the southern area along with weathered Cretaceous invertebrate fossils. The occurrence of limestone gravel and Cretaceous fossils indicate that a local source possibly contributed to the Ogallala sediments in the southern third of the area.

Near the surface of much of the Texas High Plains are layers of resistant caliche known as "caprock". Caliche occurs in both Ogallala and post-Ogallala sediments and is formed by the leaching of carbonate and silica from surface soils and the redeposition of the dissolved mineral layers below the surface. Although caliche layers occur primarily near the surface, deeper zones of caliche are also present. These deeper layers represent older soil horizons. The caliche ranges from crumbly to very hard and is almost impervious although secondary porosity has been observed in many samples. Previously, the Ogallala was described as fluvial sediments deposited as a series of coalescing alluvial fans or plains with only minor amounts of eolian sediments (Seni, 1980). However, Reeves (1972), Hawley and others (1976), and Hawley (1984) recognize the Ogallala as predominately eolian sediments in parts of Texas and southeastern New Mexico. Outcrop and core studies by Gustavson and Winkler (1987) indicate the Ogallala in Texas and New Mexico consists of alluvial sediments that partly fill paleovalleys and widespread thick eolian sediments capping paleovalleypans and most fluvial sections. Calcic paleosols and fossil evidence suggest a depositional environment in a mostly semiarid to subhumid climate (Winkler, 1990; Scholliast 1990; and Thomasson, 1990).

Water-bearing areas of the Ogallala Formation are hydraulically connected except where the Canadian River has partially or totally eroded through the formation to separate the North and South Plains. Lower Cretaceous units form two separate subcrops within the Texas High Plains, the Edwards-Trinity (High Plains) and the Edwards-Trinity (Plat). Underlying these three aquifers and much of the Ogallala are Triassic (Dockum aquifer) and Permian formations.

Thickness of the Ogallala Formation is primarily controlled by the morphology of the eroded pre-Ogallala surface. The greatest thickness occurs where sediments have filled previously eroded drainage channels. These channels generally trend east or southeast. Other areas of large Ogallala thickness occur in the northeast quadrant of the Texas High Plains where sediments have filled collapsed basins formed by dissolution of Permian evaporites.

The saturated thickness of the Ogallala Formation ranges from a few feet to more than 525 feet (160 m). In general, the areas of greatest saturated thickness occur in the North Plains. In the South Plains, between Lubbock and Midland, the saturated zone varies from less than 50 feet (15 m) to 200 feet (61 m). Depth to water below the land surface can range from almost 400 feet (122 m) in parts of the North Plains to between 100 to 200 feet (30 to 61 m) throughout much of the South Plains. Ogallala groundwater is generally fresh, containing between 300 and 1,000 milligrams per liter (mg/l) of dissolved solids of which calcium, magnesium, and bicarbonate are the principal constituents. Some hydraulic continuity occurs between the Ogallala Formation and the underlying Cretaceous, Triassic, and Permian formations in many areas of the High Plains. For the purposes of this document, the Ogallala Aquifer will be considered to consist of the saturated sediments of the Ogallala Formation and any underlying, potable water-bearing units hydraulically connected with it.
Post-Ogallala Depositions

Post-Ogallala sediments consist of windblown sand and silt, alluvium, and playa lake deposits. Windblown sands occupy the largest surface area of the High Plains of Texas and are of both Pleistocene and Recent (Holocene) age. They are primarily fine-grained to silty, sometimes calcareous, and are derived from lacustrine, fluvial, and eolian deposits. These sands and soils form sheet or cover sand, dunes, and dune ridges with thicknesses generally ranging from 0 to 10 feet (0 to 3 m).

Alluvium is present as fluvial flood plain and terraced sediments along the more active streams and rivers. The deposits consist of poorly sorted, often cross-bedded, gravel sand, and silt.

Lacustrine deposits, consisting primarily of clay and silt, line the bottom of the many playa lakes on the High Plains. The sediments are virtually impermeable, thus restricting natural recharge to the underlying formation.

(Selected references are included in Appendix B)

B. CURRENT VOLUME IN STORAGE:

Due to the fact that the HCWD has not done any surveys to determine the amount of groundwater in the District, estimates are taken from the Texas Water Plan 1997 provided by the Texas Water Development Board. The estimate of the existing total useable amount of groundwater in the District is 16.74 million ac.ft.

C. ESTIMATED PROJECTED WATER SUPPLY

<table>
<thead>
<tr>
<th>YEAR</th>
<th>WATER SUPPLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3,700 ac.ft.</td>
</tr>
<tr>
<td>2010</td>
<td>3,614 ac.ft.</td>
</tr>
<tr>
<td>2020</td>
<td>3,553 ac.ft.</td>
</tr>
<tr>
<td>2030</td>
<td>3,559 ac.ft.</td>
</tr>
<tr>
<td>2040</td>
<td>3,481 ac.ft.</td>
</tr>
<tr>
<td>2050</td>
<td>3,359 ac.ft.</td>
</tr>
</tbody>
</table>

D. ESTIMATED ANNUAL DECLINE (USAGE)

According to estimates provided by the Texas Water Plan 1997, during the years 1991 to 1995 the average annual usage of groundwater being used in the District is 3,358 ac.ft.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>WATER USE/YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>4,057 ac.ft.</td>
</tr>
<tr>
<td>1992</td>
<td>4,401 ac.ft.</td>
</tr>
<tr>
<td>1992</td>
<td>2,533 ac.ft.</td>
</tr>
<tr>
<td>1993</td>
<td>3,117 ac.ft.</td>
</tr>
<tr>
<td>1994</td>
<td>2,689 ac.ft.</td>
</tr>
</tbody>
</table>
E. PROJECTED DECLINE (USE)

Based on estimates from the Texas Water Plan 1997 the projected water demand within the District should peak in the year 2000 at 3483 ac.ft. per year. Estimates project a slight decrease in usage. The water usage in 2050 is estimated to be 2,774 ac.ft.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>WATER USE/YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3,483 ac.ft.</td>
</tr>
<tr>
<td>2010</td>
<td>3,358 ac.ft.</td>
</tr>
<tr>
<td>2020</td>
<td>3,203 ac.ft.</td>
</tr>
<tr>
<td>2030</td>
<td>3,049 ac.ft.</td>
</tr>
<tr>
<td>2040</td>
<td>2,902 ac.ft.</td>
</tr>
<tr>
<td>2050</td>
<td>2,744 ac.ft.</td>
</tr>
</tbody>
</table>

F. RECHARGE

Report LP-173, Evaluating the Ground-Water Resources of the High Plains of Texas Final Report Volume I states:
"Recharge to the High Plains aquifer occurs principally by infiltration of precipitation on the outcrop. Only a small percentage of water from precipitation actually reaches the water table due to a combination of small annual precipitation, high evaporation rate, and low infiltration rate."

It is estimated that the annual amount of recharge to the groundwater resources within the District is 9,460 ac.ft.

SECTION IV
COLLECTION OF DATA

The District understands the importance of data collection. Bench marks must be established so that future data can be compared and analyzed. Data collection may involve applications for a water well permit, answering questions concerning quantity or quality of water from someone within the District, or simply the function of various District programs.

A. WATER QUANTITY

The estimated usable quantity of groundwater within the District is 16.74 million acre feet. This information is provided by the Texas Water Development Board in the Texas Water Plan 1997. The following subsections describe the data collection programs which the District plans to use to generate reports of specific water quantity information.

Water Well Permit Application:
The proposed Rules require an application be made to the District for a water well permit prior to
drilling a well capable of producing groundwater in excess of 25,000 gallons per day. The first step in this process is to provide certain basic data to the District. The application requires the owner’s name, address, legal description of the land, location of the well on the property, estimated amount of production, proposed use, distance from other wells on the property as well as adjoining property, the name of the driller, and the date drilling is planned. The staff will assist in determining some of this information as well as determining if the proposed location will meet the Rules of the District. After an application is completed and the deposit has been paid, the staff will then verify the information and schedule it for review by the Board for consideration. If at anytime during this process a discrepancy is found which would invalidate the application, the applicant is notified and a correction may be made. After Board approval, the permit is then placed in a pending file until the well log and registration form is received from the applicant or driller. Well drilling may be started as soon as the application is completed by the applicant; however, until it has been reviewed and approved by the Board, drilling is at the risk of the applicant. A water well permit is in effect for 4 months from the time the application is made. An applicant may apply for one extension for an additional 4 months.

**Management Goal:** Provide prompt and timely processing of all applications of water well permits to provide for efficient use of water.

**Management Objective:** Annually complete administrative review process of all water well permits, including review and schedule for Board consideration within 60 days of application date.

**Performance Standard:** Annually, determine number of permit applications considered by the Board within 60 days of application dates.

**WATER WELL IDENTIFICATION:**
The District plans to locate and map every well within the district boundaries. Starting in year 2000 the District shall divide the district into 5 divisions and set a goal of locating the wells in each division during a one year time frame. The goal would be to be finished by the end of 2006. A database of all wells including domestic wells, irrigation wells, gas and oil field water wells, city wells, and industrial wells will be maintained. Annually, drilling permits and a list of landowners would be checked to ensure that new wells have been inventoried.

**Well Logs and Registration:**
The proposed Rules require that the District be provided a well drilling log and completion report within 30 days after completion of the wells. In some cases a well may be completed but not equipped. In this case, the available well completion information to be submitted to the District will remain incomplete until the pump has been installed and that information provided to the District. The deposit is not returned until required information has been received by the District. The purpose of well logging and registration is to establish and maintain a well completion information database of permitted well completions.

**Water Level Observation Wells:**
The inability of the HCWD to collect taxes has greatly hindered our ability to put any programs in place. However, our plan is to have a water level observation program in Hemphill County. Wells which are representative of the district shall be identified and checked for water level on an annual
basis. The goal of the program would be to establish and maintain the most accurate and representative database of water elevation information possible within the equipment, staff and financial capabilities of the District. Annual field visits to each observation well of the District to obtain a static water level measurement. These measurements would be used to review static water level tabulations for accuracy and to enter tabulations into the water level database.

B. USE OF WATER QUANTITY DATA

Well permitting, registration, a water level observation program, and a water well identification program will provide the District with baseline information. This information will be useful in the compilation of water depletion on tax returns, monitoring and preparing maps of the saturated thickness of the aquifer, preparing water table decline maps, and determining value attributed to water in land sales. Benefits of this information would include water management and conservation planning and identification of areas which have abnormal depletion rates.

Information Reports:

The data generated from the programs outlined above will provide the District with the capability to develop various informational reports in regard to the quantity of water within the District. These reports will be available to the general public upon request in addition to summary reports published in a district newsletter. Information regarding the number of well permit applications and the number of new wells completed for the previous quarter will be published.

Responding to Other Requests:

The District will work with prospective landowners and lending agencies seeking information on water conditions for tentative loan and property evaluations. Any requests received from individuals and organizations within the District as well as outside the District and Texas in regard to the groundwater supply, depletion, saturated thickness, expected yield and projected life of the aquifer will be answered.

C. WATER QUALITY

One of the areas of concern in Hemphill County is water quality. Extensive oil and natural gas development, confined feeding operations, and shallow water tables which recharge into the deeper aquifer cause concern that the integrity of the aquifer has the potential to be compromised. There are several salt water disposal wells located in the county and one confined feeding operation is in the flood plain of the Canadian River which is a recharge area for the Ogallala Aquifer.

D. COLLECTION OF WATER QUALITY DATA

The District plans to set up and operate a water quality laboratory. Water quality laboratory services will be available to all residents of the District. The first step in identifying quality problems is to begin gathering information to serve as a benchmark for comparison in the future.
Water Quality Observation Wells:
The District’s water quality program will be carried out in conjunction with a well identification program and a water level observation program. The water quality database will contain the results from the District analyses as well as analyses which have been done by the Texas Water Development Board and/or outside commercial labs. Included in the annual water well quality study will be a sub study of selected oil field water well bores which will be tested for common oil field chemicals and compounds which may be leaching into the underground water strata. The District plans to maintain a water quality observation well network to provide adequate information to determine any change in the water quality within the District in time to seek remedial or corrective action. The District would collect, analyze, verify, and enter results in the District water quality database from the water quality observation wells annually.

Requested and Random Analysis:
Requested and random samples and spot checks in areas where possible deleterious material may have an adverse effect on water quality conditions will be analyzed and the information retained in a database for future reference. The District realizes the importance of proper saltwater disposal and transport out of the oil field areas of the District and plans to work closely with the Texas Railroad Commission to monitor these activities.

The District will aid the citizens of Hemphill County in maintaining a safe supply of domestic water. Information and assistance will be available to help collect and transport water to a lab for analysis. It is the District’s charge to protect the quality of the groundwater. Monitoring will be on a continuing basis through the water quality observation program. If anyone within the district suspects contaminated water and contacts the District, staff will provide assistance locating the source and offer suggestions for remedial action.

SECTION V
MANAGEMENT AND PROTECTION
OF THE GROUNDWATER SUPPLY

A. RULES

The Powers and Duties of Chapter 36 (Subchapter D) and the proposed Rules of the District provide an outline for many of the items contained within this Management Plan. As changes are made in the Water Code and other state or federal laws that relate to a district as defined in §35.002 and in respect to the Texas Water Code, §36.052, the District will update its rules, policies, procedures and management plan accordingly.

B. GROUNDWATER QUALITY PROTECTION MEASURES:

In evaluating the Hemphill County Water District, the Board believes that the most pressing concerns are in the District are water quality issues. Many residents of the District feel that the ultimate use of
the District's water will be for export outside the boundaries of the District. The general agreement is that if someone wants to buy "my water" it had better not be polluted. The following are some of the areas of concern.

**Oil Field Activities:** There has been oil field activity in Hemphill County for at least 70 years. There are salt water disposal wells, treatment plants, abandoned slush pits, abandoned unpluged wells and who knows what else scattered over the entire county. The District proposes to work closely with the landowners to identify problems and potential problems and to cooperate with the Texas Railroad Commission to properly evaluate and solve any contamination.

**Improper Storage, Transportation, and Disposal of Radioactive, Toxic and Hazardous Substances:**
In an effort to protect the groundwater, the District has proposed a Rule to address this issue (Rule 13).

**Concentrated Animal Feeding Operations:**
Since the very beginning of Hemphill County Water District, the Directors have acquired an increased concern in regard to Concentrated Animal Feeding Operations (CAFOs) which have been developed or are proposed for development in this district or in adjoining districts. The District does not have any official duty in regard to the permitting of the Concentrated Animal Feeding Operations (CAFOs) permits issued by the Texas Natural Resources Conservation Commission (TNRCC). The District receives notice of permit applications and reviews them to determine if the location of the facility could impact groundwater. The details of the permit application may be discussed with the engineer for the project. If it is determined that the facility is likely to impact groundwater, the District would at that time enter an objection to the permit and recommend additional protection measures to be included in the construction of the facility. If the protection measures could not or would not be included to protect the groundwater, the District would oppose the permit application for that particular location. Since pollution of groundwater takes place long after the surface damage is done the district plans to closely monitor wells at existing CAFOs and possibly do follow up with core drilling at specific sites.

**C. WASTE OF WATER**

Hemphill County Water District is blessed with abundant ground water, but currently there is very little development of the water resources. Most of the irrigation in the District is with sprinklers, most of which have LEPA nozzles. This eliminates tailwater problems. Irrigation in the District is not concentrated in any one area so problems with over production of the wells is not a problem. In summary, irrigation pumpage for agricultural purposes poses no short term nor long term problems within the District.

Waste as defined by Chapter 36 of the Texas Water Code to mean "Pollution or harmful alteration of
groundwater in a groundwater reservoir by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground." Is the biggest concern of the Hemphill County Water District. The District will work closely with the Texas Railroad Commission and the landowners to protect the ground water supplies.

Water wells located on oil field locations will be monitored over a long term study to determine if the materials use in drilling and production of hydrocarbons leach into water bearing strata.

**Management Goal:** Reduce the waste of water as far as is reasonably and economically viable. Work with the TRC to monitor for waste of water and develop economical methods to prevent contamination.

**Management Objective:** Begin investigation of all complaints involving waste of water within three days of receiving the complaint.

**Performance Standard:** Annually, verify that all investigations, for all complaints, were started within three days of receiving the complaint.

**Management Objective:** During an investigation:

1. Meet with all parties involved in the complaint during the time of investigation and qualify germane issues.
2. Determine if there is significant waste of water.
   A. If after the investigation it is determined that there is significant waste of water, suggest reasonable and economically viable solutions.
   B. Provide the solutions to the parties involved in an effort to reach an agreement.
      i. If an agreement is reached, encourage its implementation.
      ii. If an agreement is not reached between the parties involved, place the waste of water complaint on the agenda of the next board meeting for consideration by the Board
   C. See that the decision of the Board is implemented.
3. If significant waste of water continues after Board consideration and decision, the District may request that an injunction to stop the waste of water or seek civil (monetary) damages.

**Performance Standard:** Annually determine if the District followed the proper management objectives to the point in time when it was determined that there was no waste of water, the waste of water ended or an injunction or civil penalty was requested.

**D. NATURAL RESOURCE ISSUES**

At the current time the District knows of no natural resource issue which would have an impact on the use or availability of groundwater in the District.
SECTION VI
ENCOURAGE CONSERVATION MEASURES

Sprinkler System Irrigation:
Today many sprinkler systems are low energy precision application (LEPA) systems. These systems are as high as 90% efficient in delivering water to the crop. The new water efficient sprinkler systems now being used are replacing row watering and less efficient sprinkler systems. The District will encourage producers with older systems to convert to LEPA.

SECTION V
PUBLIC RELATIONS AND EDUCATION

One of our goals is that the activities of the District be consistent with sound business practices, insure that the public interest is always considered and make every effort possible to maintain public confidence. It is the District's opinion that public relations and education is a necessity to achieve this goal. The District plans to implement a program to get information to the local residents. Included in the District's plans are: sponsoring field days; providing current information to the residents of the District about water conservation and protection; sponsoring educational activities in cooperation with the City of Canadian, schools, Extension agents, civic clubs, chamber of commerce, and every other available outlet; and sponsoring youth to attend conservation camps and seminars. A newsletter and local media would be used to further the educational duties of the District.

SECTION VIII
OTHER ISSUES

A. SURFACE WATER

It is the opinion of the District that at this time, conjunctive surface water management issues as specified in 31 TAC§3 56.5(a)(1) are not applicable to the operations of the District.

B. SUBSIDENCE

It is the opinion of the District that subsidence is not an issue within the District as specified in 31TAC§356.5(a)(1).

C. RECHARGE

Information from LP-173, Evaluating the Ground-Water Resources of the High Plains of Texas Final Report Volume I states: "Recharge to the High Plains aquifer occurs principally by infiltration of precipitation on the outcrop. Only a small percentage of water from precipitation actually reaches the water table due to a combination of small annual precipitation, high evaporation rate, and low infiltration rate."
From the information contained in the above report, the District has determined that for the reasons listed, recharge, natural or artificial is not a feasible management goal of the District at this time.

D. REGIONAL PLAN

The Panhandle Water Planning Group (PWPG) was established on March 13, 1998 in accordance with Senate Bill 1, Regional Water Planning Area A. The District is represented on the PWPG in the water district category of membership. The District will participate in the efforts of the PWPG in the development of a regional plan for the area. At this time there is not a regional plan in effect within the boundaries of the District.

SECTION IX
FUTURE ACTIVITIES, PLANS AND PROGRAMS

The District is always open for suggestions to help in the conservation and protection of water. Suggestions from residents within the District as to services and/or programs are welcome. We consider the residents of the District to be our greatest resource. We believe that the residents of Hemphill County Water District share the concerns of the District as we work together to conserve and protect our precious water. Since the District is newly formed we look forward to working together to developing the District into a viable entity which will benefit Hemphill County in the future.

The following are future goals of Hemphill County Underground Water Conservation District:

1. Collect Taxes (will begin October 1, 1999)
3. Set up Office (Begin December, 1999)
4. Hire a Secretary (January, 2000)
5. Establish District Operations (January 2000)
7. Develop and Implement Educational Program (2000-2010)
10. Implement Annual Water Quality Program (2000-2010)
11. Implement Annual Water Quantity Program (2000-2010)
APPENDIX A: List of Directors and Officers
Mark S. Meek------President
David Isaacs------Vice-President
Bret Begert--------Secretary
Lee Haygood-------Member
Eddie Abraham-----Member
APPENDIX B: SELECTED REFERENCES


November 16, 1999

Bill Mullican  
Texas Water Development Board  
P.O. Box 13231  
Austin, TX 78711-3231

Dear Mr. Mullican,

Enclosed is a copy of the Hemphill County Underground Water District Management Plan. Also copies of our Board Resolution to adopt the plan, a letter to the Canadian River Authority, newspaper notices of our public hearing on the plan, our agenda, and the minutes of the November 16th, 1999 meeting are enclosed.

Sincerely,

Mark S. Meek

Mark S. Meek  
Chairman, Hemphill County Underground Water Conservation District
November 16, 1999

John C. Williams, General Manager
Canadian River Municipal Water Authority
P.O. Box 99
Stratford, Texas 79078

Dear John,

Enclosed is a copy of the proposed Hemphill County Underground Water Conservation District Management Plan as required by Senate Bill 1. Included in the requirements of SB 1, we are required to develop this plan in coordination with surface water management entities on a regional basis.

I ask that you review the plan, and after your review, let me know if you have any comments in regard to the Plan. SB 1 did not require any formal documentation from the surface water entities; however, I would appreciate a written response from you if possible.

Please feel free to contact me if you have any questions or comments in regard to the Management Plan.

Sincerely,

Mark S. Meek

Mark S. Meek,
Chairman, Hemphill County Underground Water Conservation District
Enclosure: Proposed HCUWCD Management Plan
RESOLUTION
HEMPHILL COUNTY UNDERGROUND
WATER CONSERVATION DISTRICT
1999 MANAGEMENT PLAN

WHEREAS, Texas Water Code, Chapter 36, §36.1071 required the District to develop a comprehensive management plan to address the following management goals as applicable: (1) providing the most efficient use of groundwater; (2) controlling and preventing waste of groundwater; (3) controlling and preventing subsidence; (4) addressing conjunctive surface water management issues; and (5) addressing natural resource issues. and
WHEREAS, The Texas Water Development Board has adopted rules under Title 31, Natural Resource and Conservation Part X. Texas Water Development Board, Chapter 356. Groundwater Management Plan Certification. and
WHEREAS, The Hemphill County Underground Water Conservation District was created in 1997. and
WHEREAS, The Hemphill County Underground Water Conservation District intends to carry out the purpose for which the people created the District. and
WHEREAS, The Texas Water Code, §36.1071 requires the District to identify the performance standards and management objectives under which the District will operate to achieve the management goals. and
WHEREAS, The Board of Directors of the Hemphill County Underground Water Conservation District believes that the 1999 Management Plan of the District reflects the best management of the groundwater for the District and meets the requirements of §36.1071 as applicable. and
WHEREAS, The Board further believes that the description of activities, programs, procedures and Rules of the District included in the Plan provide performance standards and management objectives necessary to effect the Plan in accordance with §36.1071. and
WHEREAS, The Plan includes estimates of the usable amount of groundwater, the amount of groundwater being used, projected groundwater supply and demand within the District as well as addresses recharge. and
WHEREAS, The District is in the process of adopting rules, resolutions, and directives to implement this plan. and
WHEREAS, The District is fully prepared to amend and or adopt additional rules or adopt resolutions or issue directives in the future as determined by the Board of Directors to address issues identified in the future . and
WHEREAS, The District is fully prepared to amend this Plan as determined by the Board of Directors as necessary and in accordance with applicable laws of this state.
NOW THEREFORE BE IT RESOLVED:
The Board of Directors of the HEMPHILL COUNTY UNDERGROUND WATER
CONSERVATION DISTRICT does hereby adopt the 1999 Hemphill County Underground Water
Conservation District Management Plan. This the 16th day of November, 1999.

Mark S. Meek, President
Bret Bogert, Secretary
Lee Haygood, Director
Eddie Abraham, Director
David Isaacs, Vice President
HEMPHILL COUNTY UNDERGROUND WATER
CONSERVATION DISTRICT
BOARD OF DIRECTORS

November 12, 1999

Notice is now given that the Hemphill County Underground Water Conservation District Board of Directors will meet in a called meeting at 6:30 p.m. on Tuesday, the 16th day of November, 1999, in the Commissioners' Courtroom of the Hemphill County Courthouse in Canadian, Texas, to consider the following:

AGENDA

1. PUBLIC HEARING
2. CONSIDER ACCEPTING PROPOSED MANAGEMENT PLAN AND PROPOSED RULES.

Executed this the 12th day of November, 1999.

Mark Meek, Chairman
Hemphill County Underground Water Conservation District
**Canadian Record**

**THURSDAY, NOVEMBER 11, 1999**

**Classifieds**

**Help Wanted**

**CANADIAN INDEPENDENT**

School District is accepting applications for cafeteria help. Applicants may contact Linda Johnson at Baker Elementary School, 723 Cheyenne, Canadian, Texas 79014 or by calling 806-323-5386.

45-2cC

**CLASS A CDL driver needed.**

Must be able to lift 100 lbs. Good pay and benefits. Anchor Drilling Fluids, 323-9233, Kevin.

44-tfcA

**LVN NIGHT NURSE, top pay, benefits, travel allowance.** Apply in person, Edward Abraham Memorial Home, 803 S. Birch, Canadian, TX.

42-tfcA

**Public Notice**

**NOTICE OF PUBLIC HEARING**

To discuss proposed management plan and proposed rules for the Hemphill County Underground Water Conservation District.

6:30 p.m., Tuesday, November 16

In the Commissioner’s Courtroom at the Hemphill County Courthouse.

**Special Services**

**LINE-X Spray on bedliners. Voted number 1 in quality.** Call 806-665-3098 for details and promotions. 1206 Alcock, Pampa.

45-2cS

**THE CHICKEN HOUSE at 1030 Kingman has gifts and gift baskets for all occasions. Call-in orders welcome.** 323-5913.

44-tfcF

**NAVARRO MASONRY, brick home, concrete & stucco (original or synthetic), fences (all types). Call collect 806-878-3200.**

42-4pN

**Car and Truck Repairs and Restoration by experienced. See ads in the classifieds.**

43-4pT

**Free**

**GARAGE DOOR, metal, 10', wide, for single garage.** Call 323-6309.

45-inc

**Agriculture**

**GOOD GRASS horse hay, in barn $2.55 a bale; lesser quality $2.40 a bale.** Call 323-9749.

45-1cW

**HAY FOR SALE: Large, round bales of Sudan hay for sale, $25 a bale.** Dwight Tipps, 806-375-2208 or 806-375-2574.

43-4pT

**Public Notice**

**NOTICE OF PUBLIC SALE of Property to satisfy landlord’s lien.**

Sale is 10 a.m. November 30, 1999 at 101 Birch St., Canadian, TX.

Property will be sold to highest bidder for cash. Seller reserves right to withdraw property from sale. Property includes contents for spaces of following tenants: Kenneth Ballard: Baseball cards, wheel chair, mini pool table, books, and misc. Jackie Blevins: Furniture, lawn mower, 2 saddles, gas grill, miscellaneous items.

45-2cL

**Use The Record’s Classifieds**

To buy, sell, trade, rent, or to offer or find special services or publish legal notices. Rate is 30 cents per word; minimum charge $6.00. Classified display advertisements are $6.00 per column inch. Cards of thanks are $8.00 each. Legal notices are $1.80 per line. Deadline for classified advertising is Wednesday noon.

**Cow Pokes**

By Ace Reid

http://www.cow-pokes.com

© Ace Reid 11/21/99
classifieds

% public notice

NOTICE OF PUBLIC HEARING
To discuss proposed management plan and proposed rules for the Hemphill County Underground Water Conservation District.
6:30 p.m., Tuesday, November 16
In the Commissioner's Courtroom
at the Hemphill County Courthouse.

% notice to bidders

Hemphill County Hospital's Board of Directors is seeking bids for health insurance for employees of the hospital district for the period January 1, 2000 through December 31, 2000. Bids are to be submitted to the Administrator no later than 4:00 p.m. on Monday, December 20, 1999 for consideration at the regular board meeting to be held at 5:00 p.m. on Tuesday, December 21, 1999. Specifications may be either natural or synthetic. All bids are due by 5:00 p.m. on December 20, 1999. Call collect 806-878-3000.

% special services

THE CHICKEN HOUSE at 1030 Kingsman has gifts and gift baskets for all occasions. Call-in orders welcome. 323-5813.

% Use The Record's Classifieds

To buy, sell, trade, rent or to offer or find special services, or publish legal notices. Rate is 30 cents per word, minimum charge $6.00. Classified display advertisements are $6.00 per column inch. Cards of thanks are $8.00 each. Legal notices are $1.80/line. Deadline for classified advertising is Wednesday noon.

% card of thanks

We want to take this time to thank all at the Hospice and to all who sent food and flowers and those for just being there to talk.

EMMA SIMPSON FAMILY

% card of thanks

We would like to thank Caroline Cornett for all the time and effort.

HAY FOR SALE: 7 large loads of small bale hay. 806-375-2209 or 806-375-2574.

LARGE, ROUND Wheat & rye grain hay for sale. Call 813-6646.

CAR AND TRUCK Repairs and maintenance by appointment, See.

http://www.cowpokes.com
By Ace Reid

11/21/99