Victoria County Groundwater Conservation District Management Plan

| Victoria County Groundwater Conservation District Board of Directors Management Plan Adoption: | October 24, 2008 |
|---|-------------------|
| Texas Water Development Board Administrative Management Plan Approval: | December 22, 2008 |
| Victoria County Groundwater Conservation District Board of Directors Management Plan Revision Adoption: | August 16, 2013 |
| Texas Water Development Board Administrative Management Plan Revision Approval: | , 2013 |

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DISTRICT MISSION

The mission of the Victoria County Groundwater Conservation District (**DISTRICT**) is to develop sound water conservation and management strategies designed to conserve, preserve, protect, and prevent waste of groundwater resources within Victoria County for the benefit of Victoria County's landowners, citizens, economy, and environment.

The DISTRICT will implement these strategies through the acquisition and dissemination of hydrogeological information, the development of programs and incentives to conserve and protect groundwater resources, and the adoption and enforcement of fair and appropriate District rules governing the production and use of the groundwater resources within the District.

PURPOSE OF THE MANAGEMENT PLAN

Senate Bill 1, enacted by the 75th Texas Legislature in 1997, and Senate Bill 2, enacted by the 77th Texas Legislature in 2001, established a comprehensive statewide water resource planning process and the actions necessary for groundwater conservation districts to manage and conserve the groundwater resources of the state of Texas. These bills required all groundwater conservation districts to develop a management plan which defines the groundwater needs and groundwater supplies within each district and the goals each district has set to achieve its mission.

In addition, the 79th Texas Legislature enacted House Bill 1763 in 2005 that requires joint planning among districts that are in the same groundwater management area. These districts must jointly agree upon and establish the desired future conditions of the aquifers within their respective groundwater management areas. Through this process, the groundwater conservation districts will submit the desired future conditions to the executive administrator of the Texas Water Development Board who, in turn, will provide each district within the groundwater management area with the amount of modeled available groundwater within each district. The modeled available groundwater within the desired future conditions for each aquifer within the groundwater management area.

Technical information, such as the desired future conditions within the District's jurisdiction and the amount of modeled available groundwater from such aquifers is required by statute to be included in the DISTRICT's management plan and will guide the DISTRICT's regulatory and management policies. This management plan is intended to satisfy the requirements of Senate Bill 1, Senate Bill 2, House Bill 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the rules and requirements of the Texas Water Development Board.

DISTRICT INFORMATION

Creation

The 79th Texas Legislature created the DISTRICT in 2005 by passage of House Bill 3423. The citizens of Victoria County confirmed creation of the DISTRICT by an election held on November 8, 2005. The DISTRICT was formed to protect, conserve, and prevent waste of the groundwater resources beneath the area of Victoria County. To manage the groundwater resources under its jurisdiction, the DISTRICT is charged with the rights and responsibilities specified in its enabling legislation; the provisions of Chapter 36 of the Texas Water Code; this Management Plan, and the District Rules.

Directors

The Victoria County Groundwater Conservation District Board of Directors consists of five members. These five directors are elected by the voters of Victoria County and serve a four-year term. The DISTRICT observes the same four precincts as the Victoria County Commissioners' with one at-large position. Director terms are staggered on a two-year election interval in even numbered years.

Authority

The DISTRICT has the rights and responsibilities provided in Chapter 36 of the Texas Water Code and Chapter 356 of Title 31 of the Texas Administrative Code. The DISTRICT has the authority to undertake hydrogeological studies, adopt a management plan, provide for the permitting of certain water wells, and implement programs to achieve statutory requirements. The DISTRICT has rule-making authority to implement its policies and procedures to manage the groundwater resources of Victoria County.

Location and Extent

The boundaries of the DISTRICT are the same as Victoria County. This area encompasses approximately 888 square miles. The District is bounded by DeWitt County, Lavaca County, Jackson County, Calhoun County, Refugio County, and Goliad County.

GROUNDWATER RESOURCES OF VICTORIA COUNTY

Deposition from sediment-laden rivers, currents from the Gulf of Mexico, and storm waves have influenced the geologic formations in Victoria County. The fluctuation of the coastline over geologic eons contributed to the deposition of sediments within the Victoria County as well. The geologic formations in the Victoria County according to their depositional age are summarized in Table 1. The Gulf Coast Aquifer underlies Victoria County.

Table 1: Geologic Formations in Victoria County (Modified after Marvin et al., 1962, Baker, 1979)

| System | Series | Stratigraphy | Average Thickness | Aquifer Formation |
|------------|-------------|--------------------|----------------------|----------------------|
| | Recent | Alluvium | 300 feet | |
| Quaternary | | Beaumont Clay | 600 feet | Chicot |
| | Pleistocene | Lisse Formation | 600 feet | Evengeline |
| | Pliocene | Goliad Sand | 400 feet | Evangeline |
| | Miocene | Lagarto Clay | 1,000 feet | Burkeville |
| | Miocene | Oakville Sandstone | 500 feet | Jasper |

The Gulf Coast aquifer is conceptualized to comprise of four distinct aquifers: Chicot, Evangeline, Burkeville confining unit and the Jasper aquifer (Baker, 1979). These aquifers are included within the Central Gulf Coast Groundwater Availability Model developed by the Texas Water Development Board (Chowdhury and Mace, 2004). The Chicot and the Evangeline aquifers are used the most within the Victoria County Groundwater Conservation District. The Chicot aquifer outcrops for most of the district except for a small portion along the western boundary of the Victoria County. The thickness of the Chicot aquifer ranges from less than 50 feet in the western portion of Victoria County to nearly 1,000 feet in the eastern portion of Victoria County. The thickness of the Evangeline aquifer varies from approximately 1,000 feet in the eastern portion of Victoria County. The chicot and Evangeline aquifer consist of interbedded sands, silts and clays. The sand content is higher in the Evangeline aquifer compared to the Chicot aquifer.

STATEMENT OF GUIDING PRINCIPLES

The DISTRICT recognizes that the groundwater resources of Victoria County and the region are of vital importance to the many users who are dependent on these valuable resources. In addition, the DISTRICT recognizes that the landowners have an ownership right in the groundwater resources associated with their properties and are the primary stewards of the groundwater resources associated with their properties. The District will work with interested parties, especially landowners, in Victoria County to conserve, preserve, protect, and prevent waste of this most valuable resource, for the benefit of the landowners, the public, the local economy, and the environment.

The DISTRICT's management plan is intended to serve as a tool to focus the thoughts and actions of those given the responsibility for the execution of the DISTRICT's activities as well as to provide information to the staff of the DISTRICT, landowners, and others responsible for the execution of, or compliance with, the DISTRICT's policies and rules. The DISTRICT will carry out its programs and responsibilities in implementing this management plan in a prudent and cost effective manner. The DISTRICT, with public input, will adopt and enforce rules necessary to implement this management plan.

CRITERIA FOR PLAN APPROVAL

Planning Horizon

The time period for this plan is 10 years from the date of approval by the Texas Water Development Board. This plan will be reviewed within five years as required by §36.1072(e) of the Texas Water Code. The DISTRICT will consider the necessity to amend the plan and re-adopt this management plan with or without amendments as required by §36.1072(e) of the Texas Water Code.

This management plan will remain in effect until replaced by a revised management plan approved by the Texas Water Development Board.

Notice and Hearing Related to Plan Adoption - TWC §36.1071(a)

Public notices documenting that this plan was considered and adopted following appropriate public hearings are included in Appendix D.

Coordination with Regional Surface Water Management Entities - TWC §36.1071(a)

Letters transmitting this plan to the surface water management entities of the Victoria County region for coordination purposes are included in Appendix E.

Victoria County Groundwater Conservation District Board of Director Resolution Adopting Management Plan

A copy of the DISTRICT's resolution adopting this plan is included in Appendix F.

ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY §36.1071 OF THE TEXAS WATER CODE AND RULE 356.52 OF TITLE 31 OF THE TEXAS ADMINISTRATIVE CODE

Estimate of Modeled Available Groundwater in the DISTRICT based on Desired Future Conditions – TWC §36.1071(e)(3)(A) and 31 TAC 356.52(a)(5)(A)

Modeled available groundwater is defined in §36.001 of the Texas Water Code as "the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108." Desired future condition is defined in §36.001 of the Texas Water Code as "a quantitative description, adopted in accordance with §36.108 of the Texas Water Code, of the desired condition of the groundwater resources in a management area at one or more specified future times." The desired future condition of an aquifer may only be determined through joint planning with other groundwater conservation districts in the same groundwater management area as required by the 79th Legislature with the passage of House Bill 1763 into law.

The DISTRICT is located in Groundwater Management Area 15. The groundwater conservation districts of Groundwater Management Area 15 completed the first-round of joint planning process to determine the desired future condition of the aquifers within the groundwater management area.

District representatives of Groundwater Management Area 15 adopted, by resolution, the desired future condition for Gulf Coast Aquifer within Groundwater Management Area 15 on July 14, 2010. The desired future condition is stated as follows:

"An average drawdown of the Gulf Coast Aquifer within the GMA 15 boundary of 12 feet relative to year 1999 starting conditions in accordance with Table 7 of GAM Run 10-008 Addendum."

The Texas Water Development Board reported the modeled available groundwater for Groundwater Management Area 15 based on the desired future condition in GAM Run 10-028 MAG which is incorporated into this management plan as Appendix C. The modeled available groundwater, in acre-feet per year (AFY), of the Gulf Coast Aquifer within the DISTRICT per Table 5 of the GAM Run 10-028 MAG report is as follows:

| Year | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|--|--|--|--|--|
| 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | | | | |
| 35,694 AFY | | | | | |

Estimate of amount of groundwater being used within the district on an annual basis – TWC §36.1071(e)(3)(B) and 31 TAC 356.52(a)(5)(B)

Please refer to Appendix A.

Estimate of annual amount of recharge from precipitation to the groundwater resources within the district – TWC §36.1071(e)(3)(C) and 31 TAC 356.52(a)(5)(C)

Please refer to Appendix B.

Estimate for each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers – TWC §36.1071(e)(3)(D) and 31 TAC 356.52(a)(5)(D)

Please refer to Appendix B.

Estimate of annual volume of flow into and out of the district within each aquifer and between aquifers in the district – TWC §36.1071(e)(3)(E) and 31 TAC 356.52(a)(5)(E)

Please refer to Appendix B.

Estimate of projected surface water supply in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(F) and 31 TAC 356.52(a)(5)(F)

Please refer to Appendix A.

Estimate of projected total demand for water in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(G) and 31 TAC 356.52(a)(5)(G)

Please refer to Appendix A.

CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN – TWC §36.1071(e)(4)

Please refer to Appendix A.

DETAILS ON THE DISTRICT MANAGEMENT OF GROUNDWATER

The Texas Legislature established that groundwater conservation districts are the

preferred method of groundwater management in TWC §36.0015. The DISTRICT will manage the use of groundwater within Victoria County in order to protect, preserve, conserve, and prevent waste of the resource while seeking to maintain the economic viability of all resource user groups, public and private. The DISTRICT seeks to manage the groundwater resources of Victoria County as practicably as possible as established in the plan. In consideration of the economic and cultural activities occurring within Victoria County, the DISTRICT will identify and engage in such activities and practices, that if implemented may result in the reasonable and effective protection, preservation, conservation, waste prevention of groundwater in Victoria County. The DISTRICT will manage groundwater resources through rules developed and implemented in accordance with Chapter 36 of the Texas Water Code and the provisions of the DISTRICT's enabling legislation.

For the purposes of this management plan, the following definitions are used:

- Protection of groundwater is the activity and practice of seeking to prevent harm or injury to a groundwater resource.
- Preservation of groundwater is the activity and practice of seeking to extend the useful longevity or life of a groundwater resource.
- Conservation of groundwater is the activity and practice of seeking to use a groundwater resource in a manner that appropriately balances the impacts associated with consuming the resource and preserving the resource for the future.
- Waste prevention of groundwater is the activity and practices seeking to prevent the use of groundwater in any manner defined as waste in Section 36.001 of the Texas Water Code.

An observation well network will be established and maintained by the DISTRICT in order to monitor changing water levels and water quality of groundwater supplies within Victoria County. When a monitoring well network has been established, the DISTRICT will make a regular assessment of water supply and groundwater storage conditions, water quality conditions and will report those conditions to the Victoria County Groundwater Conservation Board of Directors and to the public. The DISTRICT may undertake, as necessary, investigations of the groundwater resources within Victoria County and will make the results of investigations available to the public. The DISTRICT will co-operate with investigations of the groundwater resources of Victoria County undertaken by other local political subdivisions or agencies of the State of Texas.

In order to better manage groundwater resources the DISTRICT may establish management zones for; and adopt different rules for:

- 1. Each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within Victoria County; or
- 2. Each geographic area overlying an aquifer or subdivision of an aquifer located in whole or in part within Victoria County.

For the purpose of managing the use of groundwater within Victoria County, the

DISTRICT may define sustainable use as the use of an amount of groundwater in Victoria County as a whole or any management zone established by the DISTRICT that does not exceed any of the following conditions:

- 1. The long-term average historical groundwater production from aquifers in Victoria County established by the DISTRICT prior to the establishment of the desired future condition of aquifers in a groundwater management area in which the DISTRICT is located; or
- 2. The desired future conditions of aquifers in Victoria County established by a groundwater management area in which the DISTRICT is located; or
- 3. The amount of modeled available groundwater resulting from the establishment of a desired future aquifer condition by the DISTRICT or a groundwater management area in which the DISTRICT is located; or
- 4. The estimated long-term average historical amount of annual recharge of the aquifer or aquifer subdivision in which the use occurs as recognized by the DISTRICT; or
- 5. Any other criteria established by the DISTRICT as being a threshold of use beyond which further use of the aquifer or aquifer subdivision may result in a specified undesirable or injurious condition.

The DISTRICT may adopt rules that protect historic use of groundwater in Victoria County to the maximum extent practical and consistent with this plan and the goals and objectives set forth herein. The DISTRICT may impose more restrictive conditions on non-historic-use permits and non-historic-use permit amendments to increase use by historic users if the limitations:

- 1. Apply to all non-historic-use permits and non-historic-use permit amendments to increase use by historic users, regardless of the type or location of use;
- 2. Bear a reasonable relationship to the DISTRICT's management plan; and
- 3. Are reasonably necessary to protect historic use.

The DISTRICT may adopt rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making a determination to grant or deny a permit or limit groundwater withdrawals shall include those set forth in the DISTRICT enabling Legislation, Chapter 36 of the Texas Water Code, and the rules of the District. The District may employ technical resources at its disposal, as needed, to evaluate the groundwater resources available within Victoria County and to determine the effectiveness of regulatory or conservation measures. In consideration of particular individual, localized or District-wide conditions, including without limitation climatic conditions, the DISTRICT may, by rule, allow an increase or impose a decrease in the total production in a management zone above or below the sustainable amount for a period of time considered necessary by the DISTRICT in order to accomplish the purposes set forth in Chapter 36 of the Texas Water Code, or the DISTRICT's enabling legislation. The exercise of said discretion by the Victoria County Groundwater Conservation District Board of Directors shall not be construed as limiting the power of the Victoria County Groundwater Conservation District Board of Directors.

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION – TWC §36.1071(e)(2)

The DISTRICT will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all DISTRICT activities. All operations of the DISTRICT, all agreements entered into by the DISTRICT, and any additional planning efforts in which the DISTRICT may participate will be consistent with the provisions of this plan.

Rules adopted by the DISTRICT for the permitting of wells and the use of groundwater shall comply with Chapter 36 of the Texas Water Code, including §36.113 of the Texas Water Code, and the provisions of this management plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available to the DISTRICT.

The DISTRICT's rules are available at the following website address: www.vcgcd.org

METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS – 31TAC 356.52(a)(4)

The staff of the DISTRICT will prepare and present an annual report to the Victoria County Groundwater Conservation Board of Directors regarding the DISTRICT's performance in achieving management goals and objectives for the fiscal year. The report will be presented within 120 days following the completion of the DISTRICT's fiscal year. The DISTRICT will maintain the report on file for public inspection at the District's offices upon adoption at a meeting of the Victoria County Groundwater Conservation Board of Directors.

GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

Providing the most efficient use of groundwater – TWC §36.1071(a)(1) and 31 TAC 356.52(a)(1)(A)

Objective: Develop and maintain a water well registration program for tracking well information for wells within Victoria County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the changes related to water well registration including the number of non-grandfathered and grandfathered wells registered.

Objective: Develop and maintain a water well permitting program for processing and tracking all permits authorizing groundwater production.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the changes related to water well permitting including the number of new applications and the disposition of the applications.

Controlling and preventing waste of groundwater – TWC §36.1071(a)(2) and 31 TAC 356.52(a)(1)(B)

Objective: Develop and maintain a water well inspection program for non-exempt wells.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the findings of the inspection activities including information regarding the number of wells that require improvement to control or prevent waste of groundwater.

Controlling and preventing subsidence – TWC §36.1071(a)(3) and 31 TAC 356.52(a)(1)(C)

This category of management goal is not applicable to the DISTRICT at this time because no significant subsidence has occurred in Victoria County. The DISTRICT will monitor geological conditions for evidence of subsidence, particularly in high groundwater production areas near the coast and take appropriate action should subsidence develop.

Addressing conjunctive surface water management issues – TWC §36.1071(a)(4) and 31 TAC 356.52(a)(1)(D) **Objective:** Participate in the regional water planning process by attending at least one South Central Texas Regional Water Planning Group (Region L) meeting per year.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the representatives of the DISTRICT, dates, and the number of meetings of the South Central Texas Regional Water Planning Group attended.

Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater – TWC §36.1071(a)(5) and 31 TAC §356.52(a)(1)(E)

Objective: Develop and maintain a water quality monitoring program.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the monitoring activities including the number of wells monitored and the year-to-year change of water quality.

Addressing drought conditions – TWC §36.1071(a)(6) and 31 TAC 356.52(a)(1)(F)

Objective: Collect and review drought condition information related to Victoria County and the surrounding region of Texas.

Performance Standard: Each year, the District will summarize within the annual report the drought condition information collected and reviewed.

Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and costeffective – TWC §36.1071(a)(7) and 31 TAC 356.52(a)(1)(G)

Objective: Promote conservation, rainwater harvesting or brush control within Victoria County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the activities directly related to conservation, rainwater harvesting or brush control including educational materials developed and delivered to local schools, cooperative educational contributions and grants, public speaking events and presentations, community event participation, and educational publications.

Recharge enhancement and precipitation enhancement are deemed to be not appropriate or cost-effective programs for the DISTRICT at this time because there are no existing recharge enhancement or precipitation enhancement programs operating in nearby counties in which the DISTRICT could participate and share costs. The costs of operating a single-county recharge enhancement or precipitation enhancement program are prohibitive and would require the DISTRICT to increase taxes. Therefore, these goals are not applicable to the DISTRICT at this time.

Addressing the desired future conditions adopted by the district under Section 36.108 – TWC §36.1071(a)(8) and 31 TAC 356.52(a)(1)(H)

Objective: Develop and maintain a water level monitoring program.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the water level monitoring activities including the number of wells monitored and the year-to-year change of water level.

Objective: Analyze water level monitoring information to evaluate water level trends and determine the degree to which the DISTRICT is complying with the desired future conditions of Gulf Coast Aquifer in Victoria County.

Performance Standard: Each year, the DISTRICT will summarize within the annual report the water level trends and the conclusions regarding the DISTRICT's compliance with the desired future condition of the Gulf Coast Aquifer in Victoria County.

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Appendix A. Estimated Historical Water Use and 2012 State Water Plan Datasets provided by Texas Water Development Board

Estimated Historical Water Use And 2012 State Water Plan Datasets:

Victoria County Groundwater Conservation District

by Stephen Allen Texas Water Development Board Groundwater Resources Division Groundwater Technical Assistance Section stephen.allen@twdb.texas.gov (512) 463-7317 February 6, 2013

GROUNDWATER MANAGEMENT PLAN DATA:

This package of water data reports (part 1 of a 2-part package of information) is being provided to groundwater conservation districts to help them meet the requirements for approval of their fiveyear groundwater management plan. Each report in the package addresses a specific numbered requirement in the Texas Water Development Board's groundwater management plan checklist. The checklist can be viewed and downloaded from this web address:

https://www.twdb.state.tx.us/groundwater/docs/GCD/GMPchecklist0113.pdf

The five reports included in part 1 are:

- 1. Estimated Historical Water Use (checklist Item 2) from the TWDB Historical Water Use Survey (WUS)
- 2. Projected Surface Water Supplies (checklist Item 6)
- 3. Projected Water Demands (checklist Item 7)
- 4. Projected Water Supply Needs (checklist Item 8)
- 5. Projected Water Management Strategies (checklist Item 9)

reports 2-5 are from the 2012 State Water Plan (SWP)

Part 2 of the 2-part package is the groundwater availability model (GAM) report. The District should have received, or will receive, this report from the Groundwater Availability Modeling Section. Questions about the GAM can be directed to Dr. Shirley Wade, shirley.wade@twdb.texas.gov, (512) 936-0883.

DISCLAIMER:

The data presented in this report represents the most updated Historical Water Use and 2012 State Water Planning data available as of 2/6/2013. Although it does not happen frequently, neither of these datasets are static and are subject to change pending the availability of more accurate data (Historical Water Use data) or an amendment to the 2012 State Water Plan (2012 State Water Planning data). District personnel must review these datasets and correct any discrepancies in order to ensure approval of their groundwater management plan.

The Historical Water Use dataset can be verified at this web address:

http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/

The 2012 State Water Planning dataset can be verified by contacting Wendy Barron (wendy.barron@twdb.texas.gov or 512-936-0886).

For additional questions regarding this data, please contact Stephen Allen (stephen.allen@twdb.texas.gov or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.texas.gov or 512-936-2420).

Estimated Historical Water Use TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar years 2005, 2011 and 2012. TWDB staff anticipates the calculation and posting of these estimates at a later date.

| Year | Source | Municipal | Manufacturing | Steam Electric | Irrigation | Mining | Livestock | Total |
|------|----------|------------|---------------|----------------|---------------|------------|-----------|-------------|
| | | • | - | | - | 787 | 174 | |
| 1974 | GW SW | 7,644 0 | 1,636 | 5,123 | 15,983 109 | 787 456 | | 31,347 |
| | | - | 28,136 | 1,946 | | | 1,372 | 32,019 |
| 1980 | GW | 10,265 | 876 | 2,178 | 25,799 | 102 | 713 | 39,933 |
| | SW | 0 | 33,412 | 1,610 | 300 | 607 | 466 | 36,395 |
| 1984 | GW | 12,378 | 836 | 3,635 | 20,201 | 2,265 | 702 | 40,017 |
| | SW | 0 | 15,992 | 1,876 | 133 | 319 | 468 | 18,788 |
| 1985 | GW | 12,853 | 772 | 3,716 | 11,045 | 3,163 | 702 | 32,251 |
| | SW | 0 | 14,089 | 3,622 | 831 | 319 | 468 | 19,329 |
| 1986 | GW | 12,288 | 657 | 3,307 | 9,216 | 0 | 682 | 26,150 |
| | SW | 0 | 16,825 | 2,191 | 384 | 0 | 453 | 19,853 |
| 1987 | GW | 12,025 | 642 | 2,780 | 10,337 | 2,814 | 711 | 29,309 |
| | SW | 0 | 20,196 | 1,735 | 431 | 0 | 474 | 22,836 |
| 1988 | GW | 12,511 | 509 | 2,322 | 16,863 | 2,585 | 744 | 35,534 |
| | SW | 0 | 27,322 | 24 | 703 | 0 | 496 | 28,545 |
| 1989 | GW | 12,287 | 533 | 1,474 | 18,244 | 2,409 | 774 | 35,721 |
| | SW | 0 | 26,683 | 33 | 133 | 0 | 515 | 27,364 |
| 1990 | GW | 11,545 | 489 | 865 | 13,151 | 2,409 | 763 | 29,222 |
| | SW | 0 | 19,543 | 22 | 548 | 0 | 508 | 20,621 |
| 1991 | GW | 11,323 | 492 | 987 | 10,509 | 3,086 | 780 | 27,177 |
| | SW | 0 | 19,543 | 38 | 0 | 0 | 521 | 20,102 |
| 1992 | GW | 11,919 | 632 | 876 | 10,297 | 3,096 | 839 | 27,659 |
| | SW | 0 | 12,599 | 32 | 429 | 0 | 559 | 13,619 |
| 1993 | GW | 12,156 | 501 | 1,409 | 11,012 | 3,025 | 811 | 28,914 |
| | SW | 0 | 16,697 | 26 | 459 | 0 | 541 | 17,723 |
| 1994 | GW | 12,084 | 557 | 1,117 | 14,258 | 3,016 | 754 | 31,786 |
| | SW | 0 | 18,471 | , 21 | 133 | 0 | 503 | 19,128 |
| 1995 | GW | 12,325 | 554 | 1,965 | 11,051 | 3,015 | 692 | , 29,602 |
| 1995 | SW | 0 | 18.624 | 41 | 460 | 0 | 462 | 19,587 |
| 1996 | GW | 13,781 | 588 | 1,872 | 11,797 | 3,015 | 1,044 | 32,097 |
| 1990 | SW | 13,701 | 18,999 | 21 | 492 | 5,015 | 696 | 20,208 |
| 1997 | GW | 12,470 | 567 | 1,928 | 8,748 | 3,015 | 611 | 27,339 |

Estimated Historical Water Use and 2012 State Water Plan Dataset:

Victoria County Groundwater Conservation District

February 6, 2013

Page 3 of 8

Estimated Historical Water Use TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar years 2005, 2011 and 2012. TWDB staff anticipates the calculation and posting of these estimates at a later date.

| Year | Source | Municipal | Manufacturing | Steam Electric | Irrigation | Mining | Livestock | Total |
|------|--------|-----------|---------------|----------------|------------|--------|-----------|--------|
| 1997 | SW | 0 | 22,267 | 6,050 | 364 | 0 | 407 | 29,088 |
| 1998 | GW | 13,809 | 521 | 1,643 | 10,164 | 3,015 | 671 | 29,823 |
| | SW | 0 | 47,247 | 8,050 | 424 | 0 | 447 | 56,168 |
| 1999 | GW | 13,289 | 717 | 2,446 | 7,237 | 3,015 | 678 | 27,382 |
| | SW | 0 | 37,651 | 8,050 | 302 | 0 | 451 | 46,454 |
| 2000 | GW | 13,712 | 619 | 2,189 | 6,708 | 3,015 | 649 | 26,892 |
| | SW | 0 | 23,645 | 8 | 0 | 0 | 435 | 24,088 |
| 2001 | GW | 8,662 | 612 | 542 | 7,339 | 2,293 | 286 | 19,734 |
| | SW | 0 | 23,702 | 1,701 | 0 | 0 | 788 | 26,191 |
| 2002 | GW | 10,483 | 499 | 261 | 7,301 | 2,293 | 292 | 21,129 |
| | SW | 0 | 19,607 | 818 | 0 | 0 | 803 | 21,228 |
| 2003 | GW | 10,320 | 515 | 261 | 3,900 | 2,293 | 308 | 17,597 |
| | SW | 0 | 20,243 | 818 | 66 | 0 | 847 | 21,974 |
| 2004 | GW | 9,156 | 508 | 303 | 2,966 | 2,293 | 303 | 15,529 |
| | SW | 0 | 19,966 | 952 | 0 | 0 | 834 | 21,752 |
| 2006 | GW | 2,767 | 488 | 30 | 2,306 | 0 | 771 | 6,362 |
| | SW | 10,852 | 20,910 | 853 | 0 | 0 | 514 | 33,129 |
| 2007 | GW | 2,953 | 501 | 788 | 1,165 | 0 | 690 | 6,097 |
| | SW | 8,952 | 17,549 | 8 | 0 | 0 | 460 | 26,969 |
| 2008 | GW | 2,711 | 515 | 733 | 3,775 | 0 | 656 | 8,390 |
| | SW | 11,226 | 20,995 | 1,782 | 0 | 0 | 437 | 34,440 |
| 2009 | GW | 1,700 | 535 | 2,192 | 5,990 | 43 | 659 | 11,119 |
| | SW | 14,604 | 24,146 | 1,963 | 0 | 5 | 439 | 41,157 |
| 2010 | GW | 2,838 | 594 | 1,896 | 8,451 | 45 | 660 | 14,484 |
| | SW | 10,824 | 22,694 | 29,579 | 0 | 5 | 438 | 63,540 |

Estimated Historical Water Use and 2012 State Water Plan Dataset: Victoria County Groundwater Conservation District February 6, 2013 Page 4 of 8

Projected Surface Water Supplies TWDB 2012 State Water Plan Data

| VICT | /ICTORIA COUNTY All values are in acre-feet/year | | | | | | | | | |
|------|--|----------------------|---|--------|--------|--------|--------|--------|--------|--|
| RWPG | WUG | WUG Basin | Source Name | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | |
| L | IRRIGATION | GUADALUPE | GUADALUPE RIVER COMBINED RUN-OF- RIVER IRRIGATION | 400 | 400 | 400 | 400 | 400 | 400 | |
| L | LIVESTOCK | GUADALUPE | LIVESTOCK LOCAL SUPPLY | 254 | 254 | 254 | 254 | 254 | 254 | |
| L | LIVESTOCK | LAVACA | LIVESTOCK LOCAL SUPPLY | 3 | 3 | 3 | 3 | 3 | 3 | |
| L | LIVESTOCK | lavaca- guadalupe | LIVESTOCK LOCAL SUPPLY | 256 | 256 | 256 | 256 | 256 | 256 | |
| L | LIVESTOCK | SAN ANTONIO | LIVESTOCK LOCAL SUPPLY | 31 | 31 | 31 | 31 | 31 | 31 | |
| L | MANUFACTURING | GUADALUPE | GUADALUPE RIVER RUN-OF-RIVER | 28,217 | 28,217 | 28,217 | 28,217 | 28,217 | 28,217 | |
| L | VICTORIA | GUADALUPE | GUADALUPE RIVER RUN-OF-RIVER | 1,240 | 1,240 | 1,240 | 1,240 | 1,240 | 1,240 | |
| | Sum of Projected Sur | face Water Supp | olies (acre-feet/year) | 30,401 | 30,401 | 30,401 | 30,401 | 30,401 | 30,401 | |

Estimated Historical Water Use and 2012 State Water Plan Dataset: Victoria County Groundwater Conservation District February 6, 2013 Page 5 of 8

Projected Water Demands TWDB 2012 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

| VICT | ORIA COUNTY | | | | A | II values a | re in acre- | feet/year |
|------|----------------------|--------------------------------|--------|---------|---------|-------------|-------------|-----------|
| RWPG | WUG | WUG Basin | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
| L | COUNTY-OTHER | GUADALUPE | 1,520 | 1,686 | 1,821 | 1,912 | 1,998 | 2,095 |
| L | MANUFACTURING | GUADALUPE | 28,726 | 32,095 | 35,035 | 37,962 | 40,578 | 43,520 |
| L | STEAM ELECTRIC POWER | GUADALUPE | 4,052 | 53,178 | 53,178 | 53,178 | 53,178 | 53,178 |
| L | MINING | GUADALUPE | 2,966 | 3,392 | 3,689 | 3,991 | 4,302 | 4,542 |
| L | IRRIGATION | GUADALUPE | 1,450 | 1,252 | 1,080 | 932 | 805 | 695 |
| L | LIVESTOCK | GUADALUPE | 507 | 507 | 507 | 507 | 507 | 507 |
| L | VICTORIA | GUADALUPE | 8,013 | 8,505 | 8,860 | 9,092 | 9,361 | 9,650 |
| L | COUNTY-OTHER | LAVACA | 5 | 6 | 6 | 7 | 7 | 7 |
| L | LIVESTOCK | LAVACA | 5 | 5 | 5 | 5 | 5 | 5 |
| L | VICTORIA | LAVACA-GUADALUPE | 3,911 | 4,151 | 4,324 | 4,438 | 4,569 | 4,710 |
| L | COUNTY-OTHER | LAVACA-GUADALUPE | 1,136 | 1,260 | 1,360 | 1,428 | 1,493 | 1,565 |
| L | MINING | LAVACA-GUADALUPE | 978 | 1,119 | 1,217 | 1,317 | 1,419 | 1,499 |
| L | IRRIGATION | LAVACA-GUADALUPE | 8,486 | 7,324 | 6,322 | 5,456 | 4,709 | 4,064 |
| L | LIVESTOCK | LAVACA-GUADALUPE | 512 | 512 | 512 | 512 | 512 | 512 |
| L | LIVESTOCK | SAN ANTONIO | 61 | 61 | 61 | 61 | 61 | 61 |
| L | COUNTY-OTHER | SAN ANTONIO | 5 | 6 | 7 | 7 | 7 | 7 |
| | Sum of Projected W | /ater Demands (acre-feet/year) | 62,333 | 115,059 | 117,984 | 120,805 | 123,511 | 126,617 |

Estimated Historical Water Use and 2012 State Water Plan Dataset: Victoria County Groundwater Conservation District February 6, 2013 Page 6 of 8

Projected Water Supply Needs TWDB 2012 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

| VICT | ORIA COUNTY | | | | A | ll values a | re in acre- | feet/year |
|------|------------------------|-------------------------------|--------|---------|---------|-------------|-------------|-----------|
| RWPG | WUG | WUG Basin | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
| L | COUNTY-OTHER | GUADALUPE | 400 | 196 | 36 | -81 | -193 | -310 |
| L | COUNTY-OTHER | LAVACA | 2 | 1 | 1 | 0 | 0 | 0 |
| L | COUNTY-OTHER | LAVACA-GUADALUPE | 429 | 305 | 205 | 137 | 72 | 0 |
| L | COUNTY-OTHER | SAN ANTONIO | 2 | 1 | 0 | 0 | 0 | 0 |
| L | IRRIGATION | GUADALUPE | 0 | 1 | 1 | 0 | 0 | 0 |
| L | IRRIGATION | LAVACA-GUADALUPE | 0 | 0 | 0 | 0 | 0 | 0 |
| L | LIVESTOCK | GUADALUPE | 0 | 0 | 0 | 0 | 0 | 0 |
| L | LIVESTOCK | LAVACA | 0 | 0 | 0 | 0 | 0 | 0 |
| L | LIVESTOCK | LAVACA-GUADALUPE | 0 | 0 | 0 | 0 | 0 | 0 |
| L | LIVESTOCK | SAN ANTONIO | 0 | 0 | 0 | 0 | 0 | 0 |
| L | MANUFACTURING | GUADALUPE | 419 | -2,969 | -5,921 | -8,860 | -11,489 | -14,441 |
| L | MINING | GUADALUPE | 0 | 0 | 0 | 0 | 0 | 0 |
| L | MINING | LAVACA-GUADALUPE | 1 | 1 | 1 | 1 | 1 | 1 |
| L | STEAM ELECTRIC POWER | GUADALUPE | -1,791 | -50,962 | -50,991 | -51,021 | -51,053 | -51,076 |
| L | VICTORIA | GUADALUPE | 2,689 | 2,048 | 1,597 | 1,267 | 898 | 534 |
| L | VICTORIA | LAVACA-GUADALUPE | 816 | 576 | 403 | 289 | 158 | 17 |
| | Sum of Projected Water | Supply Needs (acre-feet/year) | -1,791 | -53,931 | -56,912 | -59,962 | -62,735 | -65,827 |

Estimated Historical Water Use and 2012 State Water Plan Dataset: Victoria County Groundwater Conservation District February 6, 2013 Page 7 of 8

Projected Water Management Strategies TWDB 2012 State Water Plan Data

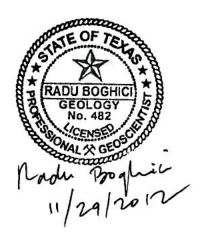
VICTORIA COUNTY

| WUG, Basin (RWPG) | | | | AI | l values ar | e in acre-f | eet/year |
|--|--|---------------------------------------|--------|--------|-------------|---|----------|
| Water Management Strategy | Source Name [Origin] | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
| COUNTY-OTHER, GUADALUPE (L) | | | | | | | |
| GBRA NEW APPROPRIATION (LOWER BASIN) | GUADALUPE RIVER RUN- OF-RIVER NEW APPROPRIATION [CALHOUN] | 0 | 0 | 0 | 81 | 193 | 310 |
| MUNICIPAL WATER CONSERVATION | CONSERVATION [VICTORIA] | 0 | 0 | 0 | 0 | 0 | 32 |
| MANUFACTURING, GUADALUPE (L) | | | | | | | |
| GBRA LOWER BASIN STORAGE | OTHER LOCAL SUPPLY [CALHOUN] | 0 | 0 | 5,921 | 8,860 | 11,489 | 14,441 |
| PURCHASE FROM WWP (GUADALUPE- BLANCO RIVER AUTHORITY) | CANYON LAKE/RESERVOIR [RESERVOIR] | 0 | 2,969 | 0 | 0 | 0 | C |
| STEAM ELECTRIC POWER, GUADALUPE (I | _) | | | | | | |
| GBRA EXELON PROJECT | OTHER LOCAL SUPPLY [CALHOUN] | 0 | 49,126 | 49,126 | 49,126 | 49,126 | 49,126 |
| GBRA LOWER BASIN STORAGE | OTHER LOCAL SUPPLY [CALHOUN] | 0 | 0 | 1,865 | 1,895 | 1,927 | 1,950 |
| PURCHASE FROM WWP (GUADALUPE- BLANCO RIVER AUTHORITY) | Canyon Lake/Reservoir [Reservoir] | 1,791 | 1,836 | 0 | 0 | 0 | 0 |
| VICTORIA, GUADALUPE (L) | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | na kalada karana da taka - Jampi da tak | 4 |
| MUNICIPAL WATER CONSERVATION | CONSERVATION [VICTORIA] | 586 | 1,070 | 1,161 | 1,235 | 1,419 | 1,665 |
| VICTORIA, LAVACA-GUADALUPE (L) | | | | | | | |
| MUNICIPAL WATER CONSERVATION | CONSERVATION [VICTORIA] | 288 | 527 | 572 | 609 | 699 | 820 |
| Sum of Projected Water Management St | rategies (acre-feet/year) | 2,665 | 55,528 | 58,645 | 61,806 | 64,853 | 68,344 |

Estimated Historical Water Use and 2012 State Water Plan Dataset: Victoria County Groundwater Conservation District February 6, 2013 Page 8 of 8 Appendix B. Groundwater Availability Model Run 12-022 provided by Texas Water Development Board

GAM RUN 12-022: VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Radu Boghici Texas Water Development Board Groundwater Resources Division Groundwater Availability Modeling Section (512) 463-5808 November 29, 2012



The seal appearing on this document was authorized by Radu Boghici, P.G. 482 on November 29, 2012.

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GAM RUN 12-022: VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Radu Boghici Texas Water Development Board Groundwater Resources Division Groundwater Availability Modeling Section (512) 463-5808 November 29, 2012

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the executive administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the executive administrator. Information derived from groundwater availability models that shall be included in the groundwater management plan includes:

- the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
- for each aquifer within the district, the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; and
- the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

The purpose of this report is to provide Part 2 of a two-part package of information from the TWDB to Victoria County Groundwater Conservation District management plan to fulfill the requirements noted above. The groundwater management plan for the Victoria County Groundwater Conservation District is due for approval by the executive administrator of the TWDB before December 4 , 2013.

GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 4 of 9

This report discusses the method, assumptions, and results from model runs using the groundwater availability model for the central portion of the Gulf Coast. Table 1 summarizes the groundwater availability model data required by the statute, and Figure 1 shows the area of the model from which the values in the table was extracted. This model run replaces the results of GAM Run 08-32. GAM Run 12-022 meets current standards set after the release of GAM Run 08-32. If after review of the figure, Victoria County Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the Texas Water Development Board immediately. The TWDB has also approved, for planning purposes, alternative models that can have water budget information extracted for the district. These alternative models include the Groundwater Management Area 16 alternative model and the fully penetrating alternative model for the central portion of the Gulf Coast. Please contact the author of this report if a comparison report using these models is desired.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the groundwater availability model for the central portion of the Gulf Coast Aquifer was run for this analysis. Victoria County Groundwater Conservation District Water budgets for 1981 through 1999 were extracted using ZONEBUDGET Version 3.01 (Harbaugh, 2009) The average annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net interaquifer flow (upper), and net inter-aquifer flow (lower) for the portions of the aquifers located within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Gulf Coast Aquifer

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer was used for this analysis. See Chowdhury and others (2004) and Waterstone and others (2003) for assumptions and limitations of the groundwater availability model.
- The model for the central section of the Gulf Coast Aquifer assumes partially penetrating wells in the Evangeline Aquifer due to a lack of data for aquifer properties in the lower section of the aquifer.
- This groundwater availability model includes four layers, which generally correspond to (from top to bottom):

GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 5 of 9

- 1. the Chicot Aquifer,
- 2. the Evangeline Aquifer,
- 3. the Burkeville Confining Unit, and
- 4. the Jasper Aquifer including parts of the Catahoula Formation.
- The mean absolute error (a measure of the difference between simulated and measured water levels) in the entire model for 1999 is 26 feet, which is 4.6 percent of the hydraulic head drop across the model area (Chowdhury and others, 2004).

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the model results for the aquifers located within the district and averaged over the duration of the calibration and verification portion of the model runs in the district, as shown in Table 1. The components of the modified budget shown in Table 1 include:

- Precipitation recharge—The areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.
- Surface water outflow—The total water discharging from the aquifer (outflow) to surface water features such as streams, reservoirs, and drains (springs).
- Flow into and out of district—The lateral flow within the aquifer between the district and adjacent counties.
- Flow between aquifers—The net vertical flow between aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs. "Inflow" to an aquifer from an overlying or underlying aquifer will always equal the "Outflow" from the other aquifer.

The information needed for the District's management plan is summarized in Table 1. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 6 of 9

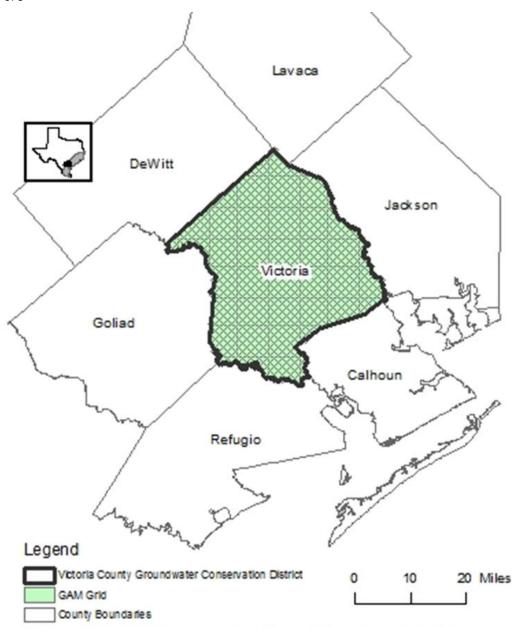
avoid double accounting, a model cell that straddles a political boundary, such as a district or county boundary, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located (Figure 1).

TABLE 1: SUMMARIZED INFORMATION FOR THE GULF COAST AQUIFER THAT IS NEEDED FOR VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT. THESE FLOWS MAY INCLUDE BRACKISH WATERS.

| Management Plan requirement | | |
|--|--------------------|----------------------|
| Estimated annual amount of recharge from precipitation to the district | Gulf Coast Aquifer | 23,441 |
| Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers | Gulf Coast Aquifer | 21,924 ¹⁾ |
| Estimated annual volume of flow into the district within each aquifer in the district | Gulf Coast Aquifer | 18,555 |
| Estimated annual volume of flow out of the district within each aquifer in the district | Gulf Coast Aquifer | 15,283 |
| Estimated net annual volume of flow between each aquifer in the district | Not Applicable | Not Applicable |

¹⁾ discharge amount includes 54 acre-feet per year of water leaving the district to the Gulf of Mexico.

GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 7 of 9



Vintages: god boundary: 08/22/2012; county boundary: 02/02/2011; gifc_c grid: 10/13/2011.

FIGURE 1: AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CENTRAL PORTION OF THE GULF COAST AQUIFER FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE GULF COAST AQUIFER EXTENT WITHIN THE DISTRICT BOUNDARY).

GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 8 of 9

LIMITATIONS

The groundwater model(s) used in completing this analysis is the best available scientific tool that can be used to meet the stated objective(s). To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. In reviewing the use of models in environmental regulatory decision making, the National Research Council (2007) noted:

"Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results."

A key aspect of using the groundwater model to evaluate historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic pumping was placed. Understanding the amount and location of historic pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the aquifer system (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and interaction with streams are specific to particular historic time periods.

Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations related to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historic precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions. GAM Run 12-012: Victoria County Groundwater Conservation District Management Plan November 29, 2012 Page 9 of 9

REFERENCES:

- Chowdhury, Ali. H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999- Model Report, 114 p., <u>http://www.twdb.texas.gov/groundwater/models/gam/glfc_c/TWDB_Recalibr</u> ation_Report.pdf.
- Harbaugh, A. W., 2009, Zonebudget Version 3.01, A computer program for computing subregional water budgets for MODFLOW ground-water flow models, U.S. Geological Survey Groundwater Software.
- National Research Council, 2007, Models in Environmental Regulatory Decision Making Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p.
- Ridgeway, Cynthia K., 2008, GAM Run 08-32: Texas Water Development Board, GAM Run 08-32 Report, 7 p., <u>http://www.twdb.texas.gov/groundwater/docs/GAMruns/GR08-32.pdf</u>.
- Waterstone Environmental Hydrology and Engineering Inc. and Parsons, 2003, Groundwater availability of the Central Gulf Coast Aquifer: Numerical Simulations to 2050, Central Gulf Coast, Texas Contract report to the Texas Water Development Board, 157 p.

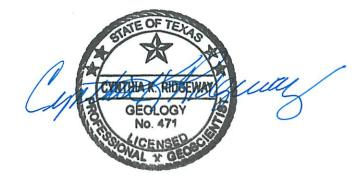
Appendix C. Groundwater Availability Model Run 10-028 MAG

GAM Run 10-028 MAG

by Melissa E. Hill, Ph.D., P.G. and Wade Oliver

Edited and finalized by Shirley Wade to reflect statutory changes effective September 1, 2011

Texas Water Development Board Groundwater Availability Modeling Section (512) 936-0883 November 18, 2011



Cynthia K. Ridgeway, the Manager of the Groundwater Availability Modeling Section and Interim Director of the Groundwater Resources Division, is responsible for oversight of work performed by employees under her direct supervision. The seal appearing on this document was authorized by Cynthia K. Ridgeway, P.G. 471 on November 18, 2011. This page is intentionally left blank.

GAM Run 10-028 MAG Report November 18, 2011 Page 3 of 12

EXECUTIVE SUMMARY:

The modeled available groundwater for the Gulf Coast Aquifer as a result of the desired future conditions adopted by the members of Groundwater Management Area 15 is approximately 488,000 acre-feet per year. This is shown divided by county, regional water planning area, and river basin in Table 1 for use in the regional water planning process. Modeled available groundwater is summarized by county, regional water planning area, river basin, and groundwater conservation district in tables 2 through 5. The estimates were extracted from the simulation documented in Table 7 of Groundwater Availability Model Run 10-008 Addendum, which meets the desired future conditions adopted by Groundwater Management Area 15.

REQUESTOR:

Mr. Neil Hudgins of the Coastal Bend Groundwater Conservation District on behalf of Groundwater Management Area 15

DESCRIPTION OF REQUEST:

In a letter dated July 15th, 2010 and received July 30th, 2010, Mr. Neil Hudgins provided the Texas Water Development Board (TWDB) with the desired future condition (DFC) of the Gulf Coast Aquifer for Groundwater Management Area 15. The desired future condition for the Gulf Coast Aquifer, as described in Resolution 2010-01 and adopted July 14, 2010 by the groundwater conservation districts (GCDs) within Groundwater Management Area 15, are described below:

An average drawdown of the Gulf Coast Aquifer within the [Groundwater Management Area] 15 boundary of 12 feet relative to year 1999 starting conditions in accordance with Table 7 of [Groundwater Availability Model] Run 10-008 Addendum.

In response to receiving the adopted future condition, the Texas Water Development Board estimated the modeled available groundwater for each groundwater conservation district within Groundwater Management Area 15.

METHODS:

Groundwater Management Area 15 lies within the domain of the groundwater availability model for the central portion of the Gulf Coast Aquifer in Texas. The location of Groundwater Management Area 15, the Gulf Coast Aquifer, and the groundwater availability model cells that represent the aquifer are shown in Figure 1. The Gulf Coast Aquifer System is comprised of the Chicot, Evangeline, and Jasper aquifers. The Burkeville Confining Unit lies between the Evangeline and Jasper aquifers (Waterstone Engineering Inc. and others, 2003). The previously completed Groundwater Availability Model (GAM) Run 10-008 (Hutchison, 2010), its addendum GAM Run 10-008 Addendum (Wade, 2010), GAM Run 09-010 (Anaya, 2010), GAM Run 08-56 (Anaya, 2009), GAM Run 07-43 (Donnelly, 2008b), and GAM Run 07-42 (Donnelly, 2008a) document the model results reviewed by members of Groundwater Management Area 15 when developing the desired future condition. The results presented in this GAM Run 10-028 MAG Report November 18, 2011 Page 4 of 12

report are based on the model simulation shown as the "12 foot scenario" shown in Table 7 of GAM Run 10-008 Addendum (Wade, 2010).

PARAMETERS AND ASSUMPTIONS:

The parameters and assumptions for the model run using the groundwater availability model for the central portion of the Gulf Coast Aquifer are described below:

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer was used for this analysis. See Chowdhury and others (2004) and Waterstone Engineering Inc. and others (2003) for assumptions and limitations of the groundwater availability model.
- The model includes four layers representing: the Chicot Aquifer and shallow surface alluvial deposits (layer 1), the Evangeline Aquifer (layer 2), the Burkeville Confining Unit (layer 3), and the Jasper Aquifer including portions of the Catahoula Formation (layer 4) as described in Waterstone Engineering Inc. and others (2003).
- The mean absolute error (a measure of the difference between simulated and measured water levels during model calibration) in the entire model for 1999 is 26 feet, which is 4.8 percent of the hydraulic head drop across the model area (Chowdhury and others, 2004).
- The recharge, evapotranspiration, and streamflows for the model run represent average conditions between 1981 and 1999 in the historical-calibration period of the model (Chowdhury and others, 2004).
- See Wade (2010) for a full description of the methods, assumptions, and results of the groundwater availability model run.

Modeled Available Groundwater and Permitting

As defined in Chapter 36 of the Texas Water Code, "modeled available groundwater" is the estimated average amount of water that may be produced annually to achieve a desired future condition. This is distinct from "managed available groundwater," shown in the draft version of this report dated November 10, 2010, which was a permitting value and accounted for the estimated use of the aquifer exempt from permitting. This change was made to reflect changes in statute by the 82nd Texas Legislature, effective September 1, 2011.

Groundwater conservation districts are required to consider modeled available groundwater, along with several other factors, when issuing permits in order to manage groundwater production to achieve the desired future condition(s). The other factors districts must consider include annual precipitation and production patterns, the estimated amount of pumping exempt from permitting, existing permits, and a reasonable estimate of actual groundwater production under existing permits. The estimated amount of pumping exempt from permitting, which the GAM Run 10-028 MAG Report November 18, 2011 Page 5 of 12

Texas Water Development Board is now required to develop after soliciting input from applicable groundwater conservation districts, will be provided in a separate report

RESULTS:

The modeled available groundwater for the Gulf Coast Aquifer in Groundwater Management Area 15 consistent with the desired future conditions is approximately 488,000 acre-feet per year. This has been divided by county, regional water planning area, and river basin for each decade between 2010 and 2060 for use in the regional water planning process (Table 1).

The modeled available groundwater is also summarized by county (Table 2), regional water planning area (Table 3), river basin (Table 4), and groundwater conservation district (Table 5). Note that some small differences exist between the results shown in Table 2 of this report and Table 7 of Wade (2010) due to a re-assignment of grid cells to be more consistent with previous and known interpretations of political boundaries. The most significant of these adjustments is in Fayette County, where 339 acre-feet per year of pumping from the Gulf Coast Aquifer was previously reported as existing in Groundwater Management Area 12 (Wade, 2010). Since the groundwater management area boundary was originally delineated along the Gulf Coast Aquifer boundary in this area, this pumping is now associated with Groundwater Management Area 15.

In Table 5, the modeled available groundwater among all districts has been calculated both excluding and including areas outside the jurisdiction of a groundwater conservation district. Though a small portion of Corpus Christi Aquifer Storage and Recovery Conservation District falls within Groundwater Management Area 15, results are not shown for this area below because no model cells representing the Gulf Coast Aquifer fall within the district.

LIMITATIONS:

The groundwater model used in developing estimates of modeled available groundwater is the best available scientific tool that can be used to estimate the pumping that will achieve the desired future conditions. Although the groundwater model used in this analysis is the best available scientific tool for this purpose, it, like all models, has limitations. In reviewing the use of models in environmental regulatory decision-making, the National Research Council (2007) noted:

"Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results."

A key aspect of using the groundwater model to develop estimates of modeled available groundwater is the need to make assumptions about the location in the aquifer where future pumping will occur. As actual pumping changes in the future, it will be necessary to evaluate the amount of that pumping as well as its location in the context of the assumptions associated with GAM Run 10-028 MAG Report November 18, 2011 Page 6 of 12

this analysis. Evaluating the amount and location of future pumping is as important as evaluating the changes in groundwater levels, spring flows, and other metrics that describe the condition of the groundwater resources in the area that relate to the adopted desired future condition(s).

Given these limitations, users of this information are cautioned that the modeled available groundwater numbers should not be considered a definitive, permanent description of the amount of groundwater that can be pumped to meet the adopted desired future condition. Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations relating to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor future groundwater pumping as well as whether or not they are achieving their desired future conditions. Because of the limitations of the model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine the modeled available groundwater numbers given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future.

REFERENCES:

- Anaya, R., 2009, GAM Run 08-56: Texas Water Development Board GAM Run 08-56 Report, 63 p.
- Anaya, R., 2010, GAM Run 09-010: Texas Water Development Board GAM Run 09-10 Report, 30 p.
- Chowdhury, A.H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater availability model of the Central Gulf Coast Aquifer System: numerical simulations through 1999 Model Report, Texas Water Development Board, 108 p.
- Donnelly, A.C., 2008a, GAM Run 07-42: Texas Water Development Board GAM Run 07-42 Report, 51 p.
- Donnelly, A.C., 2008b, GAM Run 07-43: Texas Water Development Board GAM Run 07-43 Report, 51 p.
- Hutchison, W.R., 2010, GAM Run 10-008: Texas Water Development Board GAM Run 10-008 Report, 9 p.
- National Research Council, 2007, Models in Environmental Regulatory Decision Making. Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p.
- Wade, S.C., 2010, GAM Run 10-008 Addendum: Texas Water Development Board GAM Run 10-008 Addendum Report, 8 p.
- Waterstone Engineering, Inc., and Parsons, Inc., 2003, Groundwater availability of the central Gulf Coast Aquifer: numerical simulations to 2050 Central Gulf Coast, Texas-Final Report: contract report to the Texas Water Development Board, variously p.

GAM Run 10-028 MAG Report November 18, 2011 Page 7 of 12

Table 1. Modeled available groundwater for the Gulf Coast Aquifer in Groundwater Management Area 15. Results are in acre-feet per year and are summarized by county, regional water planning area, and river basin.

| Corretor | Regional Water | Destu | Year | | | | | | | |
|-----------|-----------------------|--------------------|--------|--------|--------|--------|--------|--------|--|--|
| County | Planning Area | Basin | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | |
| Aransas | Ν | San Antonio-Nueces | 1,862 | 1,862 | 1,862 | 1,862 | 1,862 | 1,862 | | |
| Bee | Ν | Nueces | 30 | 30 | 30 | 30 | 30 | 30 | | |
| Бее | 11 | San Antonio-Nueces | 9,484 | 9,484 | 9,460 | 9,460 | 9,408 | 9,408 | | |
| | | Colorado-Lavaca | 361 | 361 | 361 | 361 | 361 | 361 | | |
| | | Guadalupe | 17 | 17 | 17 | 17 | 17 | 17 | | |
| Calhoun | L | Lavaca | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | | Lavaca-Guadalupe | 2,574 | 2,574 | 2,574 | 2,574 | 2,574 | 2,574 | | |
| | | San Antonio-Nueces | 41 | 41 | 41 | 41 | 41 | 41 | | |
| | | Brazos-Colorado | 10,464 | 10,464 | 10,464 | 10,464 | 10,464 | 10,464 | | |
| Colorado | K | Colorado | 16,058 | 16,058 | 16,058 | 16,058 | 16,058 | 16,058 | | |
| | | Lavaca | 22,431 | 22,431 | 22,431 | 22,431 | 22,431 | 22,431 | | |
| | | Guadalupe | 10,613 | 10,548 | 10,548 | 10,548 | 10,548 | 10,548 | | |
| Dewitt | L | Lavaca | 2,932 | 2,932 | 2,926 | 2,915 | 2,912 | 2,912 | | |
| Dewitt | L | Lavaca-Guadalupe | 417 | 417 | 417 | 417 | 417 | 417 | | |
| | | San Antonio | 739 | 739 | 739 | 739 | 739 | 739 | | |
| | | Brazos | 17 | 17 | 17 | 17 | 17 | 17 | | |
| Fayette | K | Colorado | 6,254 | 6,123 | 5,961 | 5,956 | 5,952 | 5,924 | | |
| | | Lavaca | 2,933 | 2,933 | 2,927 | 2,922 | 2,917 | 2,915 | | |
| | | Guadalupe | 4,417 | 4,417 | 4,417 | 4,417 | 4,417 | 4,417 | | |
| Goliad | L | San Antonio | 6,121 | 6,121 | 6,121 | 6,121 | 6,121 | 6,121 | | |
| | | San Antonio-Nueces | 1,161 | 1,161 | 1,161 | 1,161 | 1,161 | 1,161 | | |
| | | Colorado-Lavaca | 23,615 | 23,615 | 23,615 | 23,615 | 23,615 | 23,615 | | |
| Jackson | Р | Lavaca | 41,927 | 41,927 | 41,927 | 41,927 | 41,927 | 41,927 | | |
| | | Lavaca-Guadalupe | 10,844 | 10,844 | 10,844 | 10,844 | 10,844 | 10,844 | | |
| | | Guadalupe | 12 | 12 | 12 | 12 | 12 | 12 | | |
| Karnes | L | Nueces | 78 | 78 | 78 | 78 | 78 | 78 | | |
| Kannes | L | San Antonio | 3,069 | 3,061 | 3,056 | 3,052 | 3,048 | 2,944 | | |
| | | San Antonio-Nueces | 84 | 84 | 84 | 84 | 84 | 82 | | |
| | | Guadalupe | 41 | 41 | 41 | 41 | 41 | 41 | | |
| Lavaca | Р | Lavaca | 19,944 | 19,944 | 19,944 | 19,944 | 19,937 | 19,932 | | |
| | | Lavaca-Guadalupe | 400 | 400 | 400 | 400 | 400 | 400 | | |
| | | Brazos-Colorado | 23,055 | 23,055 | 23,055 | 23,055 | 23,055 | 23,055 | | |
| Matagorda | К | Colorado | 4,179 | 4,179 | 4,179 | 4,179 | 4,179 | 4,179 | | |
| | | Colorado-Lavaca | 18,662 | 18,662 | 18,662 | 18,662 | 18,662 | 18,662 | | |
| Refugio | T | San Antonio | 1,522 | 1,522 | 1,522 | 1,522 | 1,522 | 1,522 | | |
| Retugio | L | San Antonio-Nueces | 27,806 | 27,806 | 27,806 | 27,806 | 27,806 | 27,806 | | |

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| Table 1. Continued |
|--------------------|
|--------------------|

| Country | Regional Water | Basin | Year | | | | | | | |
|------------|-----------------------|------------------|---------|---------|---------|---------|---------|---------|--|--|
| County | Planning Area | Basin | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | |
| | | Guadalupe | 14,617 | 14,617 | 14,617 | 14,617 | 14,617 | 14,617 | | |
| Victoria L | | Lavaca | 217 | 217 | 217 | 217 | 217 | 217 | | |
| V ICTOI IA | L | Lavaca-Guadalupe | 19,924 | 19,924 | 19,924 | 19,924 | 19,924 | 19,924 | | |
| | | San Antonio | 936 | 936 | 936 | 936 | 936 | 936 | | |
| | | Brazos-Colorado | 34,020 | 34,020 | 34,020 | 34,020 | 34,020 | 34,020 | | |
| | К | Colorado | 31,406 | 31,406 | 31,406 | 31,406 | 31,406 | 31,406 | | |
| | К | Colorado-Lavaca | 11,624 | 11,624 | 11,624 | 11,624 | 11,624 | 11,624 | | |
| Wharton | | Lavaca | 1,690 | 1,690 | 1,690 | 1,690 | 1,690 | 1,690 | | |
| | | Colorado | 441 | 441 | 441 | 441 | 441 | 441 | | |
| | Р | Colorado-Lavaca | 11,549 | 11,549 | 11,549 | 11,549 | 11,549 | 11,549 | | |
| | | Lavaca | 87,763 | 87,763 | 87,763 | 87,763 | 87,763 | 87,763 | | |
| | Total | | 488,353 | 488,149 | 487,946 | 487,921 | 487,846 | 487,705 | | |

Table 2. Modeled available groundwater for the Gulf Coast Aquifer summarized by county in Groundwater Management Area 15. Results are in acre-feet per year.

| Country | Year | | | | | | | | | |
|-----------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| County | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | | | |
| Aransas | 1,862 | 1,862 | 1,862 | 1,862 | 1,862 | 1,862 | | | | |
| Bee | 9,514 | 9,514 | 9,490 | 9,490 | 9,438 | 9,438 | | | | |
| Calhoun | 2,995 | 2,995 | 2,995 | 2,995 | 2,995 | 2,995 | | | | |
| Colorado | 48,953 | 48,953 | 48,953 | 48,953 | 48,953 | 48,953 | | | | |
| Dewitt | 14,701 | 14,636 | 14,630 | 14,619 | 14,616 | 14,616 | | | | |
| Fayette | 9,204 | 9,073 | 8,905 | 8,895 | 8,886 | 8,856 | | | | |
| Goliad | 11,699 | 11,699 | 11,699 | 11,699 | 11,699 | 11,699 | | | | |
| Jackson | 76,386 | 76,386 | 76,386 | 76,386 | 76,386 | 76,386 | | | | |
| Karnes | 3,243 | 3,235 | 3,230 | 3,226 | 3,222 | 3,116 | | | | |
| Lavaca | 20,385 | 20,385 | 20,385 | 20,385 | 20,378 | 20,373 | | | | |
| Matagorda | 45,896 | 45,896 | 45,896 | 45,896 | 45,896 | 45,896 | | | | |
| Refugio | 29,328 | 29,328 | 29,328 | 29,328 | 29,328 | 29,328 | | | | |
| Victoria | 35,694 | 35,694 | 35,694 | 35,694 | 35,694 | 35,694 | | | | |
| Wharton | 178,493 | 178,493 | 178,493 | 178,493 | 178,493 | 178,493 | | | | |
| Total | 488,353 | 488,149 | 487,946 | 487,921 | 487,846 | 487,705 | | | | |

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| Regional Water | Year | | | | | | | |
|-----------------------|---------|---------|---------|---------|---------|---------|--|--|
| Planning Area | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | |
| K | 182,793 | 182,662 | 182,494 | 182,484 | 182,475 | 182,445 | | |
| L | 97,660 | 97,587 | 97,576 | 97,561 | 97,554 | 97,448 | | |
| Ν | 11,376 | 11,376 | 11,352 | 11,352 | 11,300 | 11,300 | | |
| Р | 196,524 | 196,524 | 196,524 | 196,524 | 196,517 | 196,512 | | |
| Total | 488,353 | 488,149 | 487,946 | 487,921 | 487,846 | 487,705 | | |

Table 3. Modeled available groundwater for the Gulf Coast Aquifer summarized by regional water planning area in Groundwater Management Area 15. Results are in acre-feet per year.

Table 4. Modeled available groundwater for the Gulf Coast Aquifer summarized by river basin in Groundwater Management Area 15. Results are in acre-feet per year.

| Basin | Year | | | | | | | | |
|--------------------|---------|---------|---------|---------|---------|---------|--|--|--|
| D as m | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | | | |
| Brazos | 17 | 17 | 17 | 17 | 17 | 17 | | | |
| Brazos-Colorado | 67,539 | 67,539 | 67,539 | 67,539 | 67,539 | 67,539 | | | |
| Colorado | 58,338 | 58,207 | 58,045 | 58,040 | 58,036 | 58,008 | | | |
| Colorado-Lavaca | 65,811 | 65,811 | 65,811 | 65,811 | 65,811 | 65,811 | | | |
| Guadalupe | 29,717 | 29,652 | 29,652 | 29,652 | 29,652 | 29,652 | | | |
| Lavaca | 179,839 | 179,839 | 179,827 | 179,811 | 179,796 | 179,789 | | | |
| Lavaca-Guadalupe | 34,159 | 34,159 | 34,159 | 34,159 | 34,159 | 34,159 | | | |
| Nueces | 108 | 108 | 108 | 108 | 108 | 108 | | | |
| San Antonio | 12,387 | 12,379 | 12,374 | 12,370 | 12,366 | 12,262 | | | |
| San Antonio-Nueces | 40,438 | 40,438 | 40,414 | 40,414 | 40,362 | 40,360 | | | |
| Total | 488,353 | 488,149 | 487,946 | 487,921 | 487,846 | 487,705 | | | |

GAM Run 10-028 MAG Report November 18, 2011 Page 10 of 12

Table 5. Modeled available groundwater for the Gulf Coast Aquifer summarized by groundwater conservation district (GCD) in Groundwater Management Area 15. Results are in acre-feet per year. UWCD refers to Underground Water Conservation District.

| Goundwater Conservation | Year | | | | | | |
|---|---------|---------|---------|---------|---------|---------|--|
| District | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | |
| Bee GCD | 9,504 | 9,504 | 9,480 | 9,480 | 9,428 | 9,428 | |
| Calhoun County GCD* | 2,995 | 2,995 | 2,995 | 2,995 | 2,995 | 2,995 | |
| Coastal Bend GCD | 178,493 | 178,493 | 178,493 | 178,493 | 178,493 | 178,493 | |
| Coastal Plains GCD | 45,896 | 45,896 | 45,896 | 45,896 | 45,896 | 45,896 | |
| Colorado County GCD | 48,953 | 48,953 | 48,953 | 48,953 | 48,953 | 48,953 | |
| Evergreen UWCD | 3,243 | 3,235 | 3,230 | 3,226 | 3,222 | 3,116 | |
| Fayette County GCD | 9,204 | 9,073 | 8,905 | 8,895 | 8,886 | 8,856 | |
| Goliad County GCD | 11,699 | 11,699 | 11,699 | 11,699 | 11,699 | 11,699 | |
| Lavaca County GCD* | 20,385 | 20,385 | 20,385 | 20,385 | 20,378 | 20,373 | |
| Pecan Valley GCD | 14,701 | 14,636 | 14,630 | 14,619 | 14,616 | 14,616 | |
| Refugio GCD | 29,328 | 29,328 | 29,328 | 29,328 | 29,328 | 29,328 | |
| Texana GCD | 76,386 | 76,386 | 76,386 | 76,386 | 76,386 | 76,386 | |
| Victoria County GCD | 35,694 | 35,694 | 35,694 | 35,694 | 35,694 | 35,694 | |
| Total (excluding non-district areas) | 483,486 | 483,282 | 483,079 | 483,054 | 482,979 | 482,838 | |
| No District | 1,872 | 1,872 | 1,872 | 1,872 | 1,872 | 1,872 | |
| Total (including non-district areas) | 488,353 | 488,149 | 487,946 | 487,921 | 487,846 | 487,705 | |

*Lavaca County and Calhoun County GCDs are pending confirmation as of the date of this report

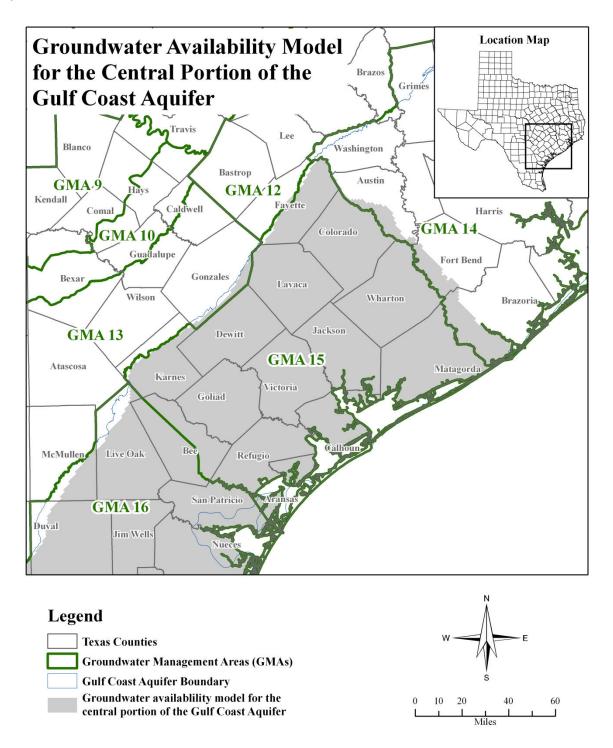


Figure 1. Map showing the areas covered by the groundwater availability model for the central portion of the Gulf Coast Aquifer in Groundwater Management Area 15.

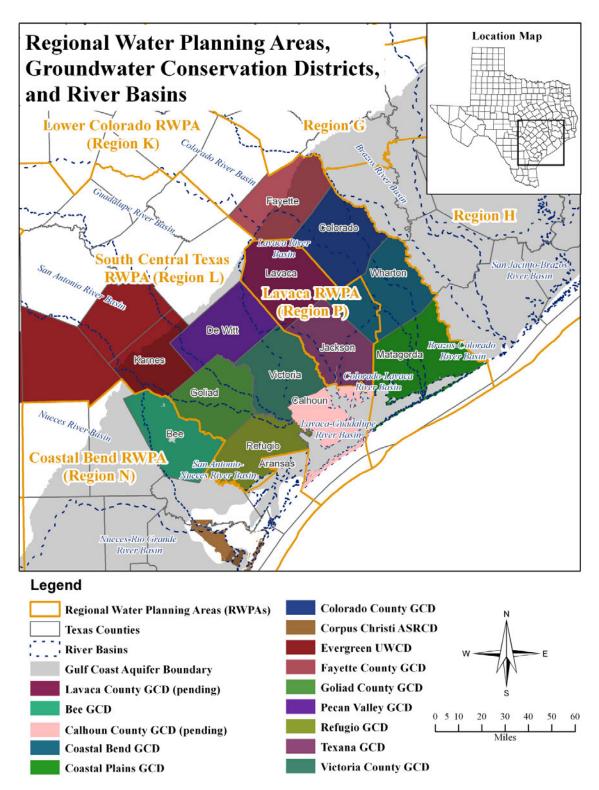


Figure 2. Map showing regional water planning areas, counties, river basins, and groundwater conservation districts (GCD) in and neighboring Groundwater Management Area 15.

Appendix D. Public Notices Regarding Hearings Related to Plan Adoption

Public Hearing Notice

Pursuant to Chapter 36, Texas Water Code, the Victoria County Groundwater Conservation District will conduct a public hearing on the 2013 Victoria County Groundwater Conservation District Management Plan - Proposed at 9:00 A.M. on August 16, 2013 at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Classroom 108A, Victoria, Texas 77901. The hearing is conducted to receive comments and suggestions from the public concerning the proposed management plan.

The proposed management plan was developed using the district's best available data and addresses 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; (5) addressing natural resource issues; (6) addressing drought conditions; (7) addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and (8) addressing the desired future conditions adopted by the district under Section 36.108.

The proposed management plan (1) identifies the performance standards and management objectives under which the district will operate to achieve the management goals; (2) specifies the actions, procedures, performance, and avoidance that are or may be necessary to effect the plan; (3) includes estimates of (A) modeled available groundwater in the district based on the desired future condition established under Section 36.108; (B) the amount of groundwater being used within the district on an annual basis; (C) the annual amount of recharge from precipitation, if any, to the groundwater resources within the district; (D) for each aquifer, the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; (E) the annual volume of flow into and out of the district within each aquifer and between aquifers in the district according to the most recently adopted state water plan; and (G) the projected total demand for water in the district according to the most recently adopted state water plan; and (4) considers the water supply needs and water management strategies included in the adopted state water plan.

A copy of the proposed management plan may be reviewed or copied at the District's office located at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Suite 210, Victoria, Texas 77901. The proposed management plan is available on the District's website at <u>www.vcgcd.org</u>. Questions or comments should be directed to Tim Andruss, General Manager at Victoria County Groundwater Conservation District, 2805 N. Navarro St., Suite 210, Victoria, Texas, 77901 or <u>admin@vcgcd.org</u> or (361) 579 - 6863.

FILED

2013 JUL 26 AM 11: 59

Don Nynk-Dopent

Record Index ID

The State of Texas, County of Victoria

Before me, the undersigned authority, on this day personally appeared Olivia Garza.

Who being by me duly sworn, states on oath that she is the Senior Accounting Clerk of

Victoria Advocate, A newspaper published in Victoria, Victoria County, Texas and

has general circulation in Calhoun, Dewitt, Goliad, Gonzales,

Jackson, Karnes, Lavaca, Matagorda, Refugio, Wharton and Victoria Counties.

The attached printed notice for VCGCD

3 . . .

LEGAL #2013410 was published in the Victoria Advocate on the following dates:

JULY 27, 2013

OLIVIA GARZA RETAIL ACCOUNTING

Sworn to and subscribed before me this ______ day of JULY 2013.

Veronica Notary Public in and for Victoria County, Texas

VERONICA GONZALES Notary Public, State of Texas My Commission Expires October 15, 2013

Public Hearing Notice Pursues¹ to Dublian-36, Teras Water Code, the Victoria County Groundwater Conservation Diltick with conduct a public hearing on the 2013 Victoria Goardy Groundwater Conservation Dihack Management Plan - Proposad at 5:00 A.M. on August 16, 2013 at the Dr. Patte Dodson Health Center, 2806 M. Nature S., Classmoon 108A, Victoria, Teras 27201. The hearing is concenting the proposad sub subcettion form the public concenting the pro-

The proposed management pain was developed using the districts best evideole data and experient goals, is applicable. (1) providing the model efficient use of groundwater; (2) controlling and preventing water of groundwater; (2) controlling and preventing statisticate; (3) eddiresting conjunctive surface the management statistics; addiresting conjunctive surface direction; (n) addressing conception in the approximation proception in the approximation properior in the approximation proception in the approximation proception in the approximation proception processing approximation prodemention processing approximation properior processing approximation properior processing approximation properior processing approximation properior properi

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A copy of the proposed management plan may be reviewed or copied at the District's office located at the Dr. Pattle Dodson Health Center, 2805 N. Nevero St. Surie 210, Victoria, Torasi 77901. The proposed manage-

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Appendix E. Letters Coordinating with Regional Surface Water Management Entities



Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Bee Groundwater Conservation District Attn: Mr. Lonnie Stewart, Manager P.O. Box 682 Beeville, Texas 78104-0682

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7356

RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. Stewart,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincetely,

Tim Andruss General Manager

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| | TTOL | 2-1 | or PO Box No. P. O | 130× 683 | 19104-0682 |

| SENDER: COMPLETE THIS SECTION | COMPLETE THIS SECTION ON DELIVERY |
|--|---|
| Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mallplece, or on the front if space permits. | X Image: Agent X Image: Agent B. Received by (Printed Name) C. Date of Delivery |
| 1. Article Addressed to: Bue Grandwrte Consew. Destud Attn: M. Lonnie Stewart, Mgr. P. O. Brx 682 | D. Is delivery address different from frem 1? Yes If YES, enter delivery address below: No |
| P. 0. Box 682 Burille TX 78104-0682 | 3. Service Type Q Certilled Mail □ Express Mail □ Registered □ Return Receipt for Merchandise □ Insured Mail □ C.O.D. 4. Restricted Delivery? (Extra Fee) □ Yes |
| 2. Article Number 7011 1 (Transfer from service label) | 570 0000 8281 7356 |



Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Calhoun Co. Groundwater Conservation District Attn: Mr. Mike Anzaldua Calhoun County Commissioner's Court 211 S. Ann St., Ste 301 Port Lavaca, TX 77979

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7363

RE: Victoria County Groundwater Conservation District Management Plan

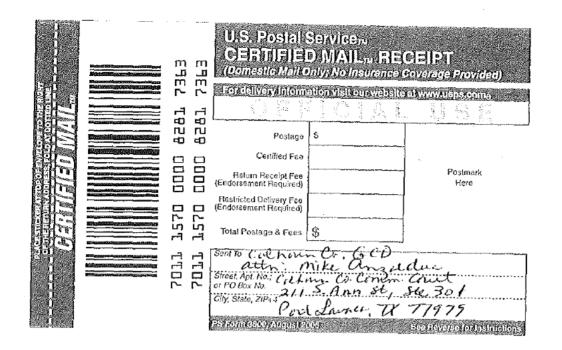
Dear Mr. Anzaldua,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss General Manager



| Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse | A. Signature X | Agent Addressee |
|---|--|------------------|
| so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. | | Date of Delivery |
| 1. Article Addressed to: Calform Co. GCD Atta: Thike anzalolica Calforn Co. Comm. Court Calforn Co. Comm. Court 211 S. ann St., Ste 301 | D. Is delivery address different from item 1? If YES, enter delivery address below: | I No |
| 211 So. ann St., Ste 30/ | 3. Service Type | |
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Directors:

Mark Meek President

Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Coastal Bend Groundwater Conservation District Mr. Neil Hudgins, Manager P.O. Box 341 Wharton, Texas 77488

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7370

RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. Hudgins,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager

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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Coastal Plains Groundwater Conservation District Mr. Neil Hudgins, Manager 2200 7th St., #303 Bay City, Texas 77414

Via: Certified Mail RRR No.: 7011 1570 0000 8281 1576

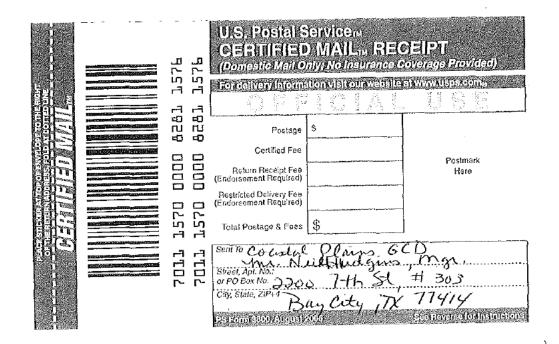
RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. Hudgins,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



| Complete items 1, 2, and 3. Also complete item 4 If Restricted Delivery Is desired. Print your name and address on the reverse | A. Signature X | Agent |
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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Colorado County Groundwater Conservation District Mr. Jim Brasher, General Manager P.O. Box 667 Columbus, Texas 78934

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7387

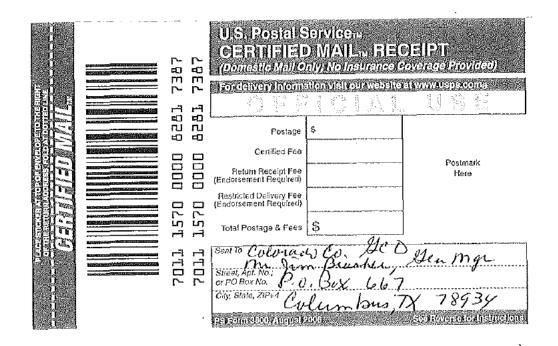
RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. Brasher,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzet Secretary Thurman Clements Kenneth Eller

September 11, 2013

Corpus Christi Aquifer Storage & Recovery Conservation District City of Corpus Christi 1201 Leopard Street Corpus Christi, Texas 78401-2825

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7400

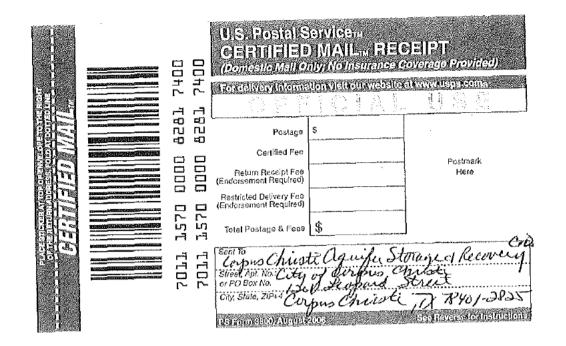
RE: Victoria County Groundwater Conservation District Management Plan

Dear Corpus Christi Aquifer Storage & Recovery Conservation District,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Evergreen Underground Water Conservation District 110 Wyoming Boulevard Pleasanton, Texas 78064

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7417

RE: Victoria County Groundwater Conservation District Management Plan

Dear Evergreen Underground Water Conservation District,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager

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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Fayette County Groundwater Conservation District Mr. David A. Van Dresar, General Manager 255 Svoboda Lane, Room 115 LaGrange, Texas 78945

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7424

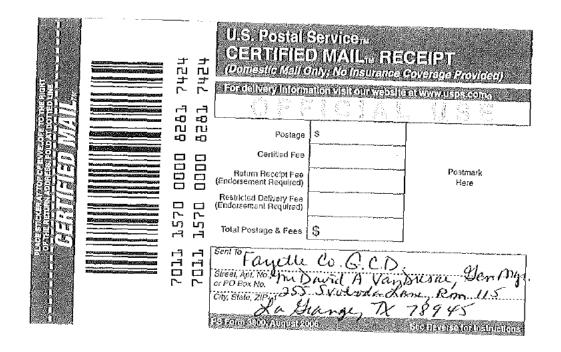
RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. Van Dresar,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



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| 2. Article Number | 570 0000 8281 7424 | |

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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Goliad County Groundwater Conservation District Ms. Barbara Smith, Manager P.O. Box 562 Goliad, Texas 77963

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7431

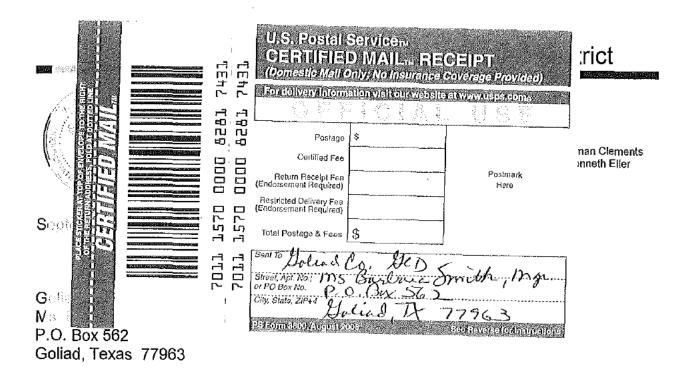
RE: Victoria County Groundwater Conservation District Management Plan

Dear Ms. Smith,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



Via: Certified Mail RRR No.: 7011 1570 0000 8281 7431

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Tim Andruss General Manager



Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Lavaca County Groundwater Conservation District Mr. Larry Svetlik c/o Judge Tramer J. Woytek P.O. Box 243 Hallettsville, Texas 77964

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7448

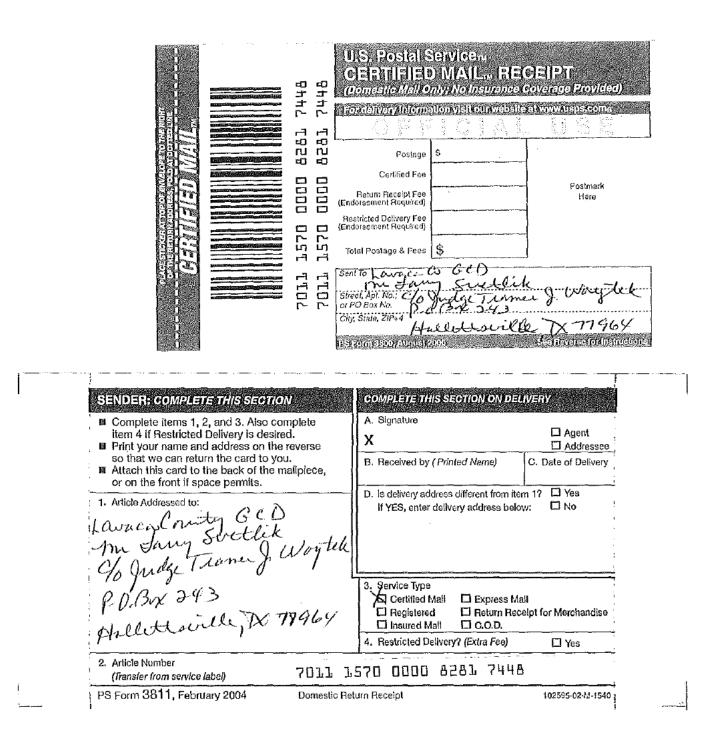
RE: Victoria County Groundwater Conservation District Management Plan

Dear Svetlik,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager





Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Pecan Valley Groundwater Conservation District Ms. Charlotte Krause, General Manager 107 N. Gonzales Cuero, Texas 77954

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7455

RE: Victoria County Groundwater Conservation District Management Plan

Dear Ms. Krause,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager

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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Refugio Groundwater Conservation District Ms. Shanna Niemann, General Manager P.O. Box 116 Refugio, Texas 78377

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7462

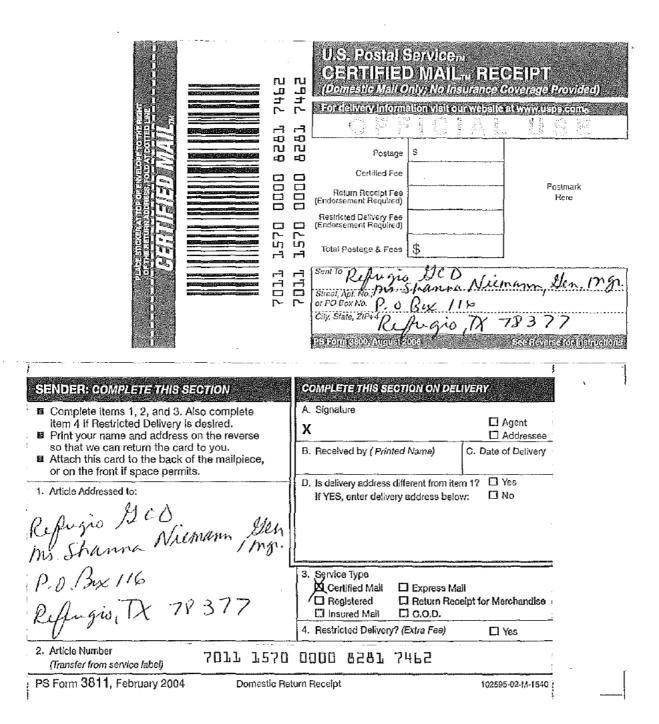
RE: Victoria County Groundwater Conservation District Management Plan

Dear Ms. Niemann,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager





Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Texana Groundwater Conservation District P.O. Box 1098 Edna, Texas 77957

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7479

RE: Victoria County Groundwater Conservation District Management Plan

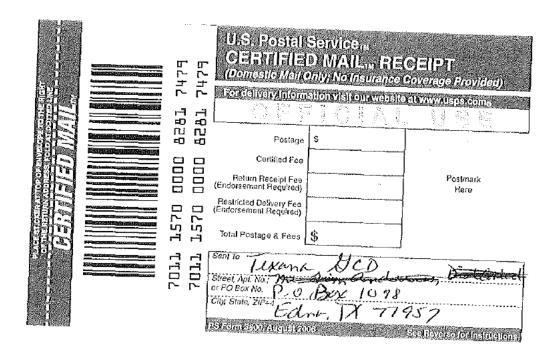
Dear Texana Groundwater Conservation District,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss

General Manager



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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

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

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7486

RE: Victoria County Groundwater Conservation District Management Plan

Dear Texas Water Development Board,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager

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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dielzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

Guadalupe Blanco River Authority Mr. W.E. West, Jr., General Manager 933 East Court Street Sequin, Texas 78155

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7493

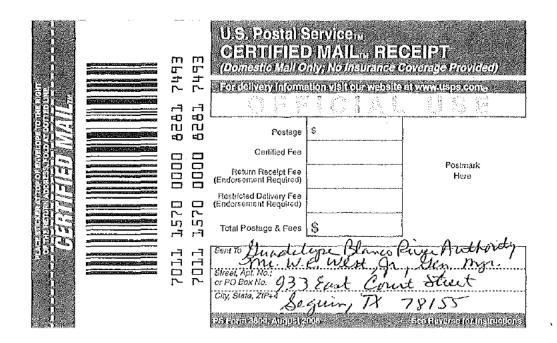
RE: Victoria County Groundwater Conservation District Management Plan

Dear Mr. West,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager



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Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

September 11, 2013

San Antonio River Authority Ms. Suzanne B. Scott, General Manager 100 E. Guenther Street San Antonio, Texas 78204

Via: Certified Mail RRR No.: 7011 1570 0000 8281 7509

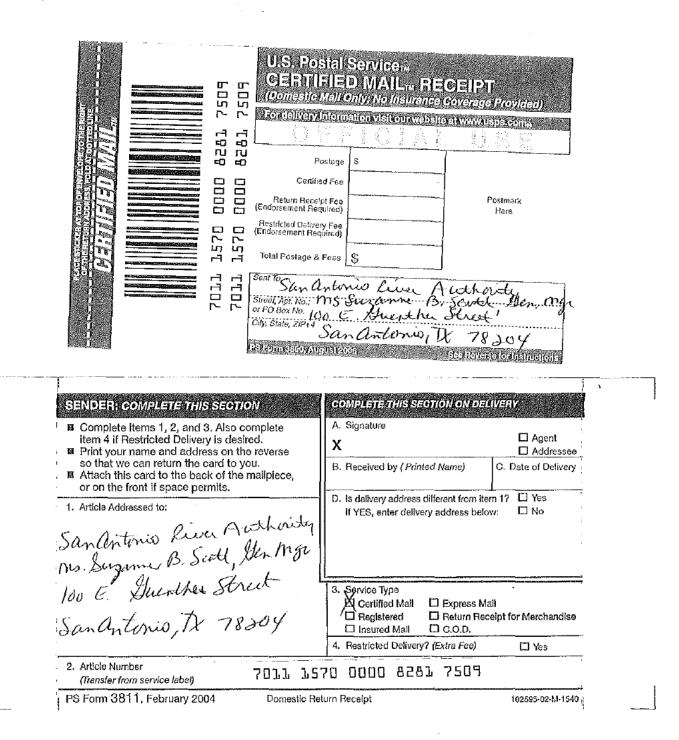
RE: Victoria County Groundwater Conservation District Management Plan

Dear Ms. Scott,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager





Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzet Secretary Thurman Clements Kenneth Eller

September 11, 2013

South Central Texas Regional Water Planning Group Ms. Erin Newberry c/o San Antonio River Authority P.O. Box 839980 San Antonio, Texas 78283

Via: Certified Mail RRR No.: 7011 1570 0000 8281 1569

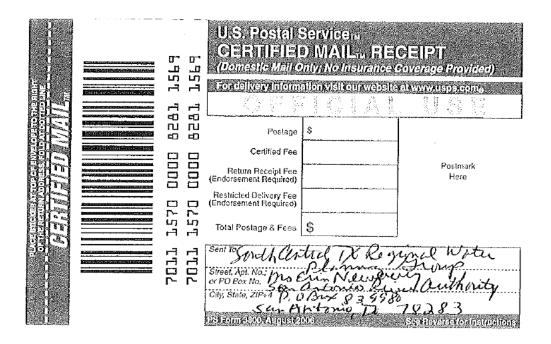
RE: Victoria County Groundwater Conservation District Management Plan

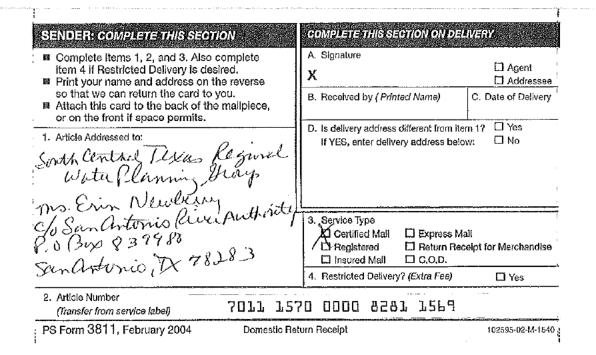
Dear Ms. Newberry,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Tim Andruss General Manager





Appendix F.Victoria County Groundwater Conservation District Board of
Director Resolution Adopting Management Plan

RESOLUTION Resolution Number: 2013-09-06-01 Resolution Adopting the Victoria County Groundwater Conservation District Management Plan

WHEREAS on July 27, 2013, a Notice of Hearing was published in the Victoria Advocate newspaper regarding a public hearing on the adoption of the Victoria County Groundwater Conservation District Management Plan; and

WHEREAS on August 16, 2013, the Victoria County Groundwater Conservation District Board of Directors, with a quorum being present, conducted a public hearing regarding the adoption of the Victoria County Groundwater Conservation District Management Plan; and

WHEREAS, the Revised Victoria County Groundwater Conservation District Management Plan has been developed in coordination with surface water management entities and other interested parties;

NOW THEREFORE BE IT RESOLVED that the Victoria County Groundwater Conservation District Management Plan is ADOPTED as described in the Victoria County Groundwater Conservation District Management Plan attached hereto and made part hereof for all purposes and that said Management Plan shall be submitted to the Executive Administrator of the Texas Water Development Board for review and approval by the General Manager with all necessary documentation.

ADOPTED by a vote of _____ 5 ayes and O nays on this 6th day of er , 2013. President

ricangan

I, the undersigned, do hereby certify that the above Resolution was adopted by the Board of Directors of the Victoria County Groundwater Conservation District on the <u>leth</u> day of <u>september</u>, 2013.

cretary, Board of Director

Appendix G. Minutes of Victoria County Groundwater Conservation District Board of Director Meeting related to the public hearings for and adoption of the Management Plan



Directors:

Mark Meek President Jerry Hroch Vice-President Barbara Dietzel Secretary Thurman Clements Kenneth Eller

THE STATE OF TEXAS VICTORIA COUNTY

The Victoria County Groundwater Conservation District Board of Directors' Meeting and Permit Hearings convened at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Room 108, Victoria, Victoria County, Texas, 77901 on August 16, 2013 at 9:00 AM.

Meeting Attendance:

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|------------------|-------------------------------------|---------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Present |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Present |
| Precinct 4: | Mr. Mark Meek, President | Present |
| At Large: | Mr. Kenneth Eller, Director | Present |
| General Manager: | Mr. Timothy Andruss | Present |
| Legal Counsel: | Mr. James Allison | Present |

Agenda Items -

1. Call to order and welcome guests.

Meeting Discussion: Mr. Meek called the meeting to order at 9:00 AM. The following guests were present: Mr. David Oeltjen, Mr. Emil Zmeskal, Mr. Scheumack, Mr. Scott Henley, Mr. Curtis Reece, Mr. Tim Rampey, Mr. Bill Richter, Mr. Richard Fritz, Mr. Jerry James, Mr. James Dodson, Mr. Russell Doerr, and Mr. Kevin Janak.

Board Action: None.

2. Public Comment.

Meeting Discussion: Mr. Jerry James made public comment, with updates on drought and groundwater/surface water exchange.

Board Action: None.

3. Consent Agenda (Related documents delivered to board members prior to the meeting.)

Meeting Discussion: Mr. Andruss explained that the supporting information and records related to the consent agenda were sent to the Board of Directors prior to the meeting.

Board Action: Mr. Eller moved to (1) accept and approve the meeting minutes for the meeting held on July 19, 2013, (2) accept and approve the financial reports for July 2013, (3) authorize the general manager to pay the following invoices from the appropriate accounts in a cumulative amount of \$16,345.95:

- 1. L143000667 Databank IMX, LLC: \$3,456.00;
- 2. 11489 Allison, Bass and Associates, LLP: \$12,169.95
- 3. 3161-T19-7, 3161-T20-10 Pastor, Behling and Wheeler, LLC: \$720

Mr. Clements seconded the motion. The following vote was made:

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent | | |
|--|-------------------------------------|--------|--|--|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye | | |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye | | |
| Precinct 4: | Mr. Mark Meek, President | Aye | | |
| At Large: | Mr. Kenneth Eller, Director | Aye | | |
| With four (4) ayes and zero (0) nays, the motion passed. | | | | |

4. Permit Hearing and consideration of, including action on, permit applications - ADW-20130625-04, AOW-20130625-05; Armadillo Oilfield Services, LLC; B Kraatz.

Permit Hearing and consideration of, including action on, permit applications - Mr. Brandon R. Kraatz for Armadillo Oilfield Services, LLC. seeks approval of drilling and operating permits requested under applications ADW-20130625-04 and AOW-20130625-05 for a nongrandfathered well for commercial uses located on a 4.0 acre tract of land located near the intersection of NW Zac Lentz Pkwy. and FM 1685, Victoria County, Texas. The requested production amount is 2.0 acre-feet per year.

Meeting Discussion: The applicants were not present. There was no discussion or consideration of this application.

Board Action: None.

5. Permit Hearing and consideration of, including action on, permit applications - AVW-20130522-04, AVW-20130522-06; Experience Excellence; G Dry.

Permit Hearing and consideration of, including action on, permit applications - Mr. Glen A. Dry for Experience Excellence seeks approval of validation permits requested under applications AVW-20130522-04 and AVW-20130522-06 for grandfathered wells GW-000546 & GW-000547 for commercial recreational facility uses located on a 26.19 acre tract of land located near the intersection of U.S. Hwy. 87 and Riverwood Drive, Victoria County, Texas. The requested production amount is 1.6 acre-feet per year and 14.7 acre-feet per year respectively.

Meeting Discussion: Mr. Andruss explained that Mr. Glen A. Dry of the Experience Excellence had submitted administratively complete applications to register and validate historic use for two water wells used for commercial recreational facility purposes. The wells had been assigned registration numbers GW-000546 and GW-000547. The applications include evidence supporting the requested historic use.

Mr. Meek opened the Permit Hearing at 10:52 AM. Public Comment – None.

Board Action: Mr. Eller moved to close the Permit Hearing at 10:53 AM. Mr. Clements seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|---------------|--|--------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) | ayes and zero (0) nays, the motion passed. | 2 |
| | | |

Board Action: Mr. Eller moved to authorize the general manager 1) to issue a validation permit for 1.6 acre-feet per year for well GW-000546 for commercial recreational facility purposes in accordance with District Rules and 2) to issue a validation permit for 14.7 acre-feet per year for well GW-000547 for commercial recreational facility purposes in accordance with District Rules.

Mr. Clements seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent | | |
|--|-------------------------------------|--------|--|--|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye | | |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye | | |
| Precinct 4: | Mr. Mark Meek, President | Aye | | |
| At Large: | Mr. Kenneth Eller, Director | Aye | | |
| With four (4) ayes and zero (0) nays, the motion passed. | | | | |

6. Permit Hearing and consideration of, including action on, permit applications - ADW-20130729-02, AOW-20130729-03; C Reece.

Permit Hearing and consideration of, including action on, permit applications - Mr. Curtis L. Reece, Jr. seeks approval of drilling and operating permits requested under applications ADW-20130729-02 and AOW-20130729-03 for a non-grandfathered well for livestock and wildlife uses located on a 125.54 acre tract of land located near the intersection of U.S. Hwy. 59 and Treasure Oaks Road, Victoria County, Texas. The requested production amount is 62.75 acre-feet per year. **Meeting Discussion:** Mr. Andruss explained that the annual volume of groundwater requested of the drilling and operating permit applications satisfied the District's production limitations established under VCGCD Rule 4.1.2 (1/2 ac-ft/yr per acre owned or controlled).

Mr. Andruss explained that the maximum rate of withdrawal requested, by the applicant in the application and the subsequent email, would satisfy the spacing limitations established under VCGCD Rule 4.2 (50' property line offset, 1' of spacing per 1 GPM from the nearest registered well) if the new well is drilled in a location that is at least 80 feet from the nearest property line.

Mr. Meek opened the Permit Hearing at 9:16 AM. Public Comment: None.

Board Action: Mr. Eller moved to close the Permit Hearing at 9:17 AM. Mr. Clements seconded the motion. The following vote was made. Precinct 1: Mr. Jerry Hroch, Vice President Absent Precinct 2: Mr. Thurman Clements, Jr., Director Ave Mrs. Barbara Dietzel, Secretary Precinct 3: Ave Mr. Mark Meek, President Precinct 4: Aye Mr. Kenneth Eller, Director At Large: Ave

With four (4) ayes and zero (0) nays, the motion passed.

Board Action: Mr. Eller moved to authorize the general manager to (1) issue a drilling permit to Mr. Curtis L. Reece, Jr. under application ADW-20130729-02 with the condition that the new well shall not be located within 80 feet of the nearest property line, and (2) issue an operating permit to Mr. Curtis L. Reece, Jr. under application AOW-20130729-03 upon well completion and registration with the following conditions in accordance with the District Rules:

- 1. Authorized Purpose of Use: livestock and wildlife use;
- 2. Maximum Rate of Production per Minute: 80 GPM;
- 3. Maximum Rate of Production per Day: 86,400 GPD;
- 4. Maximum Rate of Production per Year: 62.75 ac-ft/yr;
- 5. All existing and future wells will be permitted such that the total annual groundwater production rate will not exceed the 1/2 acre foot per acre owned or controlled limitation;
- 6. The well site shall be accessible to District representatives for the purposes of collecting groundwater samples from the permitted well and the permit holder agrees to cooperate fully in any reasonable efforts to collect groundwater samples from the well by the District representatives;
- 7. Groundwater production from the new well shall be reported quarterly to the District using the District's groundwater production report; and
- 8. Groundwater production from the new well is prohibited until the approved production permit is fully executed.

Mr. Clements seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | | Absent | | |
|--|-------------------------------------|---|--------|--|--|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | | Aye | | |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | | Aye | | |
| Precinct 4: | Mr. Mark Meek, President | | Aye | | |
| At Large: Mr. K | Aye | - | | | |
| With four (4) ayes and zero (0) nays, the motion passed. | | | | | |

7. Consideration of and possible action on an enforcement policy.

Meeting Discussion: Mr. Andruss explained that the District had never adopted an Enforcement Policy that specified how to process complaints and reports of violations. To date, when the District had received complaints or reports of violations, the District had investigated the situation. In those instances when there appeared to be violation of the rules of the District, the District had worked with the involved parties to bring the situation into compliance by obtaining the necessary permits or resolve the underlying issue. However, it is apparent that in some instances, the District will not be able to rectify the situation without the District conducting enforcement proceedings.

Mr. Andruss explained that in order to ensure that enforcement proceedings are applied consistently, the Board should consider the adoption of an enforcement policy. In addition, a policy would outline the potential penalties, if any, that are associated with various violations.

Mr. Andruss provided a draft policy to the Board for review.

Board Action: None.

8. Consideration of and possible action on complaint CID-20130304-01 and the alleged violations of state statutes and District rules contained in the complaint.

Meeting Discussion: Mr. Andruss explained the complaint CID-20130304-01 and the alleged violations of state statutes and District rules contained in the complaint.

Board Action: Mr. Clements moved to instruct the General Manager to send a certified letter to Mr. Thieme, explaining the required actions to achieve compliance with the District rules.

| Mr. Eller seconded the motion. The following vote was made. | | | | |
|---|-------------------------------------|--------|--|--|
| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent | | |
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye | | |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye | | |
| Precinct 4: | Mr. Mark Meek, President | Aye | | |
| At Large: | Mr. Kenneth Eller, Director | Aye | | |

With four (4) ayes and zero (0) nays, the motion passed

9. Consideration of and possible action on complaint CID-20130717-01 and the alleged violations of state statutes and District rules contained in the complaint.

Meeting Discussion: Mr. Andruss explained the complaint CID-20130717-01 and the alleged violations of state statutes and District rules contained in the complaint.

Board Action: None.

10. Consideration of and possible action on FY12-13 VCGCD Management Plan Goals and Objectives.

Meeting Discussion: Mr. Andruss explained that below is a summary of the District's performance in FY12-13 in relation to the existing management plan.

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the changes related to water well registration including the number of new and existing wells registered.

Application Tracking and Well Registration Certificates

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the changes related to water well permitting including the number of new applications and the disposition of the applications.

Application Tracking and Permitting Information

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the findings of the inspection activities including information regarding the number of wells that require improvement to prevent waste and/or prevent groundwater contamination.

- Water well inspection reports on monitored wells (To be completed in September 2013)
- Complaint investigation summary

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the educational activities including the number of educational materials developed and delivered to local schools, the number of cooperative educational contributions and grants, the number of public speaking events and presentations, the number of community events participated in, and the number of educational publications.

- WaterWise Program
- Victoria West High School Presentations

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the attendees, dates, and the number of meetings attended.

 Attendance demonstrated in meeting minutes and travel documentation related to Region L

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the number of and nature of communications with GBRA, SARA, City of Victoria, and Victoria County Navigation District.

- Invite entities to attend at the September 20, 2013 meeting
- Discuss and Consider Conjunctive Use Issues at the September 20, 2012 meeting

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the monitoring activities including the number of wells monitored and the year to year change of water level.

Water level monitoring during FY12-13.

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the monitoring activities including the number of wells monitored and the year to year change of water quality.

- Water quality field parameter monitoring during FY12-13.
- Re-sample water wells located near the COV landfill

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the monthly drought information including Palmer Drought Severity Index (PDSI) maps and the Drought Preparedness Council Situation Report period updates posted on the Texas Water Information Network website (<u>www.txwin.net</u>). Additionally, the number of weeks and/or months that the District experienced drought based on the PDSI will be reported in the annual report.

Monthly Drought Monitoring Maps

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the activities directly related to groundwater conservation including educational materials developed and delivered to local schools, cooperative educational contributions and grants, public speaking events and presentations, community event participation, and educational publications. Additionally, the number of activities participated in and the number of educational materials developed or disseminated each year will be reported in the annual report.

- WaterWise Program
- Farm and Ranch Show Booth

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the activities directly related to promoting rainwater harvesting including the development and dissemination of educational materials via the district website and other educational events. Additionally, the number of activities participated in and the number of educational materials developed or disseminated each year will be reported in the annual report.

- Develop an educational article addressing/promoting rainwater harvesting. (To be completed in September 2013)
- Post to VCGCD Website

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the activities directly related to promoting recharge enhancement including the development and dissemination of educational materials via the district website and other educational events. Additionally, the number of activities participated in and the number of educational materials developed or disseminated each year will be reported in the annual report.

- Develop an educational article promoting recharge enhancement. (To be completed in September 2013)
- Post to VCGCD Website

Performance Standard: Each year, beginning in 2008, the District will summarize within the annual report the activities directly related to promoting brush control including the development and dissemination of educational materials via the district website and other educational events. Additionally, the number of activities participated in and the number of educational materials developed or disseminated each year will be reported in the annual report.

- Develop an informational/educational article promoting brush control. (To be completed in September 2013)
- Post to VCGCD Website

11. Public hearing on the 2013 Victoria County Groundwater Conservation District Management Plan- Proposed.

Meeting Discussion: Mr. Andruss explained that on July 19, 2013, the Board designated the draft management plan as the 2013 Victoria County Groundwater Conservation District Management Plan- Proposed. On July 26, 2013, the District published notice that a public hearing would be held on August 16, 2013 regarding the proposed management plan.

Mr. Andruss explained that on August 7, 2013, the 2013 Victoria County Groundwater Conservation District Management Plan- Proposed was provided to the Victoria County Groundwater Advisory Committee and notified of the upcoming hearing regarding the proposed management plan.

Mr. Andruss explained that as of August 15, 2013, the District had not received any comments regarding the propose management plan.

Mr. Meek opened the Public Hearing at 10:59 AM. Public Comment: Mr. James Dodson and Mr. Jerry James made public comment.

Board Action: Mr. Eller moved to close the Public Hearing at 11:14 AM. Mr. Clements seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|--|-------------------------------------|--------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) ayes and zero (0) nays, the motion passed. | | |

12. Consideration of and possible action on 2013 Victoria County Groundwater Conservation District Management Plan- Proposed.

Meeting Discussion: None.

Board Action: Mr. Clements moved to adopt the 2013 Victoria County Groundwater Conservation District Management Plan- Proposed as revised to include "In addition, the DISTRICT recognizes that the landowners have an ownership right in the groundwater resources associated with their properties and are the primary stewards of these resources," the 2013 Victoria County Groundwater Conservation District Management Plan- Adopted and authorize the general manager to forward the adopted management plan to Texas Water Development Board, South Central Texas Regional Water Planning Group (Region L), and the Groundwater Conservation Districts located in Groundwater Management Area 15, and any other notifications that may be required by law. Mr. Eller seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|---------------|--|--------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) | ayes and zero (0) nays, the motion passed. | |

13. Consideration of and possible action on Fiscal Year 2013 - 2014 Budget Request.

2805 N. Navarro St. Suite 210, Victoria, TX 77901, Phone (361) 579-6863, FAX (361) 579-0041 VCGCD Minutes –August 16, 2013 Page 9 of 14 **Meeting Discussion:** Mr. Andruss explained that the FY13-14 draft budget request, associated compensation request, and the 2013 tax rate option chart were included in the packet.

Mr. Andruss explained that for the purposes of drafting the budget document, a 2013 tax rate of 0.008780 was utilized which would generate an approximate 5% additional <u>tax levy</u> over the actual tax levy for 2012 and exceed the budgeted expenses. While this tax rate would generate additional tax revenue, the rate is also a reduction compared to the 2012 tax rate of 0.00915.

Mr. Andruss explained that in addition, he had also proposed an increase to the District's contribution to health benefits from \$355/mo. to \$375/mo. Regarding consultation and research, he had concluded/estimated that it will not be necessary to deplete the District's reserve funds and the costs associated with those studies/investigations the Board would likely initiate in FY13-14 could be paid from the 2013 tax revenue.

Board Action: see agenda item #15.

14. Consideration of and possible action on 2013 proposed tax rate.

Meeting Discussion: Mr. Andruss explained that the vote associated with establishing the proposed tax rate must be a recorded vote.

Board Action: see agenda item #15.

15. Consideration of and possible action on schedule of public hearings regarding the proposed tax rate.

Meeting Discussion: Mr. Andruss explained that below is the most practical schedule for completing the budget process:

8/16/2013

- 1. Adopt Proposed Tax Rate;
- 2. Adopt Budget Schedule:
 - 1. 1st Tax Rate Hearing: 8/30 at 5:30 PM
 - 2. 2nd Tax Rate Hearing: 9/6 at 9:00 AM
 - Consideration of Proposed Budget and Proposed Tax Rate: 9/20 at 9:00 AM.

8/19/2013 by 10:00 AM

- 1. Submit Effective Tax Rate Notice to Newspaper;
- 2. Submit Notice of Public Hearing on Tax Increase to Newspaper;

2805 N. Navarro St. Suite 210, Victoria, TX 77901, Phone (361) 579-6863, FAX (361) 579-0041 VCGCD Minutes –August 16, 2013 Page 10 of 14

- 3. Post Tax Rate Notice to Website;
- 4. Post Hearing Notice to Website.

8/30/2013 - Pattie Dodson Health Center, Rm 108 at 5:30 PM

- 1. 1st Tax Rate Hearing
- 9/6/2013 Pattie Dodson Health Center, Rm 108 at 9:00 AM
 - 1. 2nd Tax Rate Hearing

9/9/2013 by 10:00 AM

- 1. Submit Notice of Tax Revenue Increase to the Newspaper;
- 2. Post Notice of Tax Revenue Increase to Website.
- 9/20/13 Pattie Dodson Health Center, Rm 108 at 9:00 AM
 - 1. Hearing on Proposed Budget
 - 2. Consideration of Proposed Budget
 - 3. Consideration of Proposed Tax Rate
 - 4. Consideration of Certified Appraisal Roll
 - 5. Consideration of TCDRS Participation
 - 6. Consideration of TML-IEBP Participation

Board Action: Mr. Clements 1) moved to designate the Draft FY13-14 Annual Budget Proposal as the FY13-14 Annual Budget – Proposed; 2) moved to establish a proposed tax rate of \$0.00878 / \$100 of value; 3) moved to approve the meeting and hearing schedule as proposed and authorize the general manager to make all necessary notices. Mr. Eller seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|--|-------------------------------------|--------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) ayes and zero (0) nays, the motion passed. | | |

16. Consideration of and possible action on technical review of injection well applications.

Meeting Discussion: Mr. Andruss explained that PBW continued to monitor injection wells within Victoria County. The District had several protests of injection well applications registered with the Railroad Commission of Texas.

| Board Actio | n: Mr. Clements moved to protest the inject | ction well in Refugio |
|---|---|-----------------------|
| County, near the Victoria County line and co-ordinate with Refugio GCD. | | |
| Mr. Eller seconded the motion. The following vote was made. | | |
| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) ayes and zero (0) nays, the motion passed. | | |

17. Consideration of and possible action on the use of county-wide election polling places for VCGCD elections.

Meeting Discussion: Mr. Andruss explained the issue of the use of county-wide election polling places for elections.

Board Action: Mr. Eller moved to instruct the General Manager to send a letter of support by VCGCD for county-wide election polling places, to Mr. George Matthews, Victoria County Elections Administrator.

Mr. Clements seconded the motion. The following vote was made.

| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
|--|-------------------------------------|--------|
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) ayes and zero (0) nays, the motion passed. | | |

18. General Manager's Report.

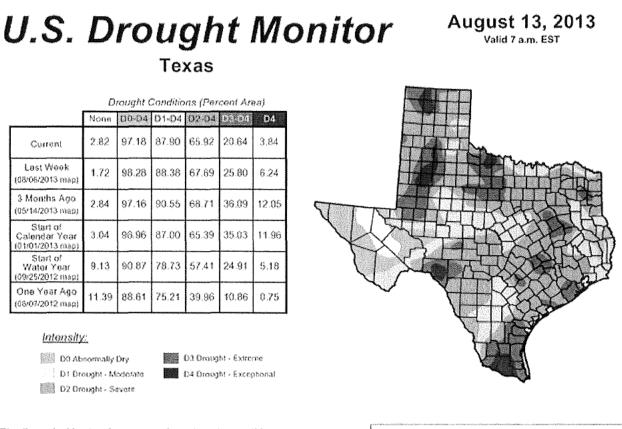
Regional Water Planning: None.

Victoria County Groundwater Advisory Committee Update:

The committee held a meeting on August 8, 2013 to consider two matters: Dr. Uddameri's study related to the concept of a "conservation allowance program" and the 2013 Victoria County Groundwater Conservation District Management Plan - Proposed.

District Registration and Permitting Update:

Aquifer Monitoring Update:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

Released Thursday, August 15, 2013 Michael Brewer, National Climatic Data Center, NOAA

USDA

Complaints and Investigations: See agenda items 8 and 9 of the VCGCD Meeting for August 16, 2013.

Office Administration:

Calendar of Events:

- VCGCD Board Meeting 1st 2013 Tax Rate Hearing: August 30, 2013
- VCGCD Board Meeting 2nd 2013 Tax Rate Hearing and VCGCD Draft Rules Workshop: September 6, 2013
- VCGAC Committee Meeting: September 11, 2013
- VCGCD Board Meeting: September 20, 2013

Future Agenda Items: Enforcement Policy, FY13-14 Budget, 2013 Tax Rate, Draft Rules.

19. Adjourn.

Meeting Discussion: None

Board Action:

| Mr. Eller mov | ed to adjourn the meeting at 12:05 AM. | |
|--|--|--------|
| Mr. Clements seconded the motion. The following vote was made: | | |
| Precinct 1: | Mr. Jerry Hroch, Vice President | Absent |
| Precinct 2: | Mr. Thurman Clements, Jr., Director | Aye |
| Precinct 3: | Mrs. Barbara Dietzel, Secretary | Aye |
| Precinct 4: | Mr. Mark Meek, President | Aye |
| At Large: | Mr. Kenneth Eller, Director | Aye |
| With four (4) ayes and zero (0) nays, the motion passed. | | |

Prepared by: Barbara Dietzel, Board Secretary. Victoria County Groundwater Conservation District Official

THE ABOVE AND FOREGOING MINUTES WERE READ AND APPROVED ON THIS

THE 20th DAY OF September A.D. 2013.

Director of the Victoria County Groundwater Conservation District

ATTEST:

Larbara Dietel

Director of the Victoria County Groundwater Conservation District

Appendix H. Victoria County Groundwater Conservation District Contact Information

District Contact Information

Mailing Address:

2805 N. Navarro St., Suite 210 Victoria, Texas 77901

Email Address:

admin@vcgcd.org

Phone Number:

(361) 579 - 6863

FAX Number:

(361) 579 - 0041

Board of Directors:

Mr. Mark Meek, President Mr. Jerry Hroch, Vice-President Mrs. Barbara Dietzel, Secretary Mr. Thurman Clements, Jr., Director Mr. Kenneth Eller, Director

Staff:

Mr. Tim Andruss, General Manager Mrs. Donna Yanta, Administrative Assistant Mr. Tim Faltysek, Aquifer Monitoring Technician