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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

July 6, 2015

Ms. Bridget Bohac, Chief Clerk  
Attn: Agenda Docket Clerk  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Austin, Texas 78753

**BY HAND DELIVERY**

Re: Petition of Inquiry Submitted by Curtis Chubb, Ph.D.; TCEQ Docket No. 2015-0844-MIS

Dear: Ms. Bohac:

Please find enclosed an original and eight copies of a Response of Post Oak Savannah Groundwater Conservation District (POSGCD) to Request for Inquiry in the above mentioned docket number. Please date stamp the copy and send back with the person delivering. Thank you in advance for your attention to this matter.

Sincerely,



Barney Knight  
Attorney for POSGCD

Enclosures

Cc: Mailing List

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## Certificate of Service

I hereby certify that a true and correct copy of the foregoing Response of Post Oak Savannah Groundwater Conservation District to Request for Inquiry was served by hand and delivery or U.S. Mail, as indicated below, to the representatives listed below on July 6, 2015.

  
Barney Knight

Mailing List  
Knight & Partners for POSGCD  
TCEQ Docket No. 2015-0844-MIS

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CHIEF CLERKS OFFICE

PETITION FOR INQUIRY

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BEFORE THE

FILED BY

TEXAS COMMISSION ON

CURTIS CHUBB

ENVIRONMENTAL QUALITY

**RESPONSE OF THE POST OAK SAVANNAH GROUNDWATER  
CONSERVATION DISTRICT TO THE PETITION FOR INQUIRY  
FILED BY CURTIS CHUBB**

**Introduction**

The Post Oak Savannah Groundwater Conservation District ("District")<sup>1</sup> has, from its inception long before the decisions in the Day<sup>2</sup> and the Bragg cases and the more recent amendments of *Section 36.002, Texas Water Code*,<sup>3</sup> "...emphasized the fact that conserving and protecting the aquifers requires actual management of the aquifers to realize the benefits and values of the resource, and the rights of the owners of the water on an on-going basis, while assuring the aquifers are a viable resource for not only a planning period of fifty years but thereafter into the future."<sup>4</sup> The District has accomplished, and does accomplish, its goals and duties to conserve and protect the aquifers by adopting and enforcing Rules and a Management Plan that secure the ability of the District to manage water production and the aquifers, protect the property rights of landowners and provide water for the State of Texas, and the State needs groundwater that can be produced on a sustainable basis without damage to or depletion of the aquifers. The owners

<sup>1</sup> Sec. 36.001, Texas Water Code, defines district as follows: "District" means any district or authority created under Section 52, Article III, or Section 59, Article XVI, Texas Constitution, that has the authority to regulate the spacing of water wells, the production from water wells, or both. [Emphasis Added]

<sup>2</sup> *Edwards Aquifer Authority v. Day* (Tex. 2012) 369 SW 3<sup>rd</sup> 814; *Edwards Aquifer Authority v. Bragg* (CA San Antonio 2013) 421 SW 3<sup>rd</sup> 118.

<sup>3</sup> In pertinent part, *Sec. 36.002, Texas Water Code*, (a) The legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property. [Emphasis Added]

(b) The groundwater ownership and rights described by this section:

(1) entitle the landowner ... to drill for and produce the groundwater below the surface of real property ... without causing waste or malicious drainage of other property or negligently causing subsidence ...

(c) Nothing in this code shall be construed as granting the authority to deprive or divest a landowner ... of the groundwater ownership and rights described by this section.

(d) This section does not: ...

(2) affect the ability of a district to regulate groundwater production as authorized under Section 36.113, 36.116, or 36.122 or otherwise under this chapter or a special law governing a district; [Emphasis Added]

<sup>4</sup> See: Exhibit "A" presented by Gary Westbrook, General Manager, at the University of Texas School of Law, 2014 Texas Water Law Institute, November 21, 2014.

of land that overlies an aquifer are entitled to an equitable share of the water that can be produced from the aquifer underlying their property on a long-term and sustainable basis without damage to or impairment of the aquifers. Neither is there a compelling reason to restrict groundwater production to less than the two acre feet/acre until actual groundwater production from an aquifer begins to approach the Modeled Available Groundwater ("MAG")<sup>5</sup> and/or conditions in the aquifer approach the adopted Desired Future Conditions ("DFCs") and, eventually, in the long-term, actual sustainable yield established for that aquifer. The District views its mission as being one to protect and conserve the aquifers by managing the aquifers and production in a manner to avoid harm to the aquifers, sustain the long-term viability and production of the aquifers, and permit the State and landowners to benefit from the long-term availability of a sustainable supply of groundwater.

The Petitioner continues to refuse to understand the purpose of the MAG and the fact that it is the predicted estimated production that can be produced every year over a period of 50 years to accomplish the DFCs in 2060. He simply disagrees with the District's approach of permitting the production of groundwater subject to the reserved authority to limit and decrease the volume of permitted production as more landowners seek production permits, production otherwise increases, or monitoring of the groundwater and aquifers evidences that authorized production should be limited to benefit the aquifer or assure the long-term sustainable yield of the aquifer is accurate. As stated in a guest editorial written by the Petitioner and published in the Cameron Herald on February 13, 2013, attached as **Exhibit "B"**, the Petitioner's primary view is that the District should not permit more water production than the 2,000 acre feet estimated in 1936 to be the amount of water recharged into the deep portion of the aquifers annually, and the State Legislature can take away the authority of the District to enforce the Rules and reduce the permitted production per acre as required to both protect the aquifers and allow all landowners to obtain permits for a pro-rata share of permitted production.<sup>6</sup> This 1936 report is pre-development of the aquifers in question and outdated science.

The Rules of the District and all drilling, operating and production permits issued by the District provide that permitted groundwater production can be modified and reduced as needed to protect the aquifers and achieve the DFCs.<sup>7</sup> The District has "...the ability to implement specific management strategies, such as curtailment..."<sup>8</sup> This District's management approach is in part based on this authority and absent an identified issue regarding a specific permit application, the Rules allow permits to be issued for the annual production of up to two acre feet/acre of groundwater until such time as total groundwater production, the monitored water levels in the

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<sup>5</sup> Sec. 36.01, Tex. Water Code, defines the MAG as follows: "Modeled available groundwater" means 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. [Emphasis Added]

<sup>6</sup> The Legislature may have that authority, just as it has the authority to abolish the District. However, given the property rights of all landowners any such legislation would likely be constitutionally challenged. See: Governor Abbott Vetoes House Bill 2647, attached as **Exhibit "C"**.

<sup>7</sup> Regardless of the DFCs that are adopted in future years, the District's Rules, Management Plan and strategy will accomplish those DFCs.

<sup>8</sup> See: **Exhibit "C"**

aquifers, modeled available groundwater and other factors indicate that permitted production should be decreased to assure accomplishment of the adopted DFCs.

The District Rules were designed and are enforced to prevent a "land rush" for production permits and avoid management of permit production based on priority in time of permits. From its inception, the District has adopted and enforced rules that allow each landowner to obtain a production permit for a proportionate share of the groundwater that can be then produced from aquifers that underlie his/her land surface, without damage to the aquifers.<sup>9</sup> The District realizes and understands that at some future time the production currently permitted by the District per acre will be reduced, and may thereafter be reduced further as necessary to accomplish the DFCs. For example, if at some future date the permitted production per acre has been reduced to one acre foot/acre, or less, and the owner/lessee of a large number of acres applies for a permit, the then permitted acre feet/acre will be reduced by the amount necessary to enable the issuance of the new permit at the newly established ratio of acre feet/acre, and all outstanding permits will be gradually thereafter reduced to the newly established ratio of acre feet/acre.

Section 16 of the Rules provides for the monitoring of water production and the aquifers, requires investigation and study at specific threshold points and, as do other rules, gives notice that the District has the authority and will take action in order to comply with the DFCs. Section 16 does not limit the District to any specific steps or actions, rather it preserves the general authority of the Board to base its actions on the whole of the available information resulting from additional studies and investigation, and give more or less weight to individual studies, reports and development, including, but not limited to, the pace of the changing conditions.

#### **Summary Response to Petitioner's Stated Reasons for Filing the Inquiry**

Petitioner sites Sec. 36.1082(7), (8) and (9) as the basis for requesting the inquiry. An abbreviated review of the District's Rules and related actions negates Petitioner's claims.

(1) [T]he rules adopted by a district are not designed to achieve the desired future conditions adopted by the management area during the joint planning process.

The District currently maintains 88 monitoring wells and is increasing the number of monitoring wells annually. These wells are used to monitor actual water levels within the aquifers. In addition to other applicable provisions in the Rules, Section 16 provides for the District to use groundwater modeling, actual and estimated groundwater production, the monitored level of groundwater in the aquifers and other information to help achieve the DFCs and to manage groundwater production as needed to protect the aquifers, give appropriate consideration to the MAG and accomplish the DFCs. The most recent Monitoring Well Report, dated April 2015, is available at [www.posgcd.org](http://www.posgcd.org).

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<sup>9</sup> There is no first in time priority for permits. A permit issued in 2010 will be on equal footing with a permit that is issued in 2020.

Rule 16.3 requires the monitoring of the aquifers and groundwater production. Rule 16.4, in pertinent part, states that:

“Monitoring and threshold levels will be used to initiate appropriate responses designed to help achieve the DFCs, conserve and preserve groundwater availability and protect groundwater users.”

Rule 16.4 establishes four threshold levels at which reviews and actions will be taken, and each of those threshold levels and required actions are substantially based on actual production reaching a specific percentage of the MAG, or the percentage of the water drawdown level (monitored water level) being greater than a specific percentage of the average groundwater drawdown adopted as a DFC. The percentages vary depending on the threshold level, but, as an example, at Threshold Level 1 the trigger point is production reaching 70% of the MAG or 60% of the DFC. The required action increases with each threshold level as the percentages of the MAG or the percentage of the DFC increase. However, if any study, model result or measurement evidences the need for a prompt action by the Board, the Board has that authority.

(2) [T]he groundwater in the management area is not adequately protected by the rules adopted by a district.

The District's Management Plan and Rules provide a comprehensive regulatory and monitoring program designed to allow landowners, the local economies and the State to realize the benefits of the groundwater available within the District on a long-term sustainable basis. Until such time as production reaches 70% of the MAG, or 60% of the DFCs, or projected water level drawdowns indicate the DFC for 2060 will be exceeded within fifteen (15) years, the District will generally issue appropriate permits for up to two acre feet/acre of groundwater production. However, the Rules specifically provide for the Board to lessen the production per acre based on other relevant factors and to amend, modify and reduce the production authorized for each permittee as needed to give proper consideration to the MAG and comply with the DFCs. The Rules further allow landowners to obtain new permits after a reduction in the volume of production permitted per acre of land overlying an aquifer, or within a specific Management Zone, even though the additional permit may result in a further reduction of the production authorized by previously issued permits. In this manner, the DFCs can be achieved while at the same time permitting each owner of groundwater to share equitably in the volume of groundwater that may be produced within the District with compliance with the DFCs and the protection, conservation and long-term preservation of the aquifers and water supply.

The District Rules currently total 88 pages. Those Rules are a living document<sup>10</sup> that is amended and modified regularly to address new information and issues. No one Rule fully protects the

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<sup>10</sup> For example, recent amendments to the Rules added requirements for the vertical spacing of wells, to the traditional requirement for horizontal spacing, for the Yegua Jackson Management Zone.

groundwater that is within the District; however the Rules as a whole very substantially protect the groundwater and the management of groundwater within the District. The District's Rules are available on the District's website at [www.posgcd.org](http://www.posgcd.org).

(3) [T]he groundwater in the management area is not adequately protected due to the failure of a district to enforce substantial compliance with its rules.

Selected quotes taken out of context do not establish the District's failure to enforce substantial compliance with the Rules. The District enforces the Rules administratively as written, and has otherwise enforced the Rules both by administrative fines<sup>11</sup> and obtaining civil judgments.<sup>12</sup>

It appears Petitioner's primary complaint with respect to this point is that he disagrees with the District's consideration and application of Rule 7.6. Without specific applications being raised, it is difficult to reply to this point except in a general response to Petitioner's three points that, in sum, simply disagree with the management approach the District adopted to consider the MAG and comply with the DFCs, recognize property rights, make a renewable groundwater supply available, and protect the groundwater supplies and aquifers. The District's approach is to accomplish these duties by controlling and limiting actual groundwater production rather than permits. The District's management approach is reviewed and explained in the paper presented by the General Manager and attached as **Exhibit "A"**.

### Response to Petitioner's Basis for the Petition – Part 1

#### **Petitioner's Rule 5.1.2 Allegations and Conclusions.**

(a) The District does not make exception to the apparent intent of Petitioner's allegation that "Rule 5.1.2 grants everyone within the District the right to apply for production permits to pump up to 2 acre-feet/year/acre" for a beneficial use. The District cannot prevent the filing of an application for a permit. However, Rule 5.1.2 actually prohibits the production of more than 2 acre feet/acre/year from all non-exempt wells, and Rule 5.2.1 provides that land that is not located over an aquifer will not be included in the volume of water permitted to be produced.<sup>13</sup> More importantly, Rule 5.1.2, references Section 16 of the Rules, and provides that if water production for a Management Zone reaches the level at which reduction in the permit amounts are made the production authorized by permits may be reduced. Rule 5.1.5 reinforces this: "A well or well system may not be operated such that the total annual production exceeds the permitted amount, less any reduction required under Section 16."

<sup>11</sup> As an example, See Exhibits "D-1" and D-2" - imposition and payment of an administratively imposed fine;

<sup>12</sup> Exhibit "E" is a final judgement issued by a district court in a case filed by the District.

<sup>13</sup> Other Rules are also applicable and applied as appropriate to permit applications, e.g. requiring a mitigation plan, requiring alternate supply be available, and the Rule 7.6(5) provision that if the applicant has existing production permits that are underutilized and fails to document a substantial need for additional permits to increase production, the permit may be denied.

Petitioner simply disagrees with the management and regulatory approach adopted by the District to accomplish its goals and duties without infringing on property rights, i.e. the control and management of production to give consideration to the MAG and comply with the DFCs rather than limiting permit amounts to volumes that may not be reached by 2060.

(b) The District cannot control the requests actually made in an application. Rather, the District acts on the applications consistent with the Rules and Chapter 36. There may in fact be 1,088,000 acres within the District. However, no economically viable aquifers are located within a large area of Northwest Milam County. Further, Rule 5.2 specifically provides that land and water rights that:

(i) is not located over the aquifer from which a well is authorized to produce water, will not be included in calculating the volume of water permitted to be pumped under Rule 5.1;<sup>14</sup>

(ii) is located south of the saline line will not be included in calculating the volume of water permitted to be pumped under Rule 5.1 for a well that is located north of the saline line;<sup>15</sup>

(iii) is located south of the saline line will only be included in calculating the maximum production permitted for a well that is located south of the saline line;<sup>16</sup> and

(iv) Maximum allowable production authorized by permit for a well or well system, other than production authorized by a historic use permit<sup>17</sup>, may be reduced as provided in these rules. Permitted production may be reduced as provided in Section 16.

#### **Petitioner's Rule 7.6 Allegations and Conclusions.**

The District obviously considers and applies the provisions of Rule 7.6 when considering a new permit application. Petitioner's complaint is that the District does not consider and apply Rule 7.6 as he would apply the Rule. General statements and quotes taken out of context are not indicative of the regulation and management system adopted and applied by the District, e.g. quoting an abbreviated statement made by legal counsel in a response to a question made in an open meeting about a specific pending application. As above, the District's Rules and Management Plan are structured to enable the District to actually manage conservation and production to achieve the DFCs by regulating water production while considering the MAG rather than limiting the permits available to the first come first served approach. The provisions of Rule 5.1, 5.2 and Section 16, and various other provisions of the Management Plan and the Rules, are applicable and clearly establish that the District has rules in place to consider the

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<sup>14</sup> Rule 5.2.1.

<sup>15</sup> Rule 5.2.2.

<sup>16</sup> Rule 5.2.3.

<sup>17</sup> Historic Use Permits are issued for, and limited to, the life of the well. Historic Use Permits will gradually diminish away and become subject to all the rules and permitting requirements. The "indefinite term" stated in Rule 7.1.8 is the life of the well. This Rule, as are all others, will enable the District to accomplish the long-term DFCs.

MAG and make such adjustments as needed to comply with the DFC requirements.

Rule 7.6 is used and applied for the intended purpose as are the other rules, e.g. Rule 7.4, and Petitioner's three summary points on this rule are conclusions of law.<sup>18</sup> It is not practical, in a compilation of a set of comprehensive rules, to repeat every requirement of the rules in every rule. The Rules provide more than adequate provisions to assure the District has the authority and methodology in place to comply with the DFCs. They just do not approach these requirements by limiting the total permits to an amount per acre foot that will be required if and when permits are issued for the production of water from every acre within the District.

Permitting the production of groundwater until total production approaches 70% of the MAG or water levels reach 60% of the DFCs, or projected drawdown will exceed the DFCs within 15 years, benefits both the State, the landowners and the local economies. It is also important to note the Rules also provide for the protection of the aquifers and groundwater in multiple other respects. The District's Rules, Management Plan and on-going application of those to the business of the District are specifically designed to consider the MAG and comply with the DFC requirements to attain a future balance that will reach a sustainable level of water production and preserve the benefits of the aquifers for future generations.

#### **Petitioner's Section 16 Allegations and Conclusions.<sup>19</sup>**

The Petitioner's reliance upon excerpts from general statements regarding "approving all permits" does not support either of his stated reasons for filing the petition. Although a material majority of the permit applications to date have been granted, all permit applications have simply not been granted and some have never even progressed to a hearing before the Board. Equally so, the "hear say" quote of another groundwater district is not relevant and is also very likely not a true statement. The regulations set forth in Section 16 give the District the authority to exercise judgement and discretion based on the facts and information presented to reduce the groundwater production authorized by previously issued permits and to lower the permitted production per acre for all permits issued thereafter. Further, that action is not limited to a one-time event and may be repeated based on consideration of the MAG, actual groundwater production, monitored water levels, etc. and compliance with the DFCs. For convenience, a copy of Sections 16 and 17 of the Rules is attached as **Exhibit "F"**.

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<sup>18</sup> As examples of the District's application of Rule 7.6, together with other applicable rules, ALCOA was required to adopt a mitigation plan as a condition to its operating permit; and Layne Water Development of Texas, LLC, the first permittee in the Blue Water and Abengoa permits was required to have all subsequent customers to have and maintain additional sources of water.

<sup>19</sup> Flexibility is essential due to unknowns outside the District's boundaries, i.e., if production increases in a neighbor GCD, limiting groundwater available for production within the District, POSGCD's DFCs will still be enforced.

## Petitioner's Rule 16.4 Allegations and Conclusions.

(a) Production Reports.<sup>20</sup> The District does not require annual groundwater production reports from exempt wells. Rather, the District estimates the annual production from exempt wells. The District primarily tracks the production reports and the estimated production amounts of groundwater annually, and analyzes this information in five year increments to remove biases. A report showing percentage of the MAG and permitted amounts produced for each aquifer on a five-year average is attached as **Exhibit "G"**. In January of each year, the District sends a form letter, attached as **Exhibit "H"**, to each non-exempt well owner to remind them of the requirement to submit the required production report. A follow-up letter, attached as **Exhibit "I"**, is sent sixty days thereafter to permittees that have failed to file the required report. The Petitioner claims that production results do not make sense and doubts their efficacy as a management tool, however, in the Middle Wilcox Aquifer Simsboro Formation (hereinafter "**Simsboro**"), 96.7 percent of the permitted production is metered by a SCADA system or other flow meter. The District receives some reports electronically and also has access to every meter within the District.

It is at this point that Petitioner again reveals his true complaint. He is opposed to the District regulating groundwater production by regulating production rather than permits. This position is the more obvious in Figure 2 where Petitioner selectively refuses to consider reported production which the District reports annually. It is obvious the Board of the District has on-going authority to amend and modify the Rules if and as needed. No purpose would be served for including the locations of the monitoring wells in the Rules. The number of monitoring wells increases each year, the locations are a matter of public record, and the Management Plan approved by the Texas Water Development Board provides adequate information and coverage of the monitoring well program as a management tool. Equally so, to provide specific time limits and required actions regarding the monitoring and Threshold Levels would impose limitations on best management and hinder careful consideration of all relevant information. As written, Section 16.4 permits the District Board to react appropriately to any varied number of conditions, groundwater modeling, hydro-geologic studies, speed of change in conditions, and other factors, as opposed to requiring specific action based on specific listed events. As stated repeatedly at the State level, action should be taken after very careful consideration of all the relevant information

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<sup>20</sup> In his comments regarding Rule 16, Petitioner states that only 326 of 720 permitted wells reported production. Included in the permitted list are O&G permits which are only good for one year and may have expired during the year. (Because, under the Open Records Act, we are not permitted to ask what the requested info is to be used for we cannot point out these issues). Also included in that list are approximately 100-125 wells which either have not or will not be drilled, e.g. ALCOA with 24 wells and Blue Water's 40 wells that have yet to be drilled. Some wells have since been removed as one year drilling permits have since expired. In addition, many wells in the District are only used as back-up or supplemental production and may not be produced more than 2 to 3 years out of 10. Of most importance is that all of the District's large producers/permits, with the exception of very few Alluvial wells, did indeed report and are metered. Petitioner's claim in item 4 that only 15% of permitted production was produced is a reasonable estimate. For example, Blue Water pumped only 1,224 of 70,993 acre feet authorized, and ALCOA produced only 8,128 of 40,000 permitted acre feet

and that should take place at the local level. In sum, Section 16.4 is written to permit the District to carefully consider any and all relevant information that is applicable.

(b) **Monitoring Wells.** The District's Management Plan, attached as **Exhibit "J"**, is approved by the Texas Water Development Board and is the appropriate location for the management plans, actions and reporting Petitioner desires to be included in the Rules. The District currently has eighty-eight (88) monitoring wells. The number of monitoring wells is increasing annually due to the District (i) working with well owners to enable use of existing wells for groundwater monitoring; (ii) converting others wells to monitor groundwater; (iii) accepting the donation of wells; (iv) contracting to have a monitoring well drilled and installed; and (v) requiring wells that will have a capacity of 1000 GPM to install monitoring equipment.<sup>21</sup> The Board regularly reviews the number, location, operation and increase of the monitoring wells and receives an annual report on the measured water levels.<sup>22</sup>

The Management Plan, adopted in 2012, specifically requires at least 50 monitoring wells. That number has increased to 88 wells, and the location of each monitoring well is shown on the attached **Exhibit "K"**. Both the Management Plan and the map are public records and may be obtained directly from the District Office or by visiting the District's website [www.posgcd.org](http://www.posgcd.org).

(c) **Critical Details.** (i) The Board has the on-going authority to adopt, modify and amend the Rules and the Management Plan, and Section 16, among other Rules, is written to enable the Board to take such general or specific action as warranted, based on the specific facts and conditions then applicable. (ii) Section 16.4 provides for the General Manager and the Board to begin study and evaluation, and the Management Plan, at Section 10, states, in pertinent part, that: "The monitoring of the wells will be performed under the direction of the general manager, by trained personnel using a Standard Operation Procedure adopted by the District."

#### **Petitioner's Rule 16.7 Allegations and Conclusions.**

Petitioner argues this rule will be ineffective in achieving the DFCs and protecting our groundwater. The water rights of the land owned by Petitioner were severed from the surface estate when he purchased his property, and his interest in the groundwater is a public interest. Therefore, although no specific points are made by Petitioner to support his argument, the following is generally responsive.

First, it is important to note, the Rules as a whole are adopted to enable the District to accomplish the duties and purposes of the District as set forth in State law and the Management Plan. No one rule, standing alone, is relied upon to accomplish the duties, purposes, obligations and goals of the District. The Rules must be interpreted and applied as a whole and it is not necessary to repeat and incorporate the provisions of all other rules into every rule adopted by the District.

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<sup>21</sup> See: Rule 5.1.1

<sup>22</sup> The Annual Report 2014, available on the District's website [www.posgcd.org](http://www.posgcd.org), and should be given consideration.

The DFCs are adopted and amended at least every five years by the GMA to establish and revise the conditions desired fifty years in the future. The ability of the District to: (a) reduce existing production authorized by previously issued permits by two (2) percent annually; and (b) issue all subsequent permits to authorize the production of the lowered number of acre feet/acre would seem sufficient to enable the District to comply with the DFCs. Ample time is available to the District to make these adjustments, as evidenced in the attached **Exhibit "L"** adopted by GMA 12 and showing the predicted drawdown in the aquifers over a period of fifty (50) years.

In addition to the Rules and Section 16 specifically, the permits issued by the District include the following sentence: "The Rules are incorporated herein in their entirety by reference, as if set forth herein verbatim, including but not limited to the Rules providing for reducing permitted production." This (or almost identical provision) has been in the District permits from the beginning of the District, and continues. As an example, see the most recent permits issued to Abengoa Vista Ridge LLC ("**Abengoa**") attached as **Exhibits "M-1" and "M-2"**. These permits were transferred and assigned to Abengoa by Blue Water Vista Ridge LLC ("**Blue Water**") in furtherance of the agreement by Abengoa to deliver 50,000 acre feet of water annually to the City of San Antonio Water Supply system ("**SAWS**"). Consistent with the permit wording, as but one example, the attorney for Blue Water has stated publicly on the record and in writing that Blue Water understands the District can reduce the permitted production per acre foot (See: **Exhibit "N"**), and SAWS has stated both privately and publicly that it recognizes the District can, and will not dispute if the District does, reduce the permitted production per acre. (See: **Exhibit "O"**).

The public statements and representations referenced above are only examples of many such communications and statements on the record by permittees. Each permit, as applicable, references the prior holders of the permit and the following paragraph from the Abengoa Operating Permit (with appropriate names substituted in other permits) is included in all permits:

"The Rules are incorporated herein in their entirety by reference, as if set forth herein verbatim, including but not limited to the Rules providing for reducing permitted production. The Permittee shall comply with the Rules and each requirement thereof in operating, maintaining, repairing and altering each of the Wells and the Well System. All application(s) pursuant to which the related original permits and prior amended permits, and this Amended Permit, have been issued, and all written agreements and acknowledgments executed by the Permittee, and/or by BWVR, Blue Water, or Layne, are incorporated into this Amended Permit. This Amended Permit is granted on the basis of, and contingent upon, the accuracy of the information supplied in the application(s), agreements and acknowledgments on file with the District. A finding that false information was supplied to the District in the permitting process for the Wells is grounds for revocation of this Permit."<sup>23</sup>

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<sup>23</sup> See: Rule 7.1.4.

Although the current DFCs are in the midst of the required process to be updated, modified and re-adopted every five years, the current DFCs are for the year 2060. As a statement of the obvious regarding only one of the tools available to comply with the DFCs, an annual 2% reduction in existing permitted production today would reduce the total permitted groundwater production by 90% by the year 2060.

### Response to Basis for the Petition – Part 2

Despite his strong beliefs, guest editorials and opposition, Petitioner has apparently not made a sufficient effort to understand the policies, operation and planning of the District. For example, the Petition for Inquiry seems to ignore the contents and provisions of the Management Plan.

The District has made it clear from its inception that all owners of groundwater will be entitled to make application for a permit and receive a permit if compliant with the Rules. In so doing, as does the wording of the several Threshold Levels in Rule 16.4, e.g. “Threshold Level 1 will be reached ...” as groundwater production increases the permitted production per acre will be decreased and once that process begins it will likely be repeated. As an example, the District’s Rules and policies envision that a landowner may apply for his/her first permit 50+ years in the future and obtain a permit to produce groundwater for the then permitted production per acre, and that permit resulting in a reduction in the production then authorized for all previously issued permits. As an overly simple example, if the acreage within the District that overlies an aquifer is 790,000 acres and the then current MAG for the aquifer is 106,605 acre/feet, and every eligible landowner obtains a permit for production, the permitted groundwater production per acre would be reduced to approximately .1349 acre feet/acre.<sup>24</sup>

Blue Water may have plans to produce “the amount of groundwater that they desire.” However, it is doubtful “... they plan to use all of the problems with the District’s rules discussed above to achieve their goal.” See the discussion above regarding permit wording, public statements and representations, and **Exhibits M-1, M-2, N and O**. The permit content, volume of public statements on the record and admissions by permittees, including Blue Water and SAWS, are material.<sup>25</sup> The District is unable to determine how the Petitioner calculated the MAG will be exceeded on the first day of pumping with regard to those permits, or that Threshold Levels 1

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<sup>24</sup> Even were the MAG exceeded during the first year of production from Blue Water and SAWS, the DFCs account for 15 previous years where the MAG has not been produced, and therefore, the DFCs are still safe far into the future. The Petitioner, even though offered multiple chances to sit down and discuss with District staff and consultants (as established in email from Chubb to TAMU staff) still fails to comprehend the most basic understanding of the aquifers of the District as well as the fundamentals of hydrology and groundwater modeling.

<sup>25</sup> Rule 7.1.4 provides in part that a finding that false information has been provided is grounds for immediate revocation of the permits. In addition, several material legal issues would arise were the permittees to disavow their oral and written representations on the record when requesting issuance of the permits, e.g. waiver, estoppel, etc.

and 2 will be exceeded on the first day of pumping.<sup>26</sup> Each well permit is assigned to a specific aquifer. Abengoa now owns the permits that support the future conveyance of 50,003 acre feet to SAWS. Of that 50,993 acre feet, 15,000 acre feet is to be produced from wells in the Carrizo aquifer and 35,993 acre feet may be produced from wells in the Simsboro aquifer. If one assumes the maximum permit amount of 15,000 acre feet/year will be pumped from the Carrizo aquifer over a period of 360 days/year, the first day of pumping will produce 41.666 acre feet of groundwater from the Carrizo aquifer. Likewise, based on the same assumptions and the 35,993 acre feet permitted for the Simsboro aquifer, 99.98 acre feet will be pumped from the Simsboro aquifer on the first day of pumping.

Petitioner's argument that Blue Water will receive more permits reflects Petitioner's refusal to acknowledge all of the Rules and required procedures. Blue Water will likely be required to add groundwater leases to support the existing permits as the permitted production per acre is reduced. When the permitted production per acre is reduced both the acreage now supporting those permits and the additional groundwater leases that may be applied to maintain the total permit amount will be reduced, and, at the same time, the permitted production per acre for the entire district will be reduced accordingly.<sup>27</sup>

As further evidenced by the arguments and charts provided on page 14 of 14 of the Petition for Inquiry, Petitioner continues to refuse to give any consideration to the provisions of the Rules that limit the maximum permit of 2 acre feet/acre and provide for on-going reduction of that number based on a number of factors including, but not limited to, production and monitored water levels. The charts and the "Scenario" intentionally ignore important provisions of the Rules. In that same respect, the marketing information purportedly provided to SAWS by Blue Water may reflect the long process over the years for Blue Water to market the water at issue. However, even a superficial review of the minutes, records and rules of the District will clearly show the views, policies and applicable Rules of the District were established and in-place well before the permit applications were made by Blue Water.

### **Response to Petitioner's Concluding Notes**

The District has in fact created rules to allow everyone to pump a sustainable amount of groundwater. The aquifers have existed for many years, remain relatively underutilized, and are capable of producing immediate benefits, without harm to the aquifers, under the District's Rules

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<sup>26</sup> Even if we assume Petitioner's assumption are correct, the District Board may choose to respond at that point, or to evaluate additional information in making a decision on curtailment. No precedence is necessary as the aquifer responses to production and measured water levels are still the guiding factors toward management towards a DFC.

<sup>27</sup> Curtailments may actually begin at Threshold Level 2, and, if necessary, under Rule 16.7(4) the permits may be reduced more than the 2% per year. When referring to the chart represented in Exhibit L, estimated drawdown over time within GMA 12 (which we know is over estimated based on the Preliminary Evaluation Study discussed below,) we find that the District will have approximately 20 to 30 years to effect curtailments to achieve the DFCs. During that period of time there will have been at least 6 more rounds of joint planning of the GMA and new improvements to the groundwater availability models used for predictive evaluations.

and Management Plan that provide for compliance with the DFCs and consideration of the MAG. Both the short-term and long-term benefits of the aquifers are much greater under the District's rules than had the District adopted rules that would continue to delay the benefits of a material portion of the sustainable yield until such time as all landowners obtain permits.<sup>28</sup> Restricting the use of the sustainable yield serves no public purpose and is an expensive option. Every year the sustainable yield is utilized produces added economic benefits for the landowners, the local economies and the State. Regulating production as opposed to limiting permits allows the State the benefits of the sustainable yield without delay or damage to the aquifers.

Permitting landowners to produce or sell groundwater owned by them in greater volume than will be permitted at some point in the future does no harm to the aquifers and benefits the public.

The regulations suggested by Petitioner would be a simple and viable methodology for protecting the aquifers, but would not permit the management of the groundwater in a manner required by Chapter 36<sup>29</sup>, or in a manner to comply with the DFCs or give appropriate consideration to the MAG. Those regulations would not enable the District to either achieve the DFCs or use the MAG as intended, but would protect the aquifers and groundwater by limiting and delaying the production of the sustainable yield. The Simsboro is a deep formation and the cost of wells to produce water from that formation is significant. Given the District Rules that limit permits to production from contiguous acres, Petitioner's suggested rules would very likely prevent or further delay any material groundwater production from that aquifer due to the great increase in the number of acres that would have to be contiguous to support the permits. The current rules of the District will, however, allow production sufficient to enable investors to finance and amortize the wells prior to the permitted acre feet of production per acre being reduced to accomplish the DFCs.

The example provided by Petitioner in the Concluding Notes, i.e. to divide the MAG by the number of acres in the Simsboro, is a continuation of Petitioner's misconceptions. The DFCs are currently established for the year 2060, the year when they should be achieved, and the MAG is not an annual pumping limit. For example, in November 2013 just prior to the Commissioners Court appointing new board members, Petitioner placed an ad in a local newspaper that stated in pertinent part that: "Available Groundwater is the pumping cap set by the State based on the District's decision..." regarding the DFCs. As a result, in order to authoritatively respond to the Commissioners Court the following Monday, Gary Westbrook, General Manager of the District,

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<sup>28</sup> Although a matter of speculation, were the District to adopt the regulations proposed by Petitioner benefits to the landowners, the local economies and the State would be unnecessarily delayed without any benefit to the aquifers.

<sup>29</sup> The regulatory approach urged by Petitioner cannot be accomplished because the District is required to manage the aquifers in a manner to comply with the DFCs, and Petitioner's objects. Further, to manage as demanded by the Petitioner would require the Districts, and the GMA, to violate the requirement established by 36.108 (d-2) that: "The desired future conditions proposed under Subsection (d) must provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area."

requested Larry French, Director of the Groundwater Resources Division of the Texas Water Development Board, to clarify the issue for use before the Commissioners Court.

Mr. French responded in pertinent part as follows:<sup>30</sup> “Modeled available groundwater (I assume that is what is meant by “available groundwater” in the advertisement) is a value (in acre-feet per year) estimated by the TWDB that achieves the desired future condition (DFC) in the aquifer. The DFC is proposed and adopted by districts in a groundwater management area. The TWDB uses the DFC statement to calculate the modeled available groundwater (MAG), which is then provided to each district. The MAG is the amount of water that the TWDB determines may be produced on an average annual basis to achieve a DFC. Each district – to the extent possible – is to issue permits up to the point that the total volume of permitted and exempt pumping will achieve the DFC. However, there are various other considerations that the GCDs are required to weigh in issuing pumping permits: the MAG, the amount of groundwater produced under exemptions, current pumping permits, reasonable estimates of groundwater production authorized under existing permits, and yearly precipitation and production patterns. So there is an element of flexibility introduced....and one reason it is not correct to refer to the MAG as a pumping cap. Districts may and have issued permits for more water than the MAG, but they also are responsible for achieving the DFC and may have to adjust the production allowed under those permits from time to time.”

The MAG is not an annual cap, and was never intended to be! The District manages based on actual aquifer conditions as determined by on-going monitoring of water levels, groundwater production estimates, hydro-geologic studies, and a variety of other information and resources. A primary responsibility of the District is to manage the groundwater and aquifers to comply with the year 2060 DFCs and the Rules and management of the District will accomplish that responsibility. The management of the aquifers based on actual aquifer conditions instead of estimated availability based on modeled results such as the MAG is supported by both the applicable law and hydro-geologic analysis. The hydro-geologic assessments and predictive simulations consistently over predict aquifer drawdowns as shown in the report entitled “Comments Regarding Predictive Simulations 1 through 4 and Preliminary Evaluation of Potential DFCs for the Simsboro Aquifer”, dated March 27, 2015, by Steven Young Phd, PE, PG of Intera Geosciences & Engineering Solutions. The report (“**Preliminary Evaluation Study**”) is available on the District’s website: [www.posgcd.org](http://www.posgcd.org) and more specifically as follows: [www.posgcd.org/wp-content/uploads/2015/04/GMA12\\_march\\_27\\_INTERA.pdf](http://www.posgcd.org/wp-content/uploads/2015/04/GMA12_march_27_INTERA.pdf).<sup>31</sup>

Petitioner’s Concluding Notes seeking to require management of the aquifers based on the MAG is inconsistent with State law and do not support the Petition for Inquiry. The Preliminary

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<sup>30</sup> Email dated November 22, 2013, from Larry French to Gary Westbrook.

<sup>31</sup> The application and use of this and similar studies is mandated, effective September 1, 2015, by Chapter 36. In pertinent part HB 200 adopted during the recent legislative session amends Sec. 36.0015 to provide that: “In this section ‘best available science’ means conclusions that are logically and reasonably derived using statistical or quantitative data, techniques, analyses, and studies that are publicly available to reviewing scientists and can be employed to address a specific scientific question.” HB 200 requires the use of best available science.

Evaluation Study, as have similar simulations and professional studies over the years, serve as but one additional support for the District to manage based on actual aquifer conditions rather than simulations and computer projections. For example, consistent with the District's management of the aquifers based on actual conditions, after the receipt of the Preliminary Evaluation Study, the District extended an invitation to the other Groundwater Conservation Districts within GMA 12 to consider adopting DFCs for the unconfined, or shallow<sup>32</sup> and more vulnerable areas, aquifers as the District has done since 2005.<sup>33</sup> See: Slide 15 of the Preliminary Evaluation Study. The District's Rules, Management Plan, operations and management fully comply with State law, and assure compliance with the DFCs and the protection of the aquifers.

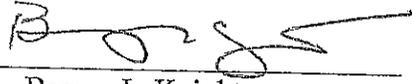
### Conclusion

The Post Oak Savannah Groundwater Conservation District requests that:

- (1) TCEQ dismiss the Petition for Inquiry pursuant to *Tex. Water Code, Sec. 36.1082(c)(1)*;
- (2) TCEQ deny all other relief requested by the Petitioner; and
- (3) TCEQ grant any further relief to which the District may be entitled.

Respectfully submitted,

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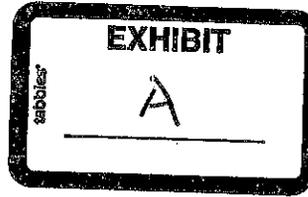
By: 

Barney L. Knight  
State Bar No. 11597000

ATTORNEYS FOR THE RESPONDENT  
POST OAK SAVANNAH  
GROUNDWATER DISTRICT

<sup>32</sup> District's development of shallow DFCs for each aquifer is based on sound science and enforceable. These shallow DFCs are even more protective of the aquifer than the overall GMA 12 adopted DFCs.

<sup>33</sup> The District developed DFCs before DFCs were defined and included in the applicable statute and the GMA process, and the District's DFCs for the shallow management zones are established in the Management Plan.



**Post Oak Savannah Groundwater Conservation District  
*Finding Balance Between Regulation, Management and  
Property Rights in the Central Carrizo-Wilcox***

2014 Texas Water Law Institute

November 21, 2014  
Austin, TX

Presented by:

Gary Westbrook, General Manager  
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## Overview

The primary and over-riding purpose of all groundwater conservation districts is to regulate the production of groundwater to protect and conserve the aquifers as a continuing, long-term supply of water for the benefit of the residents of the district and the State of Texas. However, if this were the only purpose of groundwater districts that could be readily accomplished in much simpler ways than providing state agencies or groundwater districts to regulate the drilling of wells and production of groundwater. As a result, The Post Oak Savannah Groundwater Conservation District ("Post Oak") is committed to accomplishing this purpose in a manner to permit the public and the landowners to realize the benefits of the aquifers both now and in the continuing future. Post Oak has, from its inception, emphasized the fact that conserving and protecting the aquifers requires actual management of the aquifers to realize the benefits and values of the resource and the rights of the owners of the water on an on-going basis, while assuring the aquifers are a viable resource fifty years and thereafter in the future. Accomplishment of the purposes of the districts consistent with State law requires an emphasis be placed on both conservation and management.

It is now clear, and should have been clear before the opinion in the *Day*<sup>1</sup> case, that landowners own the water that is in place beneath the surface of their land. The fact that the value of this property right was subject to being diminished under the rule of capture did not modify that ownership because the landowner had the right to produce as much water as was available subject only to it being used for a beneficial purpose. However, as with all property rights, when necessary to accomplish a public purpose, those rights are subject to reasonable regulation. As a result, Post Oak has recognized from its inception that groundwater districts were created not to take property rights but to regulate the use of those rights for the benefit of the property owner, other similarly situated owners, and the public.

As most of our sister groundwater districts believe of their approach, Post Oak believes its approach is the best answer to the question presented for this panel. We proceed with the intent and actions to do those things necessary to assure the aquifers within the district remain viable and substantially equal resources fifty years from now and thereafter. To accomplish this purpose Post Oak continues to conduct studies to ascertain the best hydrogeological information available, maintain and benefit from 88 monitoring wells and to add monitoring wells as appropriate to collect information needed to manage and protect the aquifers. Based on this information, on-going studies, monitoring, and adjustments regarding specific aquifers, Post Oak regulates and manages the use and production of groundwater in a manner to protect the aquifers, enable landowners and the public to benefit from the property rights and resource, and preserve the aquifers so the groundwater will continue to benefit the landowners and the public on substantially the same basis as now, for future generations.

Post Oak's Rules and the permits issued by Post Oak provide for each owner of land that overlies an aquifer or management zone to share equally on an acre for acre basis in the groundwater that is in place within their property and the applicable aquifer or management zone. Under the Rules there is no motivation for a "land rush" approach to obtaining permits. Excluding *historic use permits* no priority

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<sup>1</sup> Edwards Aquifer Authority vs. Day, 369 S.W.3<sup>rd</sup> 814 (Tex. 2012)

right or benefit is established by obtaining an earlier dated permit. Essentially, the Rules and permits allow Post Oak to decrease the production permitted under previously issued permits as necessary to allow landowners that overlie an aquifer to apply for and obtain a permit in the future that will allow them to produce their pro-rata share of the groundwater in place within their property and available for permit within the aquifer. The Rules and permits issued under those Rules also provide the basis for adjusting permitted production as reasonably necessary to limit production on a proportionate basis to a sustainable level, e.g. reducing permitted production within a Management Zone based on measured water drawdown levels.

The *Day* case recognized that regulation of groundwater by the exercise of police powers was authorized by the Constitution and the landowner has absolute title to the groundwater in place under his land subject to the rule of capture and police regulations, i.e. the landowner owns all of the water in place under his land separately, distinctly and exclusively. The Court further recognized that: "Groundwater regulation must take into account not only historical usage but future needs, including the relative importance of various uses, as well as concerns unrelated to use, such as environmental impacts and subsidence." We believe a careful reading of this case supports the policies and rules followed by Post Oak since its inception, and have not yet identified any Rule or policy of the District that should be amended in response to this case.

Similarly, the Court's opinion and ruling in the *Bragg*<sup>2</sup> case was consistent with Post Oak's policies and rules, i.e. generally stated: (1) groundwater is the property of the landowners, (2) groundwater can be regulated to preserve the aquifer and the interests of the landowners in the groundwater, but (3) the use of groundwater cannot be unreasonably restricted or taken, except as necessary to allow all owners to share proportionately in the available groundwater. However, Post Oak does have concerns about the customary method of valuing in takings applied by the Court in the *Bragg* case, i.e. the difference in the value of the land with unlimited access to water and the value of the land with (1) 2 acre/ft/acre of water and (2) no access to groundwater. This method of calculating damages should be modified to reflect a calculation based on the number of acre feet of water available per acre if all properties are granted a proportionate share of the water available under a valid regulatory program.

We believe these cases support the basis for the regulatory program established by Post Oak, i.e. approve documented historical use permits, and allow other landowners up to 2 acre feet/acre until overall usage within the District increases to a point that a reduction in the permitted amounts is required to protect the aquifer or provide reasonable protections for other landowners, and allow all landowners to equitably share in the groundwater that is in place within their property that may be produced without damaging the aquifer. In that manner, each landowner receives the benefits of reasonable regulation, i.e. continues to receive a pro-rata share of the available water in place. Any limit on production that is not necessary to protect the aquifer or assure landowners an equitable, pro-rata share of the available groundwater will be suspect.

Adopting policies and rules structured to comply with the *Day* and *Bragg* opinions, policies that authorize modification of permits issued for the production of groundwater as may be required when more landowners seek to produce their proportionate share of the groundwater in place under their

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<sup>2</sup> Edwards Aquifer Authority v. Bragg, 421 S.W.3d 118 (Tex. C.A. -San Antonio 2013)

land, or the water level in one or more aquifers declines more than anticipated, or that is acceptable to accomplish the primary purpose and obligation to conserve the aquifer for future generations, may be one answer to the question before this panel.

**Discussion Points- where the rubber meets the road**

**Background and History**

POSGCD includes all of Milam and Burleson Counties and was created by the 77<sup>th</sup> Legislature in 2001 through HB 1784 due to interests in marketing of groundwater resources from the central Carrizo-Wilcox aquifers. It was estimated that by that time between 30,000 and 35,000 acres of water rights had been leased or secured in these two counties. The District adopted its first set of Rules in March, 2004. Main concerns at that time were conservation and preservation of the aquifers, respect for property rights, protection of existing users, availability of the resource for future use and growth, lack of accurate scientific data, and reasonable management of the resource.

**Protection & Preservation of Resources, or, "How do you allow production by landowners who desire to produce their property, while protecting the property of those who do not?"**

The District first adopted limits to allowable aquifer impacts in its Rules and Management Plan in 2005. In that process the District thoroughly considered and evaluated the nature of the aquifers in the District, with shallow up-dip regions which become deeper, or down-dip, as the formations run towards the coast, (see Figure 1) and evaluated the height of the water column above well screens of registered wells. As Chapter 36 affords a GCD the ability to protect existing wells, the District has adopted separate shallow and deep management zones for each aquifer, and different limits of allowable drawdown impacts for the different zones. This approach provided for allowance of greater drawdown of artesian pressure in the confined aquifers, where appropriate, than decline in the water level in the unconfined aquifers. In addition, the management zones allows for consideration of areas most sensitive to hydraulic head changes due to production, These Rules and strategies were adopted prior to the Legislature's passage of HB1763 during that same year, which was the beginning of the joint planning process as we know it today. Later, during the joint planning process, the District worked with other GCDs in Groundwater Management Area 12 (see Figure 2) to morph its adopted management limits on allowable water level decline into Desired Future Conditions, which provide for overall protective management of the aquifers of the District and the GMA. These DFCs for GMA 12 were expressed as an average reduction in hydraulic head across an entire District from 2010 to 2060. However, POSGCD continued to provide protection for the more shallow wells in the District by continuing to designate separate Management Zones in the shallow or unconfined areas of each aquifer, and adopting a separate limit, or threshold, for drawdown for those zones, which are used in conjunction with the overall DFCs adopted by GMA 12. In this way the District maintains overall regional GMA DFC goals, which help to regulate impacts from pumping outside the District and across the entire region, while affording POSGCD the ability to add the necessary detail at the local, or District, level (see Figure 3). Also of note is recent action by the POSGCD Board to request other GCDs in GMA 12 to adopt DFCs for the shallow areas of the aquifers in the GMA.

As previously stated, the District manages with respect and recognition of property rights as modified by reasonable regulation to prevent adjoining landowners from causing excessive impacts to one another, or production from the deeper confined portions of the aquifer affecting availability of groundwater in the more shallow unconfined areas. This approach to management utilizes correlative rights and is accomplished with several management tools. One such tool is well spacing requirements which include both horizontal and vertical offsets specifically tailored to each aquifer based on hydrologic evaluations. One of the purposes for well spacing requirements is to spatially distribute the pumping across the areal and vertical extent of the aquifers. Next, the District employs a contiguous acreage requirement to regulate overall volumes of annual production. Currently this limit is set at a fairly conservative maximum allowable production of 2 acre feet per acre of groundwater annually. This requirement will be one tool used to adjust allowable production should curtailment of permitted production in the future become a necessity to protect the resource. Additionally, The District recognized historic users through the issuance of Historic Use permits. These permits protect the investments of producers prior to the District's creation, and can be curtailed at a different rate than other permits. Among key aspects of these Historic Use permits is production being specific to use, amount, location of withdrawal, and term limits to with the life of the well.

To insure proper evaluations for management of the aquifers, POSGCD maintains an active water level monitoring program and detailed monitoring network of water wells throughout all aquifers and management zones in the District. In deeper areas of aquifers where water wells are not readily available to provide a monitoring presence, POSGCD is aggressively involved in entering into agreements with landowners in converting abandoned oil & gas wells to water wells. POSGCD also partners with county agencies to obtain access to strategic locations for monitoring groundwater conditions.

#### Permitting Structure

With due considerations to the characteristics of the aquifers in the Central Carrizo-Wilcox area, the District has developed a permitting structure that allows for long-term permits. Because patterns of use by producers fluctuate from year to year, and because of the large volume of water in storage of the regional aquifer system, it is anticipated that large regional changes in hydraulic head will develop with sufficient lead time to take corrective measures before undesirable groundwater conditions evolve. Therefore, the District issues 40-year production permits which can be adjusted as needed according to Section 16 of the District's Rules. The District also employs a 5-year review of all permits which allows sufficient opportunities to adjust permits so they are in line with changes to DFCs or the Management Plan. Any necessary adjustment or curtailment of production will be enacted simultaneously to all permits of the same class in the same management zone, thereby avoiding necessity of denial of a permit application even during times of curtailment, and treating any and all property owners the same on any given day. Since the District will manage based on actual water levels, as well as relying on the GAM for insightful evaluations and interpretations of the most current field data, this management strategy also allows the District to achieve the requirements of Chapter 36, Sec. 36.108 (d-2) by allowing the aquifer to determine the "highest practicable level of groundwater production" while providing for "the conservation, preservation, and protection" of the resource by protecting the "at risk" areas.



**Figure 2**

**Groundwater Management Area 12**

**#55- Mid-East Texas GCD**

**#8- Brazos Valley GCD**

**#68- Post Oak Savannah GCD**

**#48- Lost Pines GCD**

**#23- Fayette County GCD**

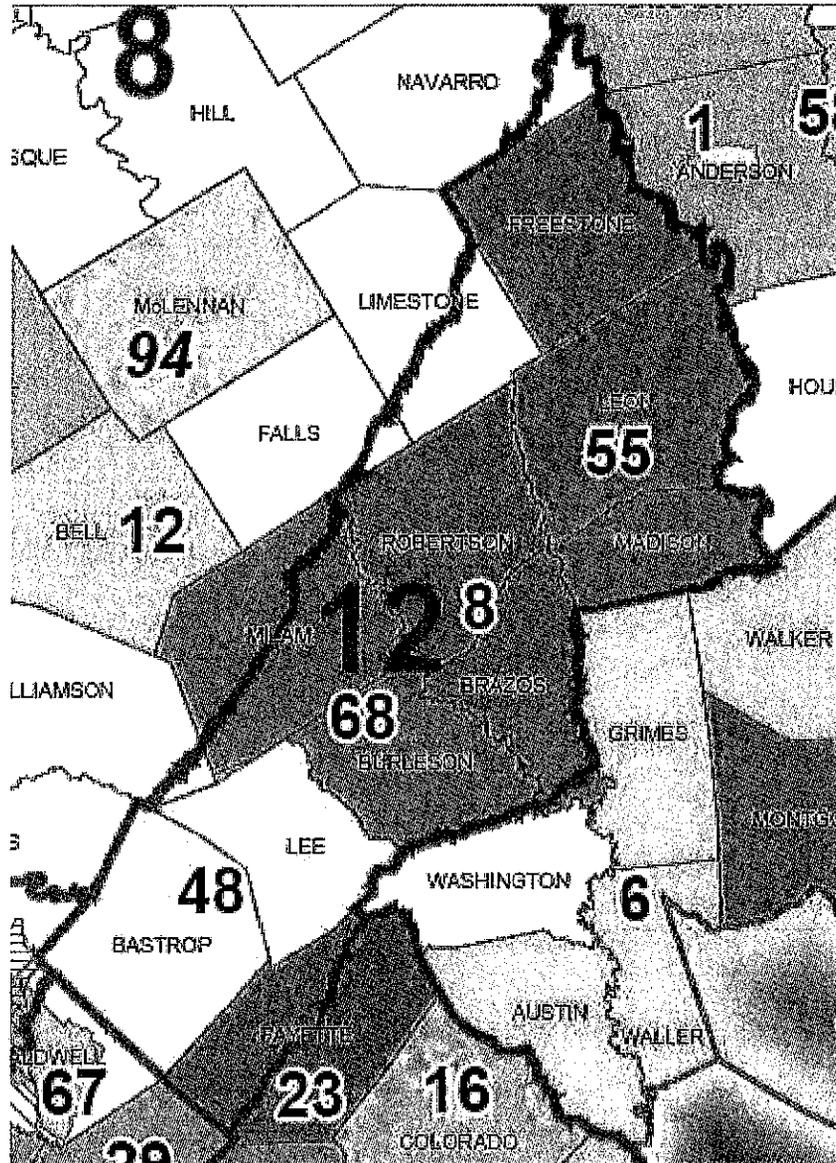
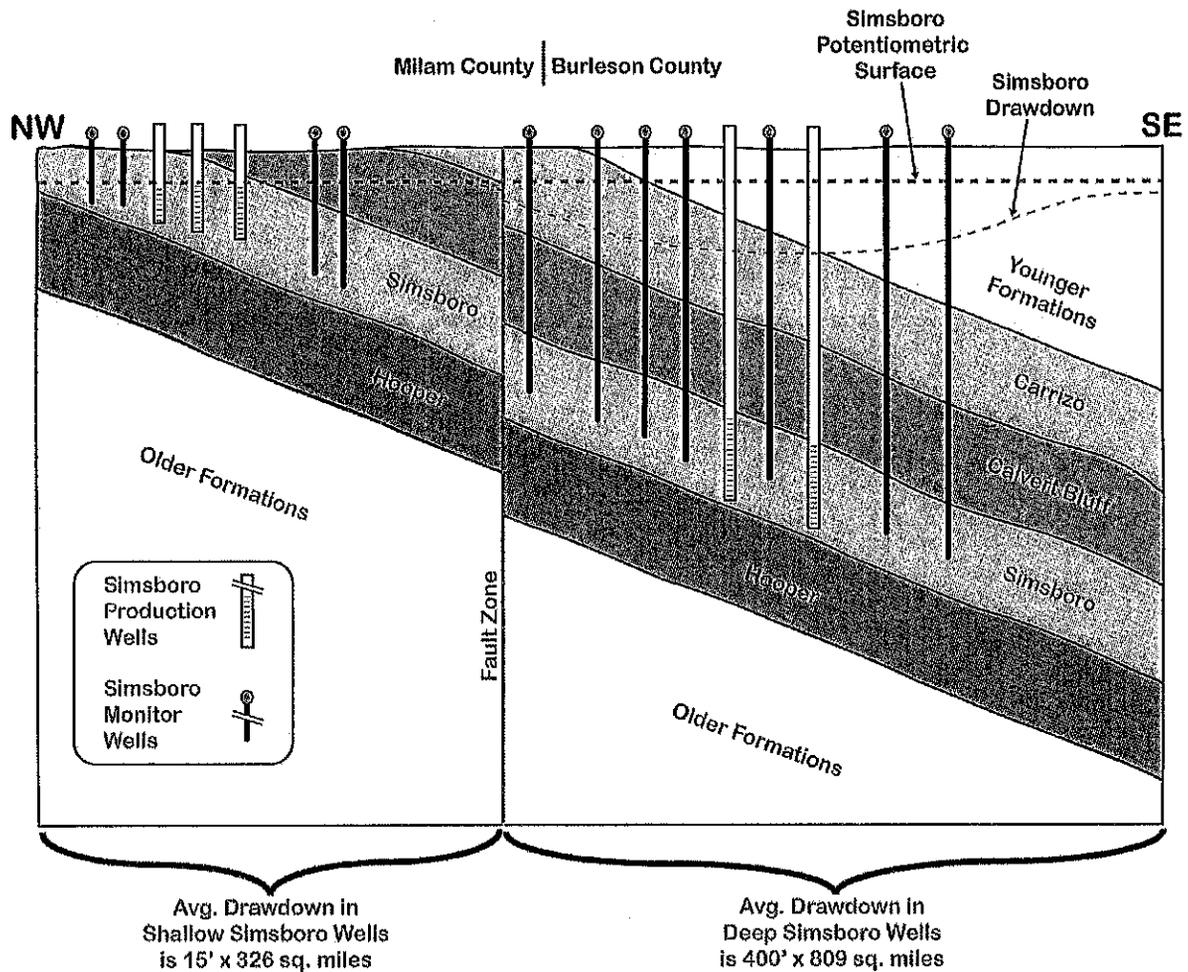


Figure 3 (Provided for discussion of DFCs)

## Schematic Cross Section Simsboro Drawdown



# The water district's 5,000 percent error

By CURTIS CHUBB  
Special to the Herald

Why are a lot of people working hard to give pink slips to the current directors and general manager of the Post Oak Savannah Groundwater District? Let me explain.

When you talk about aquifers, you are talking about slow-moving geological events. Sometimes it takes more than a decade for the effects of over-pumping to be noticed—the effects may then be irreversible. So, don't let the fact that water is flowing from your well today keep you from realizing that the groundwater district's 5,000 percent error will have serious effects on the Carrizo-Wilcox Aquifer.

The policy decision made by the groundwater district that stands above all of their other wrong decisions is to "approve all permit applications." This one decision has already put the future of our two counties at risk. State law does not require the approval of all permit applications—instead, state law requires groundwater districts to protect and conserve the aquifers.

The district's decision to over-permit the aquifers and their total refusal to consider citizens' demands for change are bad enough. But the county judges and commissioners who appoint the directors and who continue to defend them share the blame for what the district has done to our two counties.

Although the groundwater district asserts that "approval of all permit applications" is a "model" management plan, in actuality it is the "absence" of a management plan. As one of the leading groundwater attorneys in Texas recently told me, "Anybody can approve all permit applications."

## GUEST

### OPINION

They are massive; formed 5 to 10 million years ago; and composed of sand, gravel, and clay.

Another alarming parallel is that in the 1950s, people were led to believe Ogallala groundwater was inexhaustible; just as people currently are being told that Carrizo-Wilcox groundwater is inexhaustible. That myth for the Ogallala was disproven in the 1960s when farmers were told that Ogallala groundwater was actually "geologic water" because most of it was deposited millions of years ago and "when it's gone, it's gone."

Because of its low recharge rate, the Carrizo-Wilcox is also vulnerable to being depleted. A 1936 report by the Texas Board of Water Engineers documented the presence of several springs in Milam County and that most wells were less than 40 feet deep—suggesting that aquifer levels are lower now. As stated by an early hydrogeologist named C.V. Theis: "All water discharged by wells is balanced by a loss of water somewhere."

Although the groundwater district doesn't publicize the total amount of pumping permits for the Carrizo-Wilcox, we know for sure that they have issued 111,000 acre-feet/year of pumping permits to Blue Water Systems and Alcoa. But be aware that the total for Carrizo-Wilcox pumping permits is much higher.

So, how much Carrizo-Wilcox groundwater is recharged per year? According to University of Texas experts, deep recharge for the Carrizo-Wilcox in our two counties is about 2,000 acre-feet/year. Although the total

"trigger point" you ask? Simple, they reduce the permitted (not the actual pumping) volume by "up to" 2 percent per year. The water marketers have already developed a response plan if this action occurs: apply for more pumping permits which the district has publicly stated will be approved.

But, I wonder if the groundwater district has even thought about how much they will have to reduce the pumping to stop the aquifer from dropping further than the "trigger point" when it is reached. If they have, they don't talk about it.

To stop the Carrizo-Wilcox from dropping further than the "trigger point" level, they will have to reduce actual pumping to the deep recharge rate of 2,000 acre-feet/year. Alternatively, the district could work to increase the deep recharge rate by "recharge enhancement" which is one of their stated management objectives.

The over-pumping would have at least two other undesirable effects. The over-pumping would siphon groundwater that would have been the aquifer's contribution to river baseflows. Also, bordering aquifers would lose groundwater to the Carrizo-Wilcox.

If the present directors and general manager had not decided to over-permit the Carrizo-Wilcox by more than 5,000 percent, not only would our aquifer be protected, people would not invest large sums of money in pumps and distribution systems based on unsustainable groundwater pumping rates.

If we don't act now to correct the 5,000 percent error, I think it is highly likely that the following telephone conversations will take place in 2040:

Groundwater District: "Yes, that's right. Due to over-permitting by the

to us by the district back in 2008. Also, we have invested \$45 million in pipelines with millions more spent for right-of-way easements and groundwater leases. In addition, we have paid the district over \$50 million in fees over the last 35 years. Now, they tell us that they made a mistake in over-permitting the aquifers and we can't pump 90 percent of the groundwater permitted to us."

State Senator: "First, I want to thank you for your generous donations to my campaigns. Second, I will take care of this. The district's reckless over-permitting of the aquifers does not justify them cutting off water supply to the cities which depend on you."

CLICK—then one day later;

State Senator: "Governor, I just wanted you to know that I am submitting a bill today to prevent a small rural groundwater district from cutting off the water supply to several cities in the capital area."

CLICK—then three months later;

Curtis Chubb: "Bill, I just received a certified letter from the groundwater district telling me that they are cutting back groundwater pumping permits by 90 percent for everybody

See Page 11

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Because the district has already approved pumping permits in numbers which are astronomical; it may be difficult to prevent the Carrizo-Wilcox Aquifer from going dry.

You can see first-hand what happens when water is pumped faster than it is replaced by driving out to the Highland Lakes which supply Austin's water. The once beautiful lakes have been drained to 40 percent of capacity because pumping exceeds their recharge from drought-starved rivers flowing into the lakes.

A similar fate awaits aquifers which are pumped more than they are recharged – aquifer water levels will drop as has already happened to the Ogallala Aquifer in the Texas Panhandle. The Ogallala has been over-pumped since the 1940s and its water levels have dropped so drastically that the region's economy is threatened – land prices have already plummeted.

There are many parallels between the Carrizo-Wilcox and Ogallala aquifers.

recharge from rainfall is about 25,000 acre-feet/year; only about 2,000 acre-feet/year (called deep recharge) reaches the aquifer's storage areas – with the rest being evaporated or discharged into rivers.

That means the district has issued more than 111,000 acre-feet/year of pumping permits even though there is only 2,000 acre-feet/year of recharge; the groundwater district has over-permitted the Carrizo-Wilcox by at least 5,000 percent – the 5,000 percent error.

When questioned about why they have over-permitted the Carrizo-Wilcox by 5,000 percent, the groundwater district people will patiently explain that they only care about actual pumping. And they further explain, not to worry because when the groundwater levels drop to pre-determined "trigger points" – they will take action to protect the aquifers. One "trigger point" is a 300-foot drawdown.

What do they do when the aquifers drop to the

groundwater district in the early years; you have to cut back pumping by 90 percent. Otherwise the aquifers will be depleted more than they are now."

Water Marketer Blue: "Thank you for the phone call."

CLICK – then 10 seconds later:

Water Marketer Blue: "Senator, we hope you can help us with a problem. The groundwater district just called to tell us that we have to cut back our pumping by 90 percent. We based all of our water supply contracts with cities around Austin on the 80,000 acre-feet/year of groundwater permits issued

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---

## WATER FROM PAGE 5

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except Water Marketer Blue. Remember when we tried to tell people this would happen back in 2012 and we were slandered?"

Bill Graham: "I received the same letter. But I also received a letter from Water Marketer Blue letting me know that if I need water, they will gladly supply it because they have lots of it."

---

## DIXON FROM PAGE 4

---

While victims can make safety plans on their own, it is often helpful to enlist the assistance of trained professionals. We are more than happy to work on this plan for you here in Cameron. Law enforcement officers, can help a victim determine which options will best enhance their safety and will work to devise a safety plan to address each unique situation and circumstance. Here in Cameron we have the Family Violence Unit which can be instrumental in helping someone develop this plan.

When safety planning, victims can consider what is known about the stalker, the people who might help, how to improve safety in one's environment, and what to do in case of an emergency. The average stalking case lasts approximately two years, therefore safety planning must begin when the victim first identifies the stalking behavior and continue throughout the duration of the case. Safety plans need to be re-evaluated and updated continuously as the stalker's behavior, the victim's routines, and access to services and support changes.

Victims are encouraged to keep a log of all stalking behaviors including e-mails and phone messages. The log can

### CLICK

The rice farmers who depend on LCRA for water already know that the Legislature can control water supplies.

We need to convince the county judges and commissioners that we need new directors and a new general manager NOW – and also we need to change the legislation so that the people, not one or two power brokers, have a voice in how our groundwater is managed. Hopefully, we still have time

to correct the 5,000 percent error. You can contact me at [waterwatchdogs@sbcglobal.net](mailto:waterwatchdogs@sbcglobal.net).

*Dr. Chubb was awarded a doctor of philosophy by The Johns Hopkins University and after retiring from his tenured faculty position at The University of Texas Southwestern Medical Center at Dallas has published over 1,000 articles about groundwater in Texas.*

the stalking to the police or apply for a protective order. This log is vital. Keep records of the contacts and the times you have seen the individual watching you or being in the same place you are in. Check for electronic stalking as well. Write down anything and everything that people may tell you the stalker said. Pay attention to what is said at local restaurants and coffee shops.

Many people have discovered Facebook, Twitter, Instagram or other electronic media's have become an avenue to be stalked. Many victims have found simple ways to make the stalking affect them less. They may ask someone else to pick up and sort their mail, get a second phone number given only to trusted people, or have people at work or school screen phone calls or inform the police if the stalker shows up.

Relying on trusted friends and family is important for victims of stalking to help keep victims safer and also reduce the isolation and feelings of desperation that stalking victims may experience. Fundamentally, stalking is a series of actions that puts a person in fear for their safety. The stalker may follow you, harass you, call you on the telephone, watch your house, send you mail you don't want, or act in some other way that frightens you.

The exact legal definition varies from state to state, but all states now have some

fear can generally be referred to as stalking, whether or not it meets a state's exact legal definition. Stalkers use a wide variety of methods to harass their targets. The inventiveness, persistence, and obsessive nature of stalkers is almost unimaginable, until you have experienced being the target. Stalking is a serious, potentially life-threatening crime. Even in its less severe forms, it permanently changes the lives of the people who are victimized by this crime, as well as affecting their friends, families, and co-workers.

Law enforcement is only beginning to understand how to deal with this relatively new crime. Stalking is more common than you might think, although it is hard to get accurate figures because law enforcement organizations have only recently started keeping records. Best estimates indicate that as many as 1.4 million Americans are stalked each year, and that 1 in 20 women will become targets of stalking behavior at least once during their lifetimes. Many men are also stalked.

If you feel you are the victim of stalking or harassment, call the Cameron Police Department and let us document these actions. Whether you are a teacher, mother, father, ex girlfriend/boyfriend, coach, secretary, political adversary, nurse, factory worker, fireman, lawyer or police officer, stalking



# Governor Abbott Vetos House Bill 2647

Saturday, June 20, 2015 • Austin, Texas • Veto Statement

Pursuant to Article IV, Section 74, of the Texas Constitution, I, Greg Abbott, Governor of Texas, do hereby disapprove of and veto House Bill No. 2647 as passed by the Eighty-Fourth Texas Legislature, Regular Session, because of the following objections:

Texas landowners have a constitutionally protected right to access the groundwater under their property. Government action affecting that vested right must be based only on very careful deliberation, which ideally should take place at the local level based on local needs and concerns. Statewide groundwater rules are less able to take vitally important local interests into account.

Under current law, local groundwater conservation districts have the ability to implement specific management strategies, such as curtailment, that prioritize certain users as deemed appropriate after local deliberation. House Bill 2647 eliminates local discretion by mandating the preferential treatment of certain types of groundwater use over other important uses. If one class of landowners is automatically exempt from curtailment, others will have to bear an unequal burden when water is scarce. Enshrining in state law the rule that groundwater conservation districts will give priority to one class of water users could result in the abridgement of other users' groundwater rights. Groundwater management should be based on sound science and public input at the local level, not on one size-fits-all state mandates like House Bill 2641.

Since the Eighty-Fourth Texas Legislature, Regular Session, by its adjournment has prevented the return of this bill, I am filing these objections in the office of the Secretary of State and giving notice thereof by this public proclamation according to the aforementioned constitutional provision.

GREG ABBOTT  
Governor



CLAYTON WILLIAMS ENERGY, INC.



JOLYNNE DERIGO  
Legal Assistant  
(432) 688-3424  
[jderigo@claytonwilliams.com](mailto:jderigo@claytonwilliams.com)

February 20, 2015

Mr. Gary Westbrook  
Post Oak Savannah Groundwater Conservation District  
P. O. Box 92  
Milano, TX 76556

Re: Clayton Williams Energy, Inc.  
Invoice # 5308 and Invoice # 5309

Dear Mr. Westbrook:

Enclosed are two checks in payment of the following invoices:

Check No. 316745 for \$1,000.00 in payment of Invoice No. 5308 – fine for production of groundwater without a permit (Marshall 140)

Check # 316744 for \$426.00 in payment of Invoice No. 5309 – Application fees for Frac'ing Marshall 140, Leases 1, 2 and 3, and Production Fees, Marshall 140, Leases 1, 2 and 3:

Very truly yours,

Jolynne Derigo  
Assistant to T. Mark Tisdale

/jld  
Enclosures



CLAYTON WILLIAMS ENERGY, INC. 6 DESTA DRIVE, STE 1100,

MIDLAND, TX 79705

REORDER 899 - U.S. PATENT NO. 5530290, 5578500, 6641103, 6785353, 6994354, 0030000

INVOICE DATE	INVOICE NUMBER	VOUCHER NUMBER	DESCRIPTION	AMOUNT
02/16/15	CK REQ 2/16/	001549535		1000.00
CHECK NUMBER		CHECK DATE	VENDOR NUMBER	VENDOR NAME
316745		2/20/15	89212	POST OAK SAVANNAH GROUNDWATER

THIS CHECK IS VOID WITHOUT A BURGUNDY & GRAY BORDER AND BACKGROUND PLUS A KNIGHT & FINGERPRINT WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW



CLAYTON WILLIAMS ENERGY, INC.

6 DESTA DRIVE, STE 1100,  
MIDLAND, TX 79705  
(432) 682-6324

56-382  
412

Wells Fargo Bank Ohio, N.A.  
Van Wert, OH

CHECK NO. 316745 DATE 2/20/15

AMOUNT
****1,000.00

PAY \*\*\*\*\*1,000 DOLLARS \*\*\*00 CENTS

CLAYTON WILLIAMS ENERGY, INC.

TO THE ORDER OF

POST OAK SAVANNAH GROUNDWATER  
CONSERVATION DISTRICT  
POSGCD  
P O BOX 92  
MILANO TX 76556

89212

*Clayton Williams*

VOID AFTER 180 DAYS

⑈ 3 1 6 7 4 5 ⑈ ⑆ 0 4 1 2 0 3 8 2 4 ⑆ 9 6 0 0 0 0 5 3 5 5 ⑈



CLAYTON WILLIAMS ENERGY, INC. 6 DESTA DRIVE, STE 1100,

MIDLAND, TX 79705

INVOICE DATE	INVOICE NUMBER	VOUCHER NUMBER	DESCRIPTION	AMOUNT
02/16/15	CK REQ 2/16/	001549534		426.00
CHECK NUMBER	CHECK DATE	VENDOR NUMBER	VENDOR NAME	
316744	2/20/15	89212	POST OAK SAVANNAH GROUNDWATER	

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CLAYTON WILLIAMS ENERGY, INC.

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Van Wert, OH

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CONSERVATION DISTRICT  
POSGCD  
P O BOX 92  
MILANO TX 76556

89212

VOID AFTER 180 DAYS

⑈ 316744⑈ ⑆ 041203824⑆ 9800005355⑈



**Post Oak Savannah Groundwater Conservation District**

310 East Avenue C  
P. O. Box 92  
Milano, Texas 76556

Phone: 512-455-9900  
Fax: 512-455-9909  
Email: [posgcd@tconline.net](mailto:posgcd@tconline.net)  
Website: [www.posgcd.org](http://www.posgcd.org)

**Gary Westbrook, General Manager**

August 6, 2012

Mr. Michael Cardenas  
Anadarko E&P Company, LP  
2870 N. Harvey Mitchell Pkwy  
Bryan, TX 77807

Dear Mr Cardenas:

This letter follows-up on the report made by Anadarko E&P Co., LP, of the total volume of water transported out of the District in prior years. The report shows that you transported groundwater out of the District without a transport permit issued by the District.

The transported groundwater out of the District without a transport permit is a violation of the rules. The minimum fine established by the Board for that violation is \$1,000.00. As general manager, the only authority that I have to resolve this matter requires me to impose and collect the minimum fine. Therefore, the minimum fine of \$1,000.00 is due and payable to the District within thirty (30) days, unless you appeal this matter to the Board. Please note that upon resolution of this matter, and approval of the Board of Directors of your pending application to transported groundwater out of the District which is set for hearing and consideration on August 14, 2012 and contingent upon resolution of this matter, fees due to the District for groundwater transported out of the District will be adjusted accordingly.

Please know that in an effort to find alternative resolutions to this matter I have spoken with the general counsel for the District regarding this, and, because of material future issues and the required equal enforcement of the rules, he strongly recommended the above actions.

Sincerely,

A handwritten signature in black ink that reads "Gary Westbrook". The signature is written in a cursive style.

Gary Westbrook  
General Manager  
Post Oak Savannah GCD  
Cc: District files

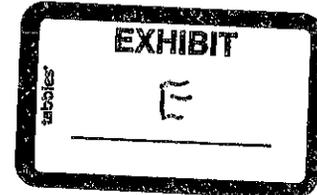


223 W. Anderson Lane, Ste. A-105  
Austin, Texas 78752  
512-323-5778  
512-323-5773  
[www.mckamiekrueger.com](http://www.mckamiekrueger.com)

December 10, 2013

Via CM/RRR No. 7196 9008 9111 0145 6217

Cindy Vrazel  
Abstracts of Judgment  
Milam County Clerk's Office  
102 S. Fannin St., Suite 5  
Cameron, TX 76520



Re: Cause No. CV34979; Post Oak Savannah Groundwater Conservation District v. Roy David Crush, Jr., In the 20<sup>th</sup> Judicial District Court of Milam County, Texas

Dear Cindy:

Thank you for providing instructions on requesting an abstract of judgment.

Attached please find our check in the amount of \$64.00 for the preparation of eight (8) abstracts of judgment in the above-referenced matter. We will be filing these abstracts of judgment in the real property records of Milam and surrounding counties.

For your convenience, I have attached a copy of the Notice of Court Order and a copy of the Final Default Judgment.

Date of Judgment: June 17, 2013  
Penalties/Amount of Judgment: \$100,000.00  
Prejudgment interest: 481 days at 10%  
Attorneys Fees: \$5,000.00  
Court Costs (You are to provide this figure)

Please return the Abstracts to the undersigned. Please contact me at 830.708.2626 or 512.323.5778 with any questions. The attorney on this case is Barbara L. Quirk and her contact phone no. is 210.546.2122 and she will be happy to answer any questions as well.

Thank you for your consideration and please let us know if you have any questions.

**FILED**

At 8:00 o'clock A M  
DEC 12 2013 CV

*Cindy Fechner*  
CINDY FECHNER  
CLERK, MILAM COUNTY, TEXAS

Enclosures: As Stated

Sincerely,

Lisa O'Sullivan  
Paralegal to Barbara L. Quirk

**SAN ANTONIO**  
941 Proton Rd.  
San Antonio, Texas 78258  
(210) 546-2122  
Fax (210) 546-2130

**DALLAS**  
2007 N. Collins Blvd., Suite 501  
Richardson, Texas 75080  
(214) 253-0000  
Fax (214) 253-0000

**AUSTIN**  
223 W. Anderson Lane, Suite A105  
Austin, Texas 78752  
(512) 323-5778  
Fax (512) 323-5773

**LAREDO**  
719 Chihuahua, Suite 102  
Laredo, Texas 78040  
(956) 723-5092  
Fax (956) 723-1327

**COPY**

CAUSE NO. 34979

POST OAK SAVANNAH  
GROUNDWATER CONSERVATION  
DISTRICT  
Plaintiff,

V.

ROY DAVID CRUSH, JR.,  
Defendants,

§  
§  
§  
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§  
§

IN THE DISTRICT COURT OF

20th JUDICIAL DISTRICT

MILAM COUNTY, TEXAS

**FINAL DEFAULT JUDGMENT**

On June 17, 2013, came on to be heard Plaintiff's Motion for Default Judgment filed by POST OAK SAVANNAH CONSERVATION DISTRICT (hereinafter "Plaintiff" or "District") after Defendant, ROY DAVID CRUSH, JR. (hereinafter "Defendant") failed to file an answer in this case. Plaintiff appeared through its attorney. Defendant, having been duly served with citation and a copy of Plaintiff's Original Petition, did not appear and answer.

At the hearing, the Court determined it had jurisdiction over the subject matter and the parties in this proceeding, and the citation and proof of service were on file for at least ten days before the motion was filed. After considering the pleadings, the papers on file in this case, and the evidence Plaintiff presented on liability, penalties, and attorney fees, the Court finds Defendant did violate District rules promulgated pursuant to Section 36.102 of the Texas Water Code and grants Plaintiff's motion for default judgment.

The Court hereby RENDERS judgment for Plaintiff, POST OAK SAVANNAH GROUNDWATER CONSERVATION DISTRICT.

**COPY**

1. Accordingly, the Court orders that Plaintiff recover the following from Defendant:

a. Penalties in the amount of \$ 100,000<sup>00</sup> (up to \$10,000 per day for each day the violations continued is provided for in the Texas Water Code);

b. Prejudgment interest on the penalties awarded at the rate of 10 % from 2/22/12 until the date of this judgment, in the amount of \$ T.B.D.;

c. Reasonable and necessary attorney fees in the amount of \$ 5000<sup>00</sup> for the prosecution of this case through judgment;

d. Court costs; and

e. Postjudgment interest on all of the above at the rate of 10 % interest, compounded annually, from the date this judgment is entered until all amounts are paid in full.

2. The Court further orders that if Defendant unsuccessfully appeals this judgment, Plaintiff will additionally recover from Defendant the amount of \$ 10,000<sup>00</sup>, representing the anticipated reasonably and necessary fees and expenses that would be incurred by Plaintiff in defending the appeal.

3. This judgment finally disposes of all claims and all parties.

4. The Court orders execution to issue for this judgment.

5. The Court orders the Clerk of the Court to provide a copy of this judgment to Defendant at the following last known address:

Roy David Crush, Jr.  
4631 FM 811  
Centerville, Texas 75833

6. The Court further orders:

\_\_\_\_\_

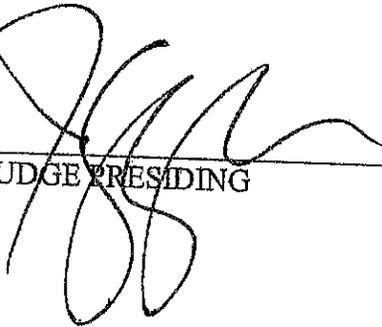
SIGNED on the

JUNE 17<sup>th</sup>

of

2013.

JUDGE PRESIDING



FILED

At 9:45 o'clock A.M.

JUN 17 2013 *mc*

*Cindy Fechner*  
CINDY FECHNER  
DISTRICT CLERK, MILAM COUNTY, TEXAS



**SECTION 16.**  
**MANAGEMENT OF WATER AVAILABILITY AND PRODUCTION**

**RULE 16.1. MANAGEMENT ZONES.** Groundwater availability will be conserved, preserved and protected by well spacing, permit requirements, and/or limiting water drawdown levels within the Management Zones listed in Section 5 of the Management Plan. [Amended June 12, 2012]

**RULE 16.2. GENERAL.** All permits issued by the District that authorize the production of water shall be subject to the terms, conditions and provisions of this Section 16. All other terms, conditions and provisions of these rules shall be and remain in full force and effect. Any conflict between this Section 16 and any other Rule will be resolved by the Board upon a written request being made.

**RULE 16.3. MONITORING OF GROUNDWATER.** The District will monitor estimated total annual production, water quality, and the water levels. An analysis of the monitoring data will be reported at least once every three years. If, within a Management Zone, the drawdown based on monitored groundwater levels, or total estimated annual production, or projected average water level drawdowns, reach a threshold established in Rule 16.4, then, as determined appropriate by the Board, the District will give notice to well permittees in the affected Management Zone(s) as provided in Rule 16.4. The District will take action as found appropriate by the Board, based on the analysis of measured water levels, projected average water level drawdowns, permitted production, current and projected total estimated annual production and relevant hydrogeologic and water resource information including, but not limited to surface water availability and drought conditions, and review and evaluate the current and predicted water availability. The District may reduce both the maximum acre feet of water per acre of land for which the District may issue a permit and/or the volume of water authorized to be produced under any permit issued by the District for a Management Zone, as a result of the groundwater availability, total estimated annual production, or groundwater level drawdown within a Management Zone. The District may also adopt rule changes for a Management Zone if production in that Management Zone is shown to adversely impact groundwater conditions in another Management Zones. [Amended July 12, 2005] [Amended June 12, 2012]

**RULE 16.4. ACTIONS BASED ON MONITORING RESULTS.** Monitoring and threshold levels will be used to initiate appropriate responses designed to help achieve the DFCs, conserve and preserve groundwater availability and protect groundwater users. Three threshold levels are adopted to help guide these actions. Each threshold level provides for an increased level of response based on the change in production or water levels associated with a Management Zone. The threshold levels are: Level 1; Level 2; and Level 3. [Amended June 12, 2012]

1.Threshold Level 1.Threshold Level 1 will be reached, and additional study and investigation may be undertaken as appropriate, at such time as: [Amended June 12, 2012]

a. Total estimated annual production is greater than 70% of the Modeled Available Groundwater (MAG) value listed in Section 8 of the Management Plan;

b. An average groundwater drawdown, calculated from monitored water levels for an aquifer, is greater than 60% of the average groundwater drawdown adopted as a DFC for that aquifer in Section 7 of the Management Plan;

c. An average groundwater drawdown, calculated from monitored water levels, for a Shallow Management Zone is greater than 60% of the threshold value for average drawdown in that Shallow Management Zone listed in Section 7 of the Management Plan; or

d. Projected average water level drawdowns, calculated with a District approved methodology, indicate that a DFC for 2060 that is listed in Section 7 of the Management Plan will be exceeded within 15 years.

2. Threshold Level 2. Threshold Level 2 will be reached, and a review of the Management Plan, rules and regulations may be initiated, at such time as: [Amended June 12, 2012]

a. Total estimated annual production is greater than 85% of the Modeled Available (MAG) value listed in Section 8 of the Management Plan;

b. Average groundwater drawdown, calculated from monitored water levels, for an aquifer is greater than 80% of the average groundwater drawdown adopted as a DFC for that aquifer in Section 7 of the Management Plan; or

c. An average groundwater drawdown, calculated from monitored water levels, for a Shallow Management Zone is greater than 80% of the threshold value for average drawdown in that Shallow Management Zones listed in Section 7 of the Management Plan;

3. Threshold Level 3. Threshold Level 3 will be reached, and the Board will consider amendments to the Management Plan rules and regulations at such time as an average groundwater drawdown, calculated from monitored water levels, for an aquifer is greater than 95% of an average groundwater drawdown adopted as a DFC for that aquifer in Section 7 of the Management Plan. [Amended June 12, 2012]

4. The threshold levels will be administered and applied separately to each Management Zone. As part of the evaluations and determinations, the District will consider the pumping-induced impacts to groundwater resources that occur between or among management zones. The evaluation will determine if pumping or production in one management zone is contributing to adverse impacts to groundwater conditions in another management zone. [Amended June 12, 2012]

a. If Threshold Level 1 is exceeded, the District may consider performing studies to provide information on aquifer properties, aquifer recharge, aquifer and surface

water interactions, and aquifer pumping. The results may be used to improve the models, tools, and methodologies used to analyze data and predict future groundwater levels and availability.

- b. If Threshold Level 2 is exceeded, the District may re-evaluate the Management Plan and rules regarding management zones, recharge estimates, the collection and analysis of monitoring data, and proposed changes to DFCs for consideration in the joint planning process.
- c. If Threshold Level 3 is exceeded, the District will conduct a public hearing to discuss the status of the aquifers and develop a Level 3 Response Action Work Plan focused on achieving the District's goals and objectives, including the DFCs. The work plan will be completed within 6 months after the first public hearing and will be made available to the public through the District's web site.
- i. The notice will include the cause for the notice, the fact that an additional review, evaluation and study is being made, and that a reduction of the maximum allowable production per acre and/or the permitted production may be approved following the review and evaluation. [Amended July 12, 2005]
- ii. The general manager, in consultation with the district geohydrologist, will review and evaluate the permit applications pending, the permits issued and the records of the District, any estimates of total production by exempt wells, and increase the frequency or locations of water drawdown monitoring within the Management Zone. If the notice is due to the average drawdown based on monitored water levels then an evaluation of the reasons for the drawdown will be included in the review. [Amended July 12, 2005] [Amended June 12, 2012]
- iii. The general manager will promptly report to the Board that notices have been, or are being, given and the event that required the notice to be given. The general manager will advise the Board of the plan for review and evaluation recommended under (b) and, if the plan will be implemented over a period of more than one month, during the evaluation, review, study and any additional monitoring period, the general manager will keep the Board advised of the progress of the review and evaluation. Upon completion of the review, evaluation and any additional monitoring, the general manager and district geohydrologist will make a final report to the Board, together with their recommendation for action.
- iv. If the general manager, in consultation with the district geohydrologist, finds the evaluation, study, review and/or monitoring supports a recommendation that an adjustment of permitted production is recommended for a Management Zone or another Management Zone in which threshold level 3 was reached, the

recommendation shall be consistent with the finding and provide supporting documentation for the limitation. [Added July 12, 2005] [Amended June 12, 2012]

- v. The general manager may, after consultation with the district geohydrologist and in combination with or in addition to the above, recommend any action or combination of actions set forth in Rule 16.4. [Amended June 12, 2012]

5. The terms, provisions and the actions provided for in this Rule 16.4 are in addition to and not in lieu of the terms, conditions and provisions of any other rule or provision of this Section 16. This rule does not limit the authority of the Board to act pursuant to any other rule. The Board shall have the discretion to take any action authorized by this Section 16. [Amended June 12, 2012]

**RULE 16.5. REDUCTIONS REQUIRED BY REGULATORY ACTION.** Notwithstanding any other term or provision of these rules, the Board may proportionately reduce the maximum amount of water that may be permitted per acre and volume of water authorized to be produced under any permit issued by the Board, and may adjust the thresholds established in Rule 16.4, as required by state law or by a regional plan or an area or regional agreement mandated by state law and which, by authority of state law, requires water availability or production to be limited or regulated based on water availability within a geographic area that includes land in more than one groundwater conservation district. In the event permitted production or water level drawdown will be reduced by reason of any such state law or regulation, the District will give notices as provided in Rule 16.4, hold one or more public hearings on the resulting limitations, and, to the extent permitted by state law, or the regional plan or agreement, implement any such reductions in a manner and over a period consistent with this Section 16. [Amended June 12, 2012]

**RULE 16.6. ADJUSTING MAXIMUM PRODUCTION PERMITTED.** The maximum groundwater production permitted per acre, the permitted production under any permit issued by the District, and the water drawdown level for a Management Zone may be adjusted as follows: [Amended July 12, 2005]

1. If the water drawdown level within a Management Zone, or in an adjacent zone in which the water drawdown level is impacted by production in such Management Zone, exceeds the water drawdown Threshold Level 3 in Rule 16.4, the maximum water production permitted per acre for the Management Zone and the water authorized to be produced under any permit issued by the District for that zone may be reduced. The required reduction will be determined by the Board based on the evaluation and the evidence received by the Board. The production in one Management Zone may be reduced to the extent that production in that Management Zone is impacting water drawdown levels in an another ZONE. [Amended July 12, 2005] [Amended June 12, 2012]
2. The maximum allowable production of 2 acre feet of groundwater per acre of land, provided in Rule 5.1.2, may be reduced, and the maximum allowable production may be established or reduced for any one, or more than one, Management Zone(s). [Amended July 12, 2005]
3. Production authorized under permits issued by the District for any Management Zone may be

reduced on a schedule to, when considered together with future permits for which the authorized production per acre will be at the lower maximum allowable production per acre, generally over a period not to exceed 40 years, reduce groundwater production by an amount required to return the water level in the Management Zone to levels deemed acceptable by the Board based on evidence provided by the general manager, in consultation with the district geohydrologist. [Amended July 12, 2005] [Amended June 12, 2012]

4. The Board may adjust permitted production within a Management Zone, based upon the results of a review, evaluation, study, and monitoring, and any evidence presented at a public hearing, if it finds the adjustment is appropriate. [Amended July 12, 2005] [Amended June 12, 2012]

**RULE 16.7. PERMIT LIMITATIONS AND REDUCTIONS.** The maximum allowable production of water authorized by a permit may be limited, adjusted and reduced as follows:

1. If the maximum allowable production of 2 acre feet of groundwater per acre of contiguous land is reduced for a Management Zone, or if any such reduced maximum of allowable production is thereafter reduced again, a new permit may not be issued for the production of more water than is established under this Section 16 as the maximum allowable production of water per acre of land for the Management Zone; [Amended June 12, 2012]
2. Excluding production authorized by a historic use permit, and production authorized by wells exempt under Rule 7.10(1), the production of water authorized by any permit issued by the District for the production of water is subject to limitation, adjustment and reduction;
3. The volume of water authorized by permit to be produced in a Management Zone may be reduced by up to two percent per year with the reduction beginning twelve months after a decision by the Board that such reduction is reasonably required for the conservation and preservation of groundwater, or the protection of the aquifer or groundwater users, within the Management Zone; and [Amended June 12, 2012]
4. If the Board finds it is necessary to reduce the maximum allowable production per acre, or the permitted production for any Management Zone, more quickly than is provided in Rule 16.7(3), to preserve and conserve groundwater or protect groundwater users within a Management Zone, or to implement reductions required under Rule 16.5, the Board shall establish a schedule for a phased reduction in the maximum allowable production or permitted production for the zone. [Amended July 12, 2005]

**RULE 16.8. EXCEPTIONS.** The following are exceptions to the rules set forth in this Section 16 for the limitation and reduction of production:

1. After a reduction of the maximum allowable permitted production per acre in a Management Zone, the maximum allowable production per acre of land for which a permit may be issued in the Management Zone shall not exceed the maximum allowable production per acre as modified or established under this Section 16; [Amended July 12, 2005]

2. Within the Trinity Zone groundwater availability will be preserved and conserved, and groundwater users will be protected, by well spacing and the maximum allowable production per acre provided in Rule 5.1.2;
3. The Queen City-Sparta and Yegua-Jackson Zones are recharge based zones with relatively low to moderate yield domestic and small municipal wells, and, in lieu of limiting water drawdown levels in this zone, during droughts permitted production may be temporarily reduced to protect groundwater users; and [Amended June 12, 2012]
4. The Board may, in addition to or in combination with any action authorized in this Section 16, take any action authorized in Section 17. [Added June 12, 2012]

**RULE 16.9 NOTICE AND HEARINGS.** A limitation, adjustment or reduction of the maximum allowable production of water per acre, or of the volume of water authorized to be produced under permits issued by the District, may be adopted by the Board at any time after written notice is given to the permit holders as provided in Rule 16.4 and a public hearing held, for which twenty days, or more, notice of such public hearing is published in one or more newspapers of general circulation in Milam County and Burleson County, Texas.

**RULE 16.10. REHEARING.** The owner or the operator of a well or well field for which permitted production is being reduced pursuant to this Section 16 may request a rehearing on a decision by the Board to reduce permitted production by more than ten percent in any five year period, or to make a reduction that exceeds two percent in any one year period. Except as otherwise specifically provided herein any such motion for rehearing must be in writing, state the nature of material additional evidence to be presented, and filed in the district office within thirty days after the date of the Board decision that is being appealed. Such rehearing request will not stay or abate the required reduction or production while the request is pending.

## **SECTION 17 DROUGHT CONTINGENCY**

**RULE 17.1. GENERAL.** The Board may, after a public hearing and finding that a drought condition of sufficient severity exists that it may adversely affect the groundwater availability of the aquifers, declare drought conditions. The rules regarding the spacing of wells and production of groundwater, and, to the fullest extent permitted by law, exemption from these rules, shall be subject to the terms, conditions and provisions of this Section 17 during a drought declared by the Board. Any conflict between this Section 17 and any other rule will be resolved by the Board upon written request. [Added June 12, 2012]

**RULE 17.2. DROUGHT MANAGEMENT.** The terms, provisions and conditions of Section 16 that provide for limitation, reduction or adjustment of authorized and permitted groundwater production are applicable and available to the Board for drought management purposes during drought conditions. [Added June 12, 2012]

**RULE 17.3. DROUGHT MANAGEMENT PLANS.** The District may enforce the terms,

provisions and conditions of drought management plans adopted by permittees of the District, and by entities that receive groundwater produced pursuant to a permit issued by the District. [Added June 12, 2012]

**RULE 17.4. THRESHOLD MONITORING AND ACTION.** The terms and provisions of Rule 16.7 are available to the Board and applicable during drought conditions. [Added June 12, 2012]



Summary of Production for Long-Term (40-yr) Permits Issued by Post Oak Savannah GCD

Aquifer	2008 Sum	2009 Sum	2010 Sum	2011 Sum	2012 Sum	2013 Sum	2014 Sum	5-yr Avg (act)
Brazos River Alluvium	14,256	10,507	18,708	24,448	15,850	19,240	15,063	18,661.8
Carrizo	848	446	1,052	1,773	1,329	433	1,307	1,178.8
Simsboro	3,614	11,165	10,954	17,355	12,545	14,307	15,668	14,165.8
Calvert-Bluff	201	222	186	256	158	585	151	267.2
No Assignment	428	764	808	1,822	1,003	735	601	993.8
Queen City	164	194	205	225	186	193	192	200.2
Sparta	243	334	563	678	754	751	564	662.0
Hooper	521	590	648	912	624	843	389	683.2
Yegua - Jackson	425	337	451	1,066	645	399	177	547.6

Aquifer	No. Permits	Permitted (act)	% Permitted
Brazos River Alluvium	336	46,971.19	25.97%
Carrizo	47	18,754.85	10.37%
Simsboro	127	103,891.72	57.43%
Calvert-Bluff	12	1,089.38	0.60%
No Assignment	61	3,096.14	1.71%
Queen City	15	1,387.37	0.77%
Sparta	27	1,800.70	1.00%
Hooper	21	2,624.91	1.45%
Yegua - Jackson	33	1,274.61	0.70%

Aquifer	Modeled Available Groundwater (MAG) (act)	% Produced (5-yr Avg)
Brazos River Alluvium	25,138	74%
Carrizo	7,059	17%
Simsboro	48,501	29%
Calvert-Bluff	1,038	26%
No Assignment	-	-
Queen City	502	40%
Sparta	6,734	10%
Hooper	4,422	15%
Yegua - Jackson	12,923	4%

Aquifer	Estimated Recreage (act)
Brazos River Alluvium	23,456
Carrizo	4,018
Simsboro	12,540
Calvert-Bluff	7,330
No Assignment	-
Queen City	8,812
Sparta	7,424
Hooper	2,391
Yegua - Jackson	22,459

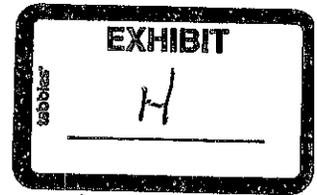
† Percentage of 5-year average produced as compared to total permitted.

‡ Percentage of 5-year average produced as compared to the MAG.

§ Per District Rules, as aquifer conditions and conditions of water use change, permitted amounts can be reduced or altered

Note: As drawdown approaches Desired Future Conditions (DFCs), permitted amount will be reduced.

**VALUES DO NOT INCLUDE SHORT-TERM LIMITED PERMITS ISSUED FOR OIL & GAS OPERATIONS**



## Post Oak Savannah Groundwater Conservation District

310 East Avenue C  
P. O. Box 92  
Milano, Texas 76556

Phone: 512-455-9900  
Fax: 512-455-9909  
Email: [bbazan@posgcd.org](mailto:bbazan@posgcd.org)  
Website: [www.posgcd.org](http://www.posgcd.org)

**Bobby Bazan, Water Resource Specialist**

January 17, 2014

«AddressBlock»

The Post Oak Savannah Groundwater Conservation District is required to keep a record of all groundwater production in our District on an annual basis for all non-exempt wells. This information is vital to the District's purpose, and is required by state law.

According to the Post Oak Savannah Groundwater Conservation District Rule # 7.14.6, each holder of a permit for a non-exempt well is required to submit a Water Use Report within 15 days after January 31<sup>st</sup> of each year. The District has recently adopted minimum penalties for violations of the District rules.

Attached for your convenience is a form provided by the District for use in fulfilling your requirement for the reporting years indicated. Please note that if your wells are aggregate, the total production must be less than the total permitted amount of all aggregate wells. District staff is always available to assist producers with and requirements of the District rules. Please make every effort to complete this form and return it to the District's offices before February 15, 2014 to avoid District action. Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to be "Bobby Bazan", written over a horizontal line.

Bobby Bazan  
Water Resource Specialist  
Post Oak Savannah GCD  
Cc: District files, District Board of Directors



## Post Oak Savannah Groundwater Conservation District

310 East Avenue C  
P. O. Box 92  
Milano, Texas 76556

Phone: 512-455-9900  
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Website: [www.posgcd.org](http://www.posgcd.org)



**Bobby Bazan, Water Resource Specialist**

March 20, 2014

[Insert Owner Name]  
[Insert Address]  
[Insert City, State, Zip]

The Post Oak Savannah Groundwater Conservation District is required to keep a record of all groundwater production in our District on an annual basis for all non-exempt wells. This information is vital to the District's purpose, and is required by state law.

According to District Rule 7.14.6 and/or 7.15.7, each holder of a permit for a non-exempt well is required to submit a Water Use Report within 15 days of January 31<sup>st</sup> each year. As of the date this letter was written, **you are 60 days late on submitting your Water Use Report.** The District has adopted rules that allow the district to impose penalties for violations of compliance.

Attached for your convenience is a form provided by the District for use in fulfilling your requirement for the reporting years indicated. Please note that if your wells are aggregate, the total production must be less than the total permitted amount of all aggregate wells.

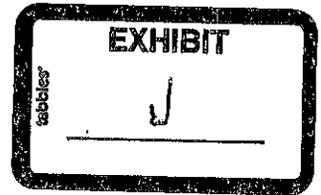
District staff is always available to assist producers with any requirements of the District rules. **Please fill out the included form and return within 30 business days to avoid District action.** Should you have any questions, please do not hesitate to call.

Respectfully,

Bobby Bazan

Water Resource Specialist  
Post Oak Savannah GCD

CC: District Files



**Groundwater Management Plan**

**Adopted October 9, 2012**

**Post Oak Savannah Groundwater Conservation District  
310 East Avenue C  
P. O. Box 92  
Milano, Texas 76556  
Phone: 512 / 455 - 9900  
Fax: 512 / 455 - 9909  
Website: [www.posgcd.org](http://www.posgcd.org)  
General Manager: Gary Westbrook**

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# POST OAK SAVANNAH GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

## 1. DISTRICT MISSION

The Post Oak Savannah Groundwater Conservation District (POSGCD) mission is to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and to protect groundwater users, by adopting and enforcing Rules consistent with state law. The District will accomplish this mission by imposing spacing requirements, regulating production, requiring permits for wells and production, establishing water drawdown levels and monitoring groundwater levels and production, making appropriate adjustments to allowable and permitted production, and encouraging conservation.

## 2. TIME PERIOD OF THIS PLAN

This plan will become effective upon adoption by the POSGCD Board of Directors ("Board") and approval as administratively complete by the Texas Water Development Board. The plan will remain in effect for five (5) years after the date of certification, and thereafter until a revised plan is adopted and approved.

## 3. BACKGROUND

The POSGCD was created in Milam and Burleson counties by HB 1784, 77th Legislature, 2001, and a local confirmation election in November 2002. The purpose of this bill is to provide a locally controlled groundwater district to conserve and preserve groundwater, protect groundwater users, protect and recharge groundwater, prevent pollution or waste of groundwater in the central Carrizo-Wilcox area, control subsidence caused by withdrawal of water from the groundwater reservoirs in that area, and regulate the transport of water out of the boundaries of the districts. The POSGCD has 10 directors, 5 from each county. It does not have the power to tax and receives all of its revenue from fees imposed on municipal/commercial pumpers and transporters of groundwater. Successful confirmation elections were held in November 2002 in both counties in accordance with Sections 36.017, 36.018, and 36.019, Water Code, and Section 41.001, Election Code.

The POSGCD is a member of Groundwater Management Area 12 (GMA 12) and Groundwater Management Area 8 (GMA 8), whose areal extents are shown in Figure 1. To help establish desired future conditions for the relevant aquifers within the boundaries of GMA 12 and GMA 8, POSGCD will consider groundwater availability models and other data or information. As part of the joint planning process, POSGCD will establish management goals and objectives that are consistent with the desired future conditions adopted by GMA 8 and GMA 12.

## 4. GROUNDWATER RESOURCES

Located within the District's boundaries are portions of the Trinity, Wilcox, Carrizo, Queen City, Sparta, Yegua/Jackson, and the Brazos River Alluvium Aquifers. Figure 2 shows the locations of the outcrops of these aquifers based on the surface geology mapped by Barnes (1994), Kelley and others (2004), Deeds and others (2004), and Shah and Houston (2007). In Figure 2, the outcrop area for the Carrizo Aquifer includes the outcrop area associated with the Reklaw Formation, the outcrop area for the Queen City Aquifer includes the outcrop area associated with the Weches Formation, and the outcrop area for the Sparta Aquifer includes the outcrop area for the Catahoula Formation. Within the District, the Trinity Aquifer does not outcrop and is overlaid primarily by the Midway Formation. Table 4-1 provides the area associated with each aquifer outcrop.

**Table 4-1. Aquifer Outcrop Areas in the District**

<b>Aquifer and/or Geologic Formation</b>	<b>Outcrop Area (square miles)</b>
Midway Formation	346
Wilcox	348
Carrizo/Reklaw	70
Queen City/Weches	159
Sparta	76
Cook Mountain/Yegua-Jackson /Catahoula	321
Brazos River Alluvium	161
Shallow Alluvium	215
Total	1,699

(a) **Trinity Aquifer.** The Trinity Aquifer is located in the northwest corner of Milam County. The Trinity Aquifer refers to four geological formations considered to be relevant aquifers by GMA 8. These four geologic formations are the Paluxy Aquifer, the Glen Rose Aquifer, the Hensell Aquifer, and the Hosston Aquifer. The top and bottom surfaces for these four geological formations are defined by their model layer in the Northern Trinity GAM (Bene and others, 2004).

(b) **Wilcox Aquifer.** The Wilcox aquifer is a major regional aquifer system. The outcrop of the Wilcox Aquifer forms a southwest to northeast trending belt through central Milam County; the downdip portion of the Wilcox Aquifer underlies southern Milam County and all of Burleson County. Freshwater exists in the Wilcox Aquifer in both Milam County and Burleson Counties. The Wilcox Aquifer refers to three geological formations that are considered to be relevant aquifers by GMA 12. These three geologic formations are the Hooper, the Simsboro, and the Calvert Bluff. The top and bottom surfaces for these three geological formations are defined by their model layer in the Central Carrizo GAM (Dutton and others, 2003). The Upper Wilcox Aquifer is associated with the Calvert Bluff Formation. The Middle Wilcox Aquifer is associated with the Simsboro Formation. The Lower Wilcox Aquifer is associated with the Hooper Formation.

The unconfined portion of the Upper Wilcox Aquifer is where the Central Carrizo GAM (Dutton and others, 2003) simulates the water level in the Calvert Bluff Formation to be below the top of the Calvert Bluff Formation at January 2000. The unconfined portion of the Middle Wilcox Aquifer is where the Central Carrizo GAM (Dutton and others, 2003) simulates the water level in the Simsboro Formation to be below the top of the Simsboro Formation at January 2000. The unconfined portion of the Lower Wilcox Aquifer is where the Central Carrizo GAM (Dutton and others, 2003) simulates the water level in the Hooper Formation to be below the top of the Hooper Formation at January 2000.

(c) **Carrizo Aquifer.** The Carrizo Aquifer is a regional aquifer system that occurs throughout most of the District. The outcrop of the Carrizo Aquifer forms a southwest to northeast trending belt through southern Milam County; the downdip portion of the Carrizo Aquifer underlies southern Milam County and all of Burleson County. Freshwater exists in the Carrizo Aquifer in both Milam County and Burleson Counties. The aquifer is a source of groundwater for numerous domestic wells and several large public water supply systems. The top and bottom surfaces for the Carrizo Aquifer are represented by its model layer in the Central Carrizo GAM (Dutton and others, 2003). The unconfined portion of the Carrizo Aquifer is where the Central Carrizo GAM (Dutton and others, 2003) simulates the water level in the Carrizo Formation to be below the top of the Carrizo Formation at January 2000.

- (d) **Queen City.** The Queen City Aquifer outcrops across a 5 to 8 mile wide zone that is generally aligned along the Milam-Burleson County line. The aquifer extends down dip in Burleson County and is a source of groundwater for domestic wells and some public water supply wells. Freshwater exists in the Queen City Aquifer in both Milam County and Burleson Counties. The top and bottom surfaces for the Queen City Aquifer are represented by its model layer in the Central Carrizo GAM (Kelley and others, 2004). The unconfined portion of the Queen City Aquifer is defined as the area where the Central Carrizo GAM (Kelly and others, 2004) simulates the water table to be below the top of the Queen City Aquifer at January 2000.
- (e) **Sparta Aquifer.** The Sparta Aquifer outcrops across a 3 to 5 mile wide zone trending southwest-northeast just north of Highway 21 in Burleson County. The Sparta extends downdip to the southeast throughout much of Burleson County. Like the Queen City Aquifer, the Sparta is used for numerous domestic water wells and some small public water supply systems in the District. Freshwater exists in the Sparta Aquifer in Burleson County. The top and bottom surfaces for the Sparta Aquifer are represented by its model layer in the Central Carrizo GAM (Kelley and others, 2004). The unconfined portion of the Sparta Aquifer is defined as the area where the Central Carrizo GAM (Kelly and others, 2004) simulates the water table to be below the top of the Sparta Aquifer at January 2000.
- (f) **Yegua/Jackson Aquifer.** The Yegua/Jackson Aquifer outcrops across a 6 to 10 mile wide zone trending southwest-northeast south of Highway 21 in Burleson County. The Yegua/Jackson Aquifer extends down-dip to the southeast through much of Burleson County. The Yegua/Jackson Aquifer includes to all four geologic units (the upper Yegua, the lower Yegua, the upper Jackson, and the lower Jackson) represented by the model layers in the Yegua/Jackson GAM (Deeds and others, 2010). In Burleson County, the Yegua/Jackson Aquifer provides small to moderate amounts of freshwater to domestic and irrigation wells and to a few public water systems.
- (g) **Brazos River Alluvium Aquifer.** The Brazos River Alluvium Aquifer is comprised of floodplain and terrace deposits of the Brazos River along the eastern boundary of Milam and Burleson counties. The Brazos River Alluvium Aquifer occurs only as an unconfined aquifer in POSGCD and the majority of it exists in Burleson County. The Brazos River Alluvium supplies freshwater to many irrigation wells and several domestic wells. For the most part, the water discharges from the alluvium mainly through seepage to the Brazos River, evapotranspiration, and wells. The bottom surfaces for the Brazos River Alluvium is represented by its model layer in the Central Queen City/Sparta GAM (Kelley and others, 2004).
- (h) **Shallow Alluvium Aquifers.** Shallow alluvium aquifers have not been completely mapped across POSGCD. The aquifers represent floodplain and terrace deposits near major tributaries to the Brazos River. These aquifers are generally less than 30 feet thick, are characterized by mixtures of coarse sands and fine-grain materials, and are often well connected hydrologically to nearby streams. The area of these aquifers are denoted by alluvium deposits denoted in the BEG map of surface geology (Proctor and others, 1974).

## 5. MANAGEMENT ZONES

The District is divided into groundwater management zones for the purpose of evaluating and managing groundwater resources recognizing the different characteristics and anticipated future development of the aquifers in the District.

The District will establish and enforce Rules for the spacing of wells, the maximum allowable production of groundwater per acre of land located over an aquifer, require permits for production, regulate drawdown and provide for a reduction in the maximum allowable production and permitted production of groundwater per acre of land based on the different surface and subsurface characteristics and different evaluation and monitoring within the Management Zones.

The Management Zones are as follows:

- (a) **Trinity Management Zone.** This management zone includes the Trinity Aquifer which is located beneath the footprint of the Midway outcrop shown in Figure 3. This management zone also includes the Midway Formation, which is generally a clayey deposit with low transmissivity.
- (b) **Brazos River Alluvium Management Zone.** This management zone is located along the eastern boundaries of the District in Milam and Burleson Counties and is coterminous with the boundaries of the Brazos Alluvium outcrop in Figure 2. This zone extends to the depth of the water bearing alluvial sediments of the Brazos River Alluvium.
- (c) **Shallow Alluvium Management Zone.** This management zone corresponds to the alluvium sediments associated with the major tributaries of the Brazos River shown in Figure 2. This zone extends to the depth of the water bearing alluvial sediments along the tributaries.
- (d) **Sparta and Shallow Sparta Management Zones.** The Sparta Management Zone includes all of the water bearing formations of the Sparta Aquifer found in the District. The areal extent of the Sparta Management Zone is shown in Figure 3. The up-dip area of the Sparta Management Zone contains the Shallow Sparta Management Zone, which includes the unconfined portions of the Sparta Aquifer and covers the area shown in Figure 3.
- (e) **Queen City and Shallow Queen City Management Zones.** The Queen City Management Zone includes all of the water bearing formations of the Queen City Aquifer found in the District. The areal extent of the Queen City Management Zone is shown in Figure 4. The up-dip area of the Queen City Management Zone contains the Shallow Queen City Management Zone, which includes the unconfined portions of the Queen City Aquifer and covers the area shown in Figure 4.
- (f) **Carrizo and Shallow Carrizo Management Zones.** The Carrizo Management Zone includes all of the water bearing formations of the Carrizo Aquifer found in the District. The areal extent of the Carrizo Management Zone is shown in Figure 4. The up-dip area of the Carrizo Management Zone contains the Shallow Carrizo Management Zone, which includes the unconfined portions of the Carrizo Aquifer and covers the area shown in Figure 4.
- (g) **Upper Wilcox and Shallow Upper Wilcox Management Zones.** The Upper Wilcox Management Zone includes all of the water bearing formations of the Calvert Bluff Formation found in the District. The areal extent of the Upper Wilcox Management Zone is shown in Figure 5. The up-dip area of the Upper Wilcox Management Zone contains the Shallow Upper Wilcox Management Zone, which includes the unconfined portions of the Calvert Bluff Formation and covers the area shown in Figure 5.
- (h) **Middle Wilcox and Shallow Middle Wilcox Management Zones.** The Middle Wilcox Management Zone includes all of the water bearing formations of the Simsboro Formation found in the District. The areal extent of the Middle Wilcox Management Zone is shown in Figure 5. The up-dip area of the Middle Wilcox Management Zone contains the Shallow Middle Wilcox Management Zone, which includes the unconfined portions of the Simsboro Formation and covers the area shown in Figure 5.
- (i) **Lower Wilcox and Shallow Lower Wilcox Management Zones.** The Lower Wilcox Management Zone includes all of the water bearing formations of the Hooper Formation found in the District. The areal extent of the Lower Wilcox Management Zone is shown in Figure 6. The up-dip area of the Lower Wilcox Management Zone contains the Shallow Lower Wilcox Management Zone, which includes the unconfined portions of the Hooper Formation and covers the area shown in Figure 6.
- (j) **Yegua/Jackson and Shallow Yegua/Jackson Management Zone.** This zone includes the outcrop and downdip portions of the geologic units of the Yegua and the Jackson formations of

the Yegua/Jackson Aquifer, which occur in the southern portion of Burleson County. The areal extent of this management zone is shown in Figure 4. The Yegua/Jackson Management Zone contains the Shallow Yegua/Jackson Zone, which is defined as - the saturated thickness simulated by the Yegua/Jackson GAM (Deeds and others, 2010) for Model Layer 1 at January 2000.

## 6. MANAGEMENT OF GROUNDWATER SUPPLIES

The District will evaluate and monitor groundwater conditions and regulate production consistent with this plan and the District Rules. Production will be regulated as needed to conserve groundwater, and protect groundwater users, in a manner not to unnecessarily and adversely limit production or impact the economic viability of the public, landowners and private groundwater users. In consideration of the importance of groundwater to the economy and culture of the District, the District will identify and engage in activities and practices that will permit groundwater production and, as appropriate, protect the aquifer and groundwater in accordance with this Management Plan and the District's rules. A monitoring well network will be maintained to monitor aquifer conditions within the District. The District will make a regular assessment of water supply and groundwater storage conditions and will report those conditions as appropriate in public meetings of the Board or public announcements. The District will undertake investigations, and co-operate with third-party investigations, of the groundwater resources within the District, and the results of the investigations will be made available to the public upon being presented at a meeting of the Board.

The District will adopt rules to regulate groundwater withdrawals by means of well spacing and production limits as appropriate to implement this Plan. In making a determination to grant a permit or limit groundwater withdrawals, the District will consider the available evidence and, as appropriate and applicable, weigh the public benefit against the individual needs and hardship.

The factors that the District may consider in making a determination to grant a drilling and operating or operating permit or limit groundwater withdrawals will include:

1. The purpose of the rules of the District;
2. The equitable distribution of the resource;
3. The economic hardship resulting from grant or denial of a permit, or the terms prescribed by the permit;
4. This Management Plan and Desired Future Conditions of the District as adopted in Joint Planning under Tex. Water Code, Sec. 36.108; and
5. The potential effect the permit may have on the aquifer, and groundwater users.

The transport of groundwater out of the District will be regulated by the District according to the Rules of the District.

In pursuit of the District's mission of protecting the groundwater resources, the District may require adjustment of groundwater withdrawals in accordance with the Rules and Management Plan. To achieve this purpose, the District may, at the Board's discretion after notice and hearing, amend or revoke any permit for non-compliance, or reduce the production authorized by permit for the purpose of protecting the aquifer and groundwater availability. The determination to seek the amendment of a permit will be based on aquifer conditions observed by the District as stated in the District's rules. The determination to seek revocation of a permit will be based on compliance and non-compliance with the District's rules and regulations. The District will enforce the terms and conditions of permits and the rules of the District, as necessary, by fine and enjoining the permit holder in a court of competent jurisdiction as provided for in Texas Water Code (TWC) Ch. 36.102, etc.

A contingency plan to cope with the effects of water supply deficits due to climatic or other conditions will be developed by the District and will be adopted by the Board after notice and hearing. In developing the contingency plan, the District will consider all relevant factors, including, but not limited to, the economic effect of conservation measures upon all water resource user groups, the local implications of the degree and

effect of changes in water storage conditions, the unique hydrogeologic conditions of the aquifers within the District and the appropriate conditions under which to implement the contingency plan.

The District will employ reasonable and necessary technical resources at its disposal to evaluate the groundwater resources available within the District and to determine the effectiveness of regulatory or conservation measures. A public or private user may appeal to the Board for discretion in enforcement of the provisions of the water supply deficit contingency plan on grounds of adverse economic hardship or unique local conditions. The exercise of discretion by the Board, shall not be construed as limiting the power of the Board.

**7. DESIRED FUTURE CONDITIONS**

The District shall participate in the joint planning process in GMA 8 and 12 as defined per TWC § 36.108, including establishment of Desired Future Conditions (DFCs) for management areas within the District. In its evaluation of potential DFCs, the District shall consider results from groundwater availability models, scientific reports, and the conditions of the aquifer within the management zones.

- (a) **DFCs Adopted by GMA 12.** The District’s current DFCs for the area covered by GMA 12 are the average drawdowns in Tables 7-1 and 7-2.

The average drawdowns in Table 7-1 are for a 60-year period beginning January 2000 and ending December 2059. For each of the aquifers, the DFC average drawdown are for the area covered by each aquifer in Milam and Burleson Counties as defined by the stratigraphy used in the TWDB Groundwater Availability Model for the Central Queen City Aquifer (Kelley and others, 2004). The average drawdowns in Table 7-2 represent declines in the saturated thickness measured over a 50-year period. The 50-year period begins in January 2010 and ends on December 2059.

**Table 7-1. Adopted DFCs based on the Average Threshold that occurs between January 2000 and December 2059**

Aquifer	Drawdown (ft)
Sparta	30
Queen City	30
Carrizo	65
Upper Wilcox (Calvert Bluff Fm)	140
Middle Wilcox (Simsboro Fm)	300
Lower Wilcox (Hooper Fm)	180
Yegua-Jackson	100

**Table 7-2. Adopted DFCs for the Brazos River Alluvium based on decrease in the average saturated thickness that occurs between January 2010 and December 2059**

County	Average Decrease in Saturated Thickness (ft)
Milam in GMA 12	5
Burleson in GMA 12	6

- (b) **Threshold values for Average Drawdown Adopted for the Shallow Management Zones .** The District developed the DFCs in Table 7-1 using a methodology that include constraints to limit

drawdown in the up-dip regions of aquifers. One reason these constraints were developed is to help protect the production capacity of existing wells in the unconfined portions of the aquifer where the water level above the well screen tends to be less than in the confined portions of the aquifer.

**Table 7-3 Threshold values for Average Drawdown for the Shallow Management Zones**

Aquifer	Average Drawdown (ft) that Occurs between January 2000 and December 2059 in the Shallow Management Zone
Sparta	10
Queen City	10
Carrizo	20
Upper Wilcox (Calvert Bluff Fm)	20
Middle Wilcox (Simsboro Fm)	20
Lower Wilcox (Hooper Fm)	20
Yegua-Jackson	15

- (c) **DFCs Adopted by GMA 8.** On the date of this Plan's adoption, the District did not have any permitted wells in the portion of the Brazos River Alluvium Aquifer and the Trinity Aquifer in GMA 8. POSGCD participated in the GMA 8 joint planning process to help establish DFCs for the Brazos River Alluvium Aquifer and the Trinity Aquifer within the District boundaries, but for the purpose of this Plan the District considers the portion of the Brazos River Alluvium Aquifer within GMA 8 as a non-relevant aquifer. The District will not monitor water levels in the GMA 8 portion of the Brazos River Alluvium until the GMA 8 portion of the Brazos River Alluvium is deemed as a relevant aquifer by the District. The District will also not monitor water levels in the Trinity Aquifer until there is at least one permitted well that pumps from the Trinity Aquifer.

The District's current DFCs for the area covered by GMA 8 are the average drawdowns in Table 7-5. The average drawdowns in Table 7-5 are for a 50-year period that begins on January 2000 and ends on December 2049 and the average drawdowns are for areas covered by each aquifer in Milam County as defined by the stratigraphy provided by the TWDB Groundwater Availability Model for the Northern Trinity Aquifer (Bene and others, 2004).

**Table 7-5. Adopted DFCs based on Average Threshold that occurs between January 2000 and December 2049**

Aquifer	Drawdown (ft)
Paluxy	252
Glen Rose	294
Hensell	337
Hosston	344

The POSGCD considers the portion of the Brazos River Alluvium Aquifer within GMA 8 as a non-relevant aquifer. As a result, there is no GMA 8 DFC for the Brazos River Alluvium.

**8. MODELED AVAILABLE GROUNDWATER (MAG)**

Based on DFCs adopted by GMA 8 and GMA 12, the Texas Water Development Board is required by TWC § 36.108 9(o) to provide the District with a MAG for each DFC. Table 8-1 lists the draft MAGs received by the District from the TWDB. The Draft MAGs will be replaced by final MAGs values after the

final MAGs values have been set by the TWDB.

**Table 8-1. Modeled Available Groundwater Values Calculated for 2060 by the TWDB based on the DFCs adopted by GMA 8 and 12**

Aquifer	Acre-ft/year (AFY)
Brazos River Alluvium	
Declared a Non-relevant Aquifer in GMA 8	NA
In Milam and Burleson County and in GMA 12	25,138 <sup>1</sup>
Aquifers in Trinity GAM	
Paluxy	0 <sup>2</sup>
Glen Rose	149 <sup>2</sup>
Hensel	36 <sup>2</sup>
Hosston	103 <sup>2</sup>
Subtotal	288
Aquifers in the Queen City/Sparta GAM	
Sparta	6,734 <sup>3</sup>
Queen City	502 <sup>4</sup>
Carrizo	7,059 <sup>5</sup>
Upper Wilcox (Calvert Bluff Fm)	1,038 <sup>5</sup>
Middle Wilcox (Simsboro Fm)	48,501 <sup>5</sup>
Lower Wilcox (Hooper Fm)	4,422 <sup>5</sup>
Subtotal	68,256
Yegua-Jackson Aquifer	12,923 <sup>6</sup>
<b>Total</b>	<b>106,605</b>

<sup>1</sup> GTA AQUIFER ASSESSMENT 10-20 MAG(Bradley,2011)

<sup>2</sup> GAM RUN 10-063 MAG(Oliver and Bradley, 2011)

<sup>3</sup> GAM RUN 10-046 MAG(Oliver, 2012a)

<sup>4</sup> GAM RUN 10-045 MAG(Oliver, 2012b)

<sup>5</sup> GAM RUN 10-044 MAG(Oliver, 2012c)

<sup>6</sup> GAM RUN 10-060MAG(Oliver, 2012d)

## 9. WATER WELL INVENTORY

The District will assign permitted wells to a management zone and to an aquifer based on the location of the well's screen or well depth using the Rules of the District. If no well screen information is available then a permitted well will be assigned to a management zone and to an aquifer based on the total depth of the well. The assignment of the permitted well will be made at the time of permit. The District will assign exempt wells to a management zone and to an aquifer based on available information for the exempt well. The District will use the assignments to help track the permitted pumping and production for each aquifer and for each management zone.

## 10. GROUNDWATER MONITORING

The District will maintain a monitoring well network that will be used by the District to obtain measured water levels. Groundwater monitoring will be designed to monitor changes in groundwater conditions over time. The District encourages well owners to volunteer wells to be used as part of the monitoring network. The District will accept wells into, or replace an existing well in, the monitoring network. The selection process will consider the well proximity to other monitoring wells, to permitted and exempt wells, to streams, and to geographic and political boundaries. If no suitable well locations can be found to meet the monitoring objectives in a specific aquifer or management zone, the District may evaluate the benefits of converting an oil and gas well to a water well, drilling and installing a new well, or using modeled water levels for that area until such time as a suitable well can be obtained for monitoring.

The District shall perform groundwater monitoring. The monitoring of the wells will be performed under the direction of the general manager, by trained personnel using a Standard Operation Procedure adopted by the District.

## **11. THRESHOLD LEVELS AND ANALYSIS OF GROUNDWATER LEVEL DATA**

The District shall use threshold levels to help achieve its DFCs and to conserve and preserve groundwater availability and protect groundwater users. The District shall administer separate threshold levels for each management zone based on the Rules of the District. As part of its evaluation and determinations, the District may also consider the pumping-induced impacts to groundwater resources, including production occurring outside of the District. The District will consider threshold levels based on one or more of the following metrics: estimated total annual production, measured water level change, and predicted water level change.

Among the factors to be considered to guide the District's actions are threshold levels established in the District's Rules. District actions which can be initiated if a threshold level has been exceeded are: additional aquifer studies to collect and analyze additional information, a re-evaluation of the Management Plan or rules, and/or a change in the Management Plan or rules.

## **12. PRODUCTION AND SPACING OF WELLS**

Production and spacing of all wells within the District will be regulated by the District according to the Rules of the District. Well spacing and the rate of production of the well will be dependent on the management zone and the aquifer associated with the well, and other factors included in the Rules of the District.

## **13. ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION**

The District will implement this plan and utilize it as a guide for the on-going evaluation of, and the planning and establishing priorities for all District conservation and regulatory activities. All programs, permits and related operations of the District, and any additional planning efforts in which the District may participate will be consistent with this plan.

The District will adopt rules relating to the permitting of wells, the production and transport of groundwater and reducing permitted production. The rules adopted by the District shall be adopted pursuant to TWC Chapter 36 and provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on technical data recommended by competent professionals and accepted by the Board.

The District shall treat all citizens equally. Citizens may apply to the District for a variance in enforcement of the rules on grounds of adverse economic effect or unique local conditions. In granting a variance to any rule, the Board shall consider the potential for adverse effect on adjacent landowners and the aquifer(s). The exercise of discretion by the Board shall not be construed as limiting the power of the Board.

The District will endeavor to cooperate with other agencies in the implementation of this plan and the management of groundwater supplies within the District. All activities of the District will be undertaken in a spirit of co-operation and coordination with the appropriate state and regional agencies.

## **14. METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS**

The general manager of the District will prepare and present to the Board an annual report on the District's performance and accomplishment of the management goals and objectives. The presentation of the report will occur during the last monthly Board meeting each fiscal year, beginning after the adoption and certification of this plan. The report will include the number of instances in which each of the activities specified in the management objectives was engaged in during the fiscal year. Each activity will be referenced to the estimated expenditure of staff time and budget in accomplishment of the activity. The notations of activity frequency, staff time and budget will be referenced to the appropriate performance standard for each management objective describing the activity, so that the effectiveness and efficiency of the District's operations may be evaluated. The Board will maintain the adopted report on file, for public

inspection, at the District's offices. This methodology will apply to all management goals contained within this plan.

## **15. MANAGEMENT GOALS, OBJECTIVES, & PERFORMANCE STANDARDS**

### **15.1 Efficient Use of Groundwater**

#### Management Objectives:

1. The District will maintain a monitoring well network with at least 50 monitoring wells to provide coverage across management zones and aquifers within the District. The District will measure water levels at the monitoring well locations at least once every calendar year. A written analysis of the water level measurements from the monitoring wells will be made available through a presentation to the Board of the District at least once every three years.
2. The District will provide educational leadership to citizens within the District concerning this subject. The activity will be accomplished annually through at least one printed publication, such as a brochure, and public speaking at service organizations and public schools as provided for in the District's Public Education Program.

#### Performance Standards:

1. Maintain a monitoring well network and its criteria, and measure at least 50 monitoring wells at least once every calendar year.
2. Number of monitoring wells measured annually by the District.  
Written report presented to the Board to document that water levels at these monitoring wells have been measured a minimum of once each year.
3. The number of publications and speaking appearances by the District each year under the District's Public Education Program.

### **15.2 Controlling and Preventing Waste of Groundwater.**

#### Management Objectives:

The District will provide educational leadership to citizens within the District concerning this subject. The activity will be accomplished annually through at least one printed publication, such as a brochure, and public speaking at service organizations and public schools as provided for in the District's Public Education Program. During years when District revenues are sufficient, the District will consider funding a grant to obtain a review, study, or report of pertinent groundwater issues, , or to sponsor the attendance of students at summer camps/seminars that place emphasis on the conservation of water resources.

#### Performance Standards:

The number of publications and speaking appearances by the District each year, and the number of grants considered and students actually accepting and attending an educational summer camp or seminar.

### **15.3 Control and Prevent Subsidence**

#### Management Objectives:

The District will monitor drawdowns with due consideration to the potential for land subsidence. At least once every three years, the District will report projected land subsidence for areas where water levels will decrease more than 300 feet (over a 50 year period from the year 2000 baseline condition) based on GAM simulations used for the joint planning process.

#### Performance Standards:

The number of reports that provide estimates of projected land subsidence.

## **15.4 Conservation of Groundwater including Rainwater Harvesting, Precipitation Enhancement, Brush Control, Conjunctive Use, and/or Recharge Enhancement of Groundwater Resources in the District**

### Management Objectives:

1. The District will provide educational leadership to citizens within the District concerning this subject. The educational efforts will be through at least one printed publication, such as a brochure, and at least one public speaking program at a service organization and/or public school as provided for in the District's Public Education Program. Each of the following topics will be addressed in that program:
  - A. Conservation
  - B. Rainwater Harvesting
  - C. Brush Control
  - D. Recharge Enhancement
  - E. Conjunctive Use
  - F. Precipitation Enhancement
2. During years when District revenues are sufficient, the District will consider sponsoring the attendance of students and/or teachers at summer camps/seminars that place emphasis on the conservation of groundwater, rainwater harvesting, brush control, groundwater recharge enhancement, conjunctive use, precipitation enhancement of water resources, or a combination of such groundwater management programs.
3. The District will encourage and support projects and programs to conserve and/or preserve groundwater, and/or enhance groundwater recharge, by annually funding the District's Groundwater Conservation and Enhancement Grant Program, during years when the District's revenues remain at a level sufficient to fund the program. The objective of this program is to obtain the active participation and cooperation of local water utilities, fire departments and public agencies in the funding and successful completion of programs and projects that will result in the conservation of groundwater and the protection or enhancement of the aquifers in the District. The qualifying water conservation projects and programs will include, as appropriate, projects that result in the conservation of groundwater, reduce the loss or waste of groundwater, recharge enhancement, rainwater harvesting, precipitation enhancement, brush control, or any combination thereof. The District's objective is to benefit the existing and future users of groundwater in the District by providing for the more efficient use of water, increasing recharge to aquifers, reducing waste, limiting groundwater level declines, and maintaining or increasing the amount of groundwater available, by awarding at least one grant under the program in each county annually.

### Performance Standards:

1. The number of publications and speaking appearances by the District each year under the District's Public Education Program.
2. The number of students sponsored to attend a summer camp/seminar emphasizing the conservation of water.
3. Annual funding, when applicable, for the District's Groundwater Conservation and Enhancement Grant Program, and the number of projects and programs reviewed, approved, and funded under that program. A written report providing estimated benefit of the amount of groundwater conserved, of the recharge enhancement, and/or of addition groundwater protection provided by the program.
4. The number and content of reports submitted regarding sponsored programs.

## **15.5 Conjunctive Use of Surface and Groundwater**

### Management Objective:

The District will confer annually with the Brazos River Authority (BRA) on cooperative opportunities for conjunctive resource management.

### Performance Standard:

1. The number of conferences with the BRA on conjunctive resource management.
2. The number of times each year in which the applicant, general manager or the Board considers conjunctive use in the permitting process.

## **15.6 Drought Management Strategy**

The aquifers within the District are substantially resistant to water level declines during drought conditions. As a result, the District does not have a drought management strategy based on precipitation metrics such as the Palmer Drought Index. The District management strategy is to review and to enforce Drought Management Plans adopted by District permit holders and entities that contract to purchase water transported out of the District.

### Management Objective:

When permits or contracts are issued, as applicable, the District will confirm that all entities have an approved Drought Management Plan.

### Performance Standard:

Documentation of District review of the State approved Drought Management Plans.

## **15.7 Natural Resource Issues That Impact the Use and Availability of Groundwater and Which are Impacted By the Use of Groundwater**

### Management Objective:

1. The District will confer at least once every two years with appropriate agencies on the impact of groundwater resources in the District.
2. The District will evaluate permit applications for new wells and the information submitted by the applicants on those wells prior to drilling. The District will assess the impact of these wells on the groundwater resources in the District.
3. The District will implement the POSGCD Well Closure Program. The objective of the well closure program is to obtain the closure and plugging of derelict and abandoned wells in a manner that is consistent with state law, for the protection of the aquifers, the environment, and the public safety. The District will conduct a program to identify, inspect, categorize and cause abandoned and derelict water, oil and gas wells to be closed and plugged, by annually funding the program or segments or phases of the program appropriate to be funded in such fiscal year. The District will fund the closure of at least one abandoned well during years when the District's revenues remain at a level sufficient to fund the program.

### Performance Standard:

1. The number of conferences with a representative of appropriate agencies .
2. Reports to the Board on the number of new well permit applications filed, and the possible impacts of those new wells on the groundwater resources in the District.
3. Annual funding, when applicable, for the District's Well Closure Program, and the number of wells closed and plugged as a result of the Well Closure Program.

## 15.8. Mitigation

### Management Objective:

Within one year of adoption of this Plan, the District will review mitigation plans prepared by other agencies in Texas regarding impacts caused by groundwater pumping. Based upon this review and estimated impacts to groundwater levels caused by future pumping within and outside of the District, the District will determine whether or not to develop a mitigation plan. If appropriate, the District will develop a draft mitigation plan within three years after the adoption of this Plan and will seek public comment, hold appropriate hearings and adopt a plan. The plan will be reviewed on an annual basis thereafter.

### Performance Standard:

1. The number of mitigation plans reviewed.
2. Reports and presentations that document the anticipated impacts of pumping within and outside of the District on groundwater resources in the District.

## 15.9 Desired Future Conditions (DFCs)

### Management Objective:

1. At least once every three years, the District will monitor water levels and evaluate whether the change in water levels is in conformance with the DFCs adopted by the District. The District will estimate total annual groundwater production for each aquifer based on the water use reports, estimated exempted use, and other relevant information, and compare these production estimates to the MAGs listed in Table 8-1.

### Performance Standard:

1. At least once every three years, the general manager will report to the Board the measured water levels obtained from the monitoring wells within each Management Zone, the average measured drawdown for each Management Zone calculated from the measured water levels of the monitoring wells within the Management Zone, a comparison of the average measured drawdowns for each Management Zone with the DFCs for each Management Zone, and the District's progress in conforming with the DFCs.
2. At least once every three years, the general manager will report to the Board the total permitted production and the estimated total annual production for each aquifer and compare these amounts to the MAGs listed in Table 8-1 for each aquifer.

## 16. PROJECTED WATER DEMANDS

Table 16-1 lists the projected net water demands within the District in acre-feet per year according to the 2012 State Water Plan Data.

**Table 16-1 Projected Water Demands in the District According the 2012 State Water Planning Data**

### **BURLESON COUNTY**

Water Use Group	Category	2010	2020	2030	2040	2050	2060
CALDWELL	MUNICIPAL	807	835	854	865	878	894
COUNTY-OTHER	MUNICIPAL	1,139	1,263	1,349	1,404	1,450	1,504
IRRIGATION	IRRIGATION	17,480	16,749	16,052	15,431	14,741	14,082
LIVESTOCK	LIVESTOCK	1,422	1,422	1,422	1,422	1,422	1,422
MANUFACTURING	MANUFACTURING	196	233	270	307	340	370
MILANO WSC	MUNICIPAL	177	194	207	216	223	231
MINING	MINING	25	24	24	24	24	24
SNOOK	MUNICIPAL	147	160	167	173	178	183
SOMERVILLE	MUNICIPAL	328	344	353	358	364	372
SOUTHWEST MILAM WSC	MUNICIPAL	58	67	73	79	82	86
<b>Total Projected Water Demands (acre-ft/yr)</b>		<b>21,779</b>	<b>21,291</b>	<b>20,771</b>	<b>20,279</b>	<b>19,702</b>	<b>19,168</b>

**MILAM COUNTY**

Water Use Group	Category	2010	2020	2030	2040	2050	2060
BELL-MILAM FALLS WSC	MUNICIPAL	245	288	316	334	341	347
CAMERON	MUNICIPAL	1,606	1,756	1,840	1,881	1,880	1,888
COUNTY-OTHER	MUNICIPAL	401	291	211	152	111	82
IRRIGATION	IRRIGATION	2,372	2,352	2,333	2,312	2,294	2,275
LIVESTOCK	LIVESTOCK	1,779	1,779	1,779	1,779	1,779	1,779
MANUFACTURING	MUNICIPAL	6,820	8,250	8,250	8,250	9,800	9,800
MILANO WSC	MUNICIPAL	195	212	224	230	232	235
MINING	MINING	4,000	4,000	4,000	3,000	1,500	1,500
ROCKDALE	MUNICIPAL	1,254	1,287	1,310	1,325	1,332	1,337
SOUTHWEST MILAM WSC	MUNICIPAL	1,086	1,251	1,350	1,422	1,448	1,472
STEAM ELECTRIC POWER	STEAM ELECTRIC POWER	12,500	12,500	12,500	12,500	16,000	16,000
THORNDALE	MUNICIPAL	193	206	213	215	216	219
<b>Total Projected Water Demands (acre-ft/yr)</b>		32,451	34,172	34,326	33,400	36,933	36,934

<b>Total Projected Water Demands (acre-ft/yr) for Burleson and Milam Counties</b>	54,230	55,463	55,097	53,679	56,635	56,102
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The District also established future Municipal Groundwater Use Demands in the District for planning purposes. The methodology and results of that effort are as follows:

**Method for Establishing Future Municipal Use Demands of Groundwater.** The District adopted a resolution, dated March 11, 2003, establishing production rights for Local Water Utilities within the District (water supply corporations, special utility districts, municipal utility districts and cities), as a rule. This rule allowed these Local Water Utilities to obtain a permit to produce a volume of water annually according to one of two methods:

1. An amount equal to the highest annual pumpage it reported from wells within the District in any consecutive twelve months prior to September 31, 2001; or
2. The Local Water Utility could present to the Board a Long-Term Plan prepared by a qualified engineer that projects the annualized long-term water needs as the official projection of the water required by that Local Water Utility in the planning period (for not more than forty (40) years) for providing retail water service within that Local Water Utility's defined service area. If a Local Water Utility adopted this plan on or before March 30, 2004, and the Board found the highest annual pumpage projected in the Long-Term Plan (the "Plan Amount") was not unreasonable, the Local Water Utility was authorized to obtain a permit to pump and produce up to the Plan Amount.

The table below contains the results of this effort:

**Municipal Use Groundwater Demands Projected through 2044**

<b>Producer</b>	<b>Estimated Acre Feet per year</b>
<b>Burleson County</b>	
Apache Hills	11
Birch Creek	16
Burl. Co. MUD	73
Burl. Investm.	7
Cade Lakes	123
Centerline	21

Caldwell	1,969
Snook	154
Somerville	670
Clara Hills	5
Clay	7
Cooks Point	10
Deanville	350
Lakeview	21
Little Oak Forrest	5
Lyons	106
Post Oak Hill	11
Shupak Utilities	19
Tunis	108
Whispering Woods	7
Wilderness Sound	15
<b>Total for Burleson Co.</b>	<b>3,708</b>

**Milam County**

ALCOA	702
Rockdale	2,129
Gause	74
Marlow	108
Milano	673
Minerva	28
North Milam	369
Southwest Milam	2,492
<b>Total for Milam Co.</b>	<b>6,575</b>

**DISTRICT TOTALS** 10,283

**17. PROJECTED WATER SUPPLIES WITHIN THE DISTRICT**

Table 17-1 lists the projected water supplies within the District in acre-feet per year according to the 2007 State Water Planning Data and the 2012 State Water Plan Data. The groundwater supplies are based on the 2007 State Water Planning Data and the surface water supplies are based on the 2012 State Water Plan Data. The District has participated and will participate in future regional water planning, and will consider the water supply needs and water management strategies included in the adopted state water plan.

**Table 17-1 Projected Water Supplies in acre-feet per year Within the District According the 2012 State Regional Water Planning Data for Surface Water and 2007 State Water Plan Data for Groundwater**

**BURLESON COUNTY**

Water Use Group	Source Name	Source Type	2010	2020	2030	2040	2050	2060
CALDWELL	CARRIZO-WILCOX AQUIFER	GROUNDWATER	2,476	2,476	2,476	2,476	2,476	2,476
SNOOK	SPARTA AQUIFER	GROUNDWATER	183	183	183	183	183	183
SOMERVILLE	SPARTA AQUIFER	GROUNDWATER	403	403	403	403	403	403
COUNTY-OTHER	CARRIZO-WILCOX AQUIFER	GROUNDWATER	397	397	397	397	397	397

COUNTY-OTHER	QUBEN CITY AQUIFER	GROUNDWATER	612	612	612	612	612	612
COUNTY-OTHER	SPARTA AQUIFER	GROUNDWATER	495	495	495	495	495	495
IRRIGATION	BRAZOS RIVER ALLUVIUM AQUIFER	GROUNDWATER	8,583	8,224	7,882	7,577	7,238	6,914
IRRIGATION	BRAZOS RIVER COMBINED RUN-OF-RIVER IRRIGATION	SURFACE WATER	8,840	8,840	8,840	8,840	8,840	8,840
LIVESTOCK	LIVESTOCK LOCAL SUPPLY	SURFACE WATER	1,422	1,422	1,422	1,422	1,422	1,422
MANUFACTURING	BRAZOS RIVER COMBINED RUN-OF-RIVER MANUFACTURING	SURFACE WATER	95	95	95	95	95	95
MANUFACTURING	SPARTA AQUIFER	GROUNDWATER	195	195	195	195	195	195
MINING	SPARTA AQUIFER	GROUNDWATER	25	24	24	24	24	24
<b>Total Projected Water Supply (acre-ft/yr)</b>			<b>23,726</b>	<b>23,366</b>	<b>23,024</b>	<b>22,719</b>	<b>22,380</b>	<b>22,056</b>

### MILAM COUNTY

Water Use Group	Source Name	Source Type	2010	2020	2030	2040	2050	2060
BELL-MILAM FALLS WSC	BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM	SURFACE WATER	132	132	132	132	132	132
CAMERON	BRAZOS RIVER RUN-OF-RIVER	SURFACE WATER	2,629	2,629	2,629	2,629	2,629	2,629
COUNTY-OTHER	BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM	SURFACE WATER	321	321	321	321	321	321
COUNTY-OTHER	BRAZOS RIVER RUN-OF-RIVER	SURFACE WATER	163	163	163	163	163	163
COUNTY-OTHER	CARRIZO-WILCOX AQUIFER	Groundwater	342	342	342	342	342	342
IRRIGATION	BRAZOS RIVER COMBINED RUN-OF-RIVER IRRIGATION	SURFACE WATER	8,801	8,806	8,810	8,814	8,819	8,823
IRRIGATION	CARRIZO-WILCOX AQUIFER	Groundwater	489	485	481	476	473	469
LIVESTOCK	LIVESTOCK LOCAL SUPPLY	SURFACE WATER	1,779	1,779	1,779	1,779	1,779	1,779
Manufacturing	BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM	SURFACE WATER	4,239	4,239	4,239	4,239	4,239	4,239
Manufacturing	BRAZOS RIVER COMBINED RUN-OF-RIVER MANUFACTURING	SURFACE WATER	656	656	657	657	657	657
Manufacturing	CARRIZO-WILCOX AQUIFER	GROUNDWATER	5,346	5,346	5,346	5,346	5,346	5,346
MILANO WSC	CARRIZO-WILCOX AQUIFER	GROUNDWATER	279	279	279	279	279	279
MINING	CARRIZO-WILCOX AQUIFER	GROUNDWATER	4,000	4,000	4,000	3,000	1,500	1,500
ROCKDALE	CARRIZO-WILCOX AQUIFER	GROUNDWATER	2,577	2,577	2,577	2,577	2,577	2,577

SOUTHWEST MILAM WSC	CARRIZO-WILCOX AQUIFER	GROUNDWATER	1,355	1,283	1,395	1,395	1,395	1,395
STEAM ELECTRIC POWER	ALCOA LAKE/RESERVOIR	SURFACE WATER	14,000	14,000	14,000	14,000	14,000	14,000
THORNDALE	CARRIZO-WILCOX AQUIFER	GROUNDWATER	230	230	230	230	230	230
<b>Total Projected Water Supply (acre-ft/yr)</b>			<b>47,338</b>	<b>47,262</b>	<b>47,371</b>	<b>46,366</b>	<b>44,863</b>	<b>44,859</b>
<b>Total Projected Water Supply (acre-ft/yr) for Burleson and Milam Counties</b>			<b>71,064</b>	<b>70,628</b>	<b>70,395</b>	<b>69,085</b>	<b>67,243</b>	<b>66,915</b>

## 18. PROJECTED WATER NEEDS AND WATER STRATEGIES

Table 18-1 lists the projected water needs within the District in acre-feet per year according to the 2012 State Water Plan Data. In Table 18-1, negative values reflect a water need and positive values reflect a surplus.

**Table 18-1 Projected Water Needs in acre-ft/yr Within the District According the 2012 State Water Plan Data**

### BURLESON COUNTY

Water Use Group	Category	2010	2020	2030	2040	2050	2060
CALDWELL	MUNICIPAL	1,545	1,517	1,498	1,487	1,474	1,458
COUNTY-OTHER	MUNICIPAL	369	245	159	104	58	4
IRRIGATION	IRRIGATION	760	1,491	2,188	2,809	3,499	4,158
LIVESTOCK	LIVESTOCK	0	0	0	0	0	0
MANUFACTURING	MANUFACTURING	190	153	116	79	46	16
MILANO WSC	MUNICIPAL	57	40	27	22	15	7
MINING	MINING	4	5	5	5	5	5
SNOOK	MUNICIPAL	153	140	133	127	122	117
SOMERVILLE	MUNICIPAL	235	219	210	205	199	191
SOUTHWEST MILAM WSC	MUNICIPAL	5	-4	-10	-15	-18	-22
<b>Total Projected Water Needs (acre-ft/yr)</b>		<b>0</b>	<b>-4</b>	<b>-10</b>	<b>-15</b>	<b>-18</b>	<b>-22</b>

### MILAM COUNTY

Water Use Group	Category	2010	2020	2030	2040	2050	2060
BELL-MILAM FALLS WSC	MUNICIPAL	-7	-50	-78	-96	-103	-109
CAMERON	MUNICIPAL	1,023	873	789	748	749	741
COUNTY-OTHER	MUNICIPAL	419	529	609	674	715	744
IRRIGATION	IRRIGATION	6,913	6,938	6,961	6,995	7,018	7,041
LIVESTOCK	LIVESTOCK	0	0	0	0	0	0
MANUFACTURING	MUNICIPAL	3,328	1,898	1,898	1,992	442	442
MILANO WSC	MUNICIPAL	58	41	29	28	26	23
MINING	MINING	-70	-70	-70	0	0	0
ROCKDALE	MUNICIPAL	903	870	847	870	863	858
SOUTHWEST MILAM WSC	MUNICIPAL	-143	-308	-407	-458	-484	-508
STEAM ELECTRIC POWER	STEAM ELECTRIC POWER	1,500	1,500	1,500	1,500	-2,000	-2,000
THORNDALE	MUNICIPAL	37	24	17	15	14	11
<b>Total Projected Water Needs (acre-ft/yr)</b>		<b>-220</b>	<b>-428</b>	<b>-555</b>	<b>-554</b>	<b>-2,587</b>	<b>-2,617</b>

<b>Total Projected Water Needs (acre-ft/yr) for Burleson and Milam Counties</b>	<b>-220</b>	<b>-432</b>	<b>-565</b>	<b>-569</b>	<b>-2,605</b>	<b>-2,639</b>
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**Table 18.2 Projected Water Strategies in acre-ft/yr within the District in acre-feet per year according to the 2012 State Water Plan Data.**

**BURLESON COUNTY**

Water Use Group	Water Management Strategy	Source County	2010	2020	2030	2040	2050	2060
SOUTHWEST MILAM WSC	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING) - CARRIZO-WILCOX AQUIFER	Burleson	0	4	10	15	18	22
Total	-	-	0	4	10	15	18	22

**MILAM COUNTY**

Water Use Group	Water Management Strategy	Source County	2010	2020	2030	2040	2050	2060
BELL-MILAM FALLS WSC	VOLUNTARY REDISTRIBUTION - BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE	Reservoir	7	50	78	96	103	109
MINING	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT - CARRIZO-WILCOX AQUIFER	Milam	100	100	100	0	0	0
SOUTHWEST MILAM WSC	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING) - CARRIZO-WILCOX AQUIFER	Burleson	143	308	407	458	484	508
STEAM ELECTRIC POWER	STEAM-ELECTRIC CONSERVATION-CONSERVATION	Milam	375	625	875	875	1,120	1,120
STEAM ELECTRIC POWER	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING) - CARRIZO-WILCOX AQUIFER	Milam	0	0	0	0	1,613	1,613
Total	-	-	625	1,083	1,460	1,429	3,320	3,350

**19. Estimate of Groundwater Use Within the District**

Table 19-1 lists the estimated groundwater use (in acre-feet per year) within the District based on groundwater pumpage estimates found in the Texas Water Development Board's Water User Survey Database: (<http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2>)

**Table 19-1 Estimated Groundwater Use in acre-feet/year Within the District Based on TWDB Pumping Estimates**

**Burleson County**

Year	Aquifer	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
2004	BRAZOS RIVER ALLUVIUM	0	0	0	19,677	0	0	19,677
	CARRIZO-WILCOX	677	0	0	153	0	18	848
	OTHER	147	0	0	760	0	73	980
	QUEEN CITY	490	0	0	0	0	190	680
	SPARTA	855	111	0	0	0	118	1,084
	YEGUA-JACKSON	215	0	0	76	0	190	481
	TOTAL	2,384	111	0	20,666	0	589	23,750
2005	BRAZOS RIVER ALLUVIUM	0	0	0	20,300	0	0	20,300
	CARRIZO-WILCOX	790	0	0	158	0	16	964
	OTHER	170	0	0	785	0	64	1,019
	QUEEN CITY	465	0	0	0	0	168	633
	SPARTA	884	111	0	0	0	104	1,099
	YEGUA-JACKSON	235	0	0	79	0	168	482
	TOTAL	2,544	111	0	21,322	0	520	24,497
2006	BRAZOS RIVER ALLUVIUM	0	0	0	21,010	0	0	21,010
	CARRIZO-WILCOX	936	0	0	163	0	16	1,115
	OTHER	176	0	0	812	0	62	1,050
	QUEEN CITY	506	0	0	0	0	163	669
	SPARTA	896	111	0	0	0	101	1,108
	YEGUA-JACKSON	253	0	0	82	0	163	498
	TOTAL	2,767	111	0	22,067	0	505	25,450
2007	BRAZOS RIVER ALLUVIUM	0	0	0	5,483	0	0	5,483
	CARRIZO-WILCOX	683	0	0	43	0	15	741
	OTHER	146	0	0	212	0	60	418
	QUEEN CITY	419	0	0	0	0	158	577
	SPARTA	851	111	0	0	0	98	1,060
	YEGUA-JACKSON	209	0	0	21	0	158	388
	TOTAL	2,308	111	0	5,759	0	489	8,667
2008	BRAZOS RIVER ALLUVIUM	0	0	0	14,823	0	0	14,823
	CARRIZO-WILCOX	804	0	0	115	0	12	931
	OTHER	170	0	0	573	0	48	791
	QUEEN CITY	510	0	0	0	0	127	637
	SPARTA	765	111	0	0	0	78	954
	YEGUA-JACKSON	233	0	0	58	0	127	418
	TOTAL	2,482	111	0	15,569	0	392	18,554

**Milam County**

Year	Aquifer	Municipal	Manufactur -ing	Steam Electric	Irrigation	Mining	Livestock	Total
2004	CARRIZO-WILCOX	2,692	36,435	0	1,282	0	552	40,961
	OTHER	65	0	0	1,795	0	174	2,034
	QUEEN CITY	9	0	0	513	0	29	551
	TOTAL	2,766	36,435	0	3,590	0	755	43,546
2005	CARRIZO-WILCOX	3,601	34,762	0	1,844	0	417	40,624
	OTHER	70	0	0	2,581	0	132	2,783
	QUEEN CITY	10	0	0	738	0	22	770
	TOTAL	3,681	34,762	0	5,163	0	571	44,177
2006	CARRIZO-WILCOX	3,510	30,116	0	2,019	0	412	36,057
	OTHER	75	0	0	2,827	0	130	3,032
	QUEEN CITY	11	0	0	808	0	22	841
	TOTAL	3,596	30,116	0	5,654	0	564	39,930
2007	CARRIZO-WILCOX	2,964	24,894	0	1,503	0	372	29,733
	OTHER	61	0	0	2,105	0	117	2,283
	QUEEN CITY	9	0	0	602	0	20	631
	TOTAL	3,034	24,894	0	4,210	0	509	32,647
2008	CARRIZO-WILCOX	3,478	451	0	1,107	0	393	5,429
	OTHER	68	0	0	1,549	0	124	1,741
	QUEEN CITY	10	0	0	443	0	21	474
	TOTAL	3,556	451	0	3,099	0	538	7,644

**20. ESTIMATED ANNUAL RECHARGE OF GROUNDWATER RESOURCES WITHIN THE DISTRICT**

Table 20-1 lists the estimated annual recharge from precipitation to groundwater within the District. The recharge estimates in acre-feet/year were compiled from GAM Run 10-029 (Aschenbach, 2011) and GTA Aquifer Assessment 10-20 MAG (Bradley, 2011).

**Table 20-1 Estimated annual recharge from precipitation**

Aquifer	Recharge (acre-ft/yr)
Trinity	0
Sparta	7,424
Queen City	8,812
Carrizo	4,018
Upper Wilcox (Calvert Bluff Fm)	7,330
Middle Wilcox (Simsboro Fm)	12,540
Lower Wilcox (Hooper Fm)	2,391
Yegua-Jackson	22,459
Brazos River Alluvium	23,456
Total	88,430

**21. ESTIMATED ANNUAL DISCHARGES FROM THE AQUIFER TO SPRINGS AND ANY SURFACE WATER BODIES, INCLUDING LAKES, STREAMS AND RIVERS**

Table 21-1 lists the estimated annual discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers. All of the discharge estimates were compiled from GAM Run 10-029 (Aschenbach, 2011) except those for the Brazos River Alluvium. The Brazos River Alluvium values were estimated based on the assumption that the Brazos River is primarily a gaining stream through Milam and Burleson Counties, which in turn is based on the hydraulic head gradients presented by Chowdhury and others (2010), and by taking the difference between the estimated annual recharge and annual pumping. Annual recharge is estimated at 23,456 AFY based on Table 20-1 and average pumping is estimated at 12,400 AFY based on Table 19-1. Thus, the average discharge from the Brazos River Alluvium to the Brazos River is approximately 11,056 AFY.

**Table 21-1 Estimated annual discharge to surface water bodies**

Aquifer	Discharge to Surface Water Bodies (acre-ft/yr)
Trinity	0
Sparta	4,807
Queen City	12,028
Carrizo	1,964
Upper Wilcox (Calvert Bluff Fm)	7,995
Middle Wilcox (Simsboro Fm)	18,827
Lower Wilcox (Hooper Fm)	1,748
Yegua-Jackson	13,923
Brazos River Alluvium	11,056
Total	72,348

**22. ESTIMATED ANNUAL GROUNDWATER FLOW INTO AND OUT OF THE DISTRICT WITHIN EACH AQUIFER AND BETWEEN AQUIFERS IN THE DISTRICT**

Table 22-1 lists the estimated annual groundwater flow into and out of the District within each aquifer and between aquifers in the District. The estimates in Table 22-1 were compiled from GAM Run 10-029 (Aschenbach, 2011). Additional details on the annual aquifer discharges between the aquifers are provided in Aschenbach (2011).

**Table 22-1 Estimated annual aquifer discharge in acre-ft/yr into and out of the District and between aquifers in the District**

Aquifer	Flow Into the District (acre-ft/yr)	Flow Out of the District (acre-ft/yr)	Flow Between Aquifer and Overlying Geologic Unit <sup>1</sup> (acre-ft/yr)	Flow Between Aquifer and Underlying Geologic Unit <sup>1</sup> (acre-ft/yr)
Trinity	423	678	NA	NA
Sparta	739	1226	NA	1569 <sup>2</sup>
Queen City	1,316	947	-1435 <sup>2</sup>	861 <sup>3</sup>
Carrizo	3,810	2,424	-233 <sup>3</sup>	-317 <sup>4</sup>
Upper Wilcox (Calvert Bluff Fm)	2,416	2,000	317 <sup>4</sup>	-3,451
Middle Wilcox (Simsboro Fm)	10,804	18,025	3,451	1,537
Lower Wilcox (Hooper Fm)	3,572	3,232	-1,537	NA
Yegua-Jackson	4,436	8,017	NA	NA
Total	27,516	36,549	NA	NA

Note: NA – not applicable

<sup>1</sup> positive values indicate flow into the aquifer; negative numbers indicate flow out of the aquifer

<sup>2</sup> Weches is the confining unit directly beneath the Sparta Aquifer and directly above the Queen City Aquifer

<sup>3</sup> Reklaw is the confining unit directly beneath the Queen City Aquifer and directly above the Carrizo Aquifer

<sup>4</sup> Upper Wilcox Aquifer is directly below the Carrizo Aquifer

<sup>5</sup> Middle Wilcox Aquifer is directly below the Upper Wilcox Aquifer

<sup>6</sup> Lower Wilcox Aquifer is directly below the Middle Wilcox Aquifer

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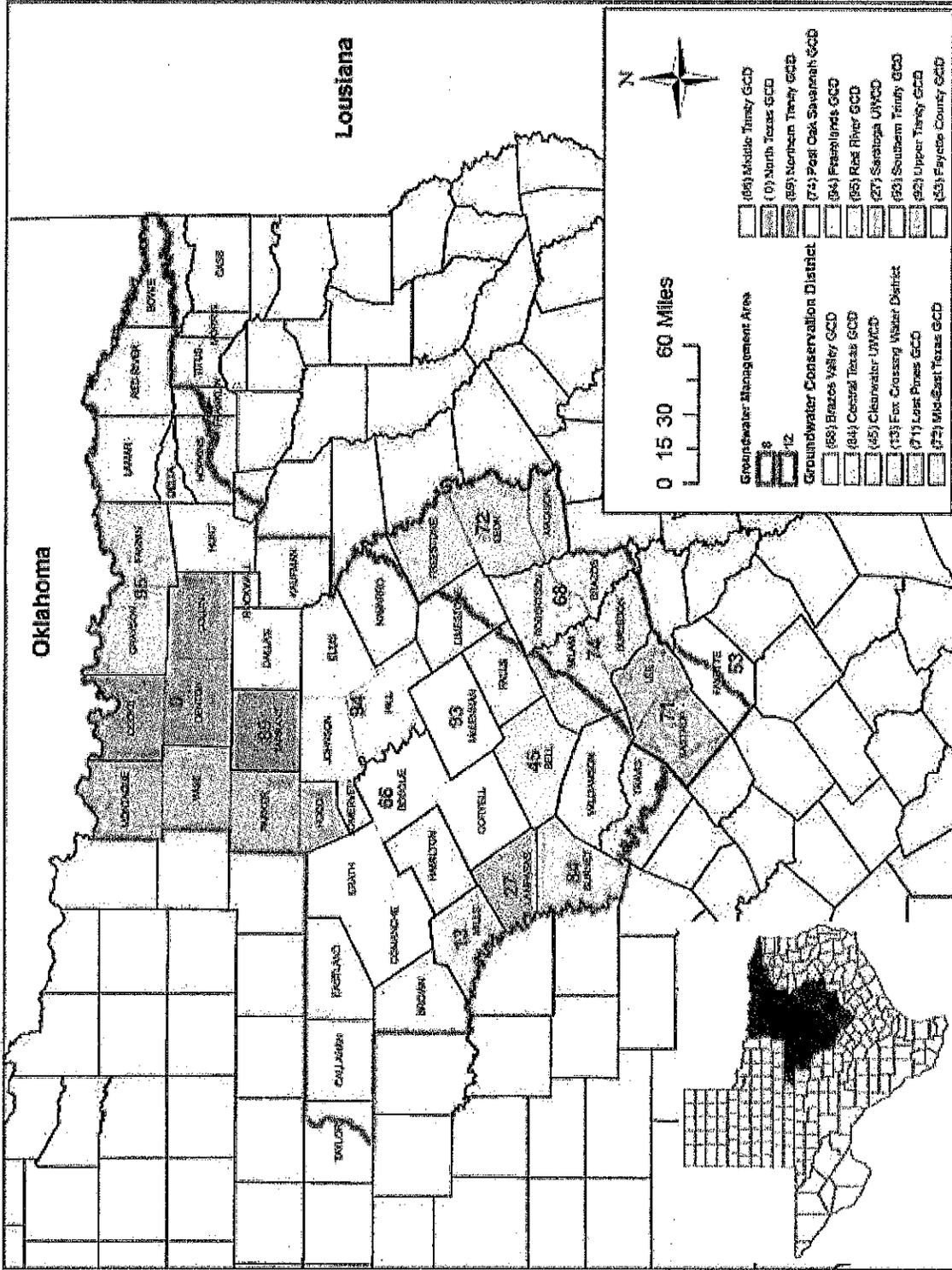
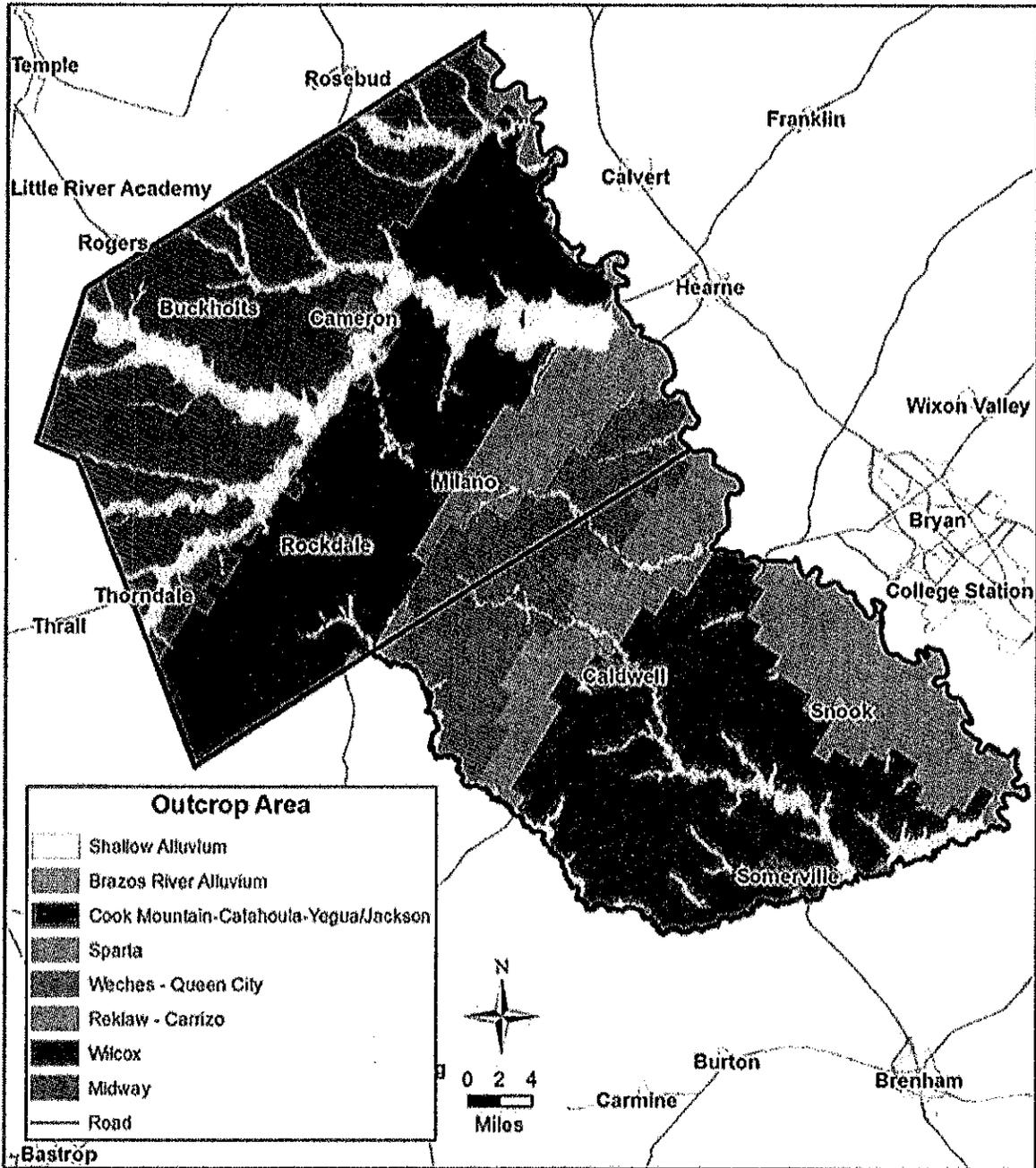


Figure 1. Counties and Groundwater Districts Associated with Groundwater Management Areas 8 and 12



**Figure 2. Outcrops Associated with Aquifers and Geological Formations in the District**

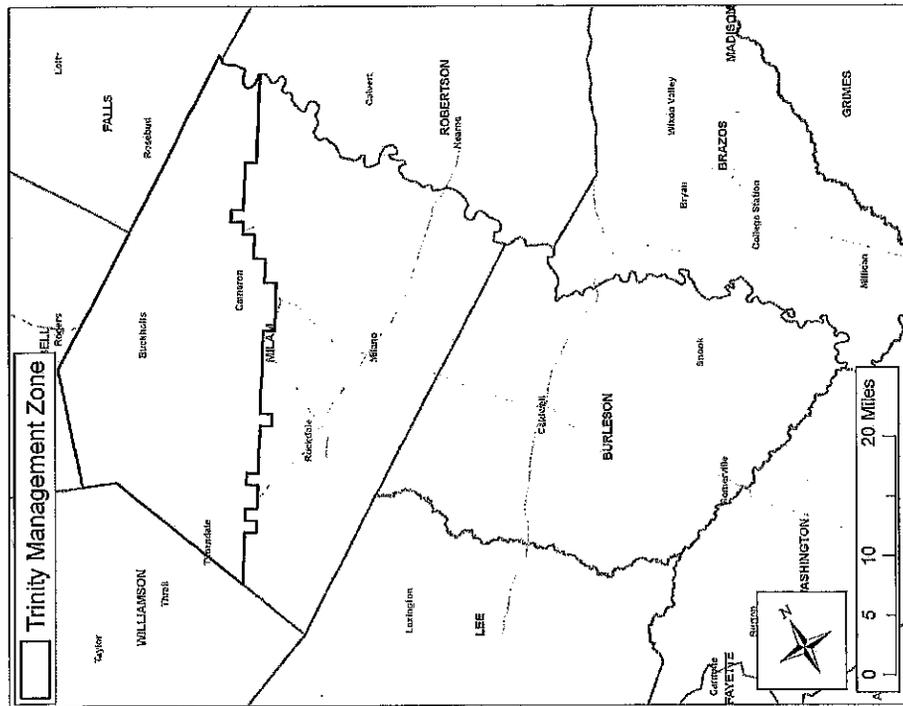
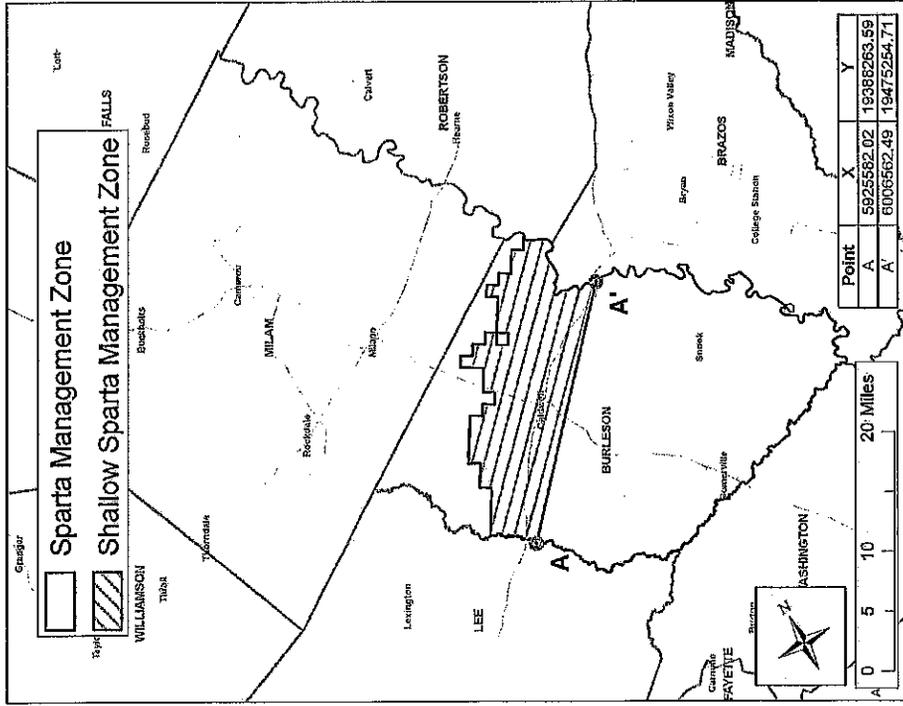


Figure 3. Areal Coverage for the Trinity Management Zone and the Sparta Management Zone

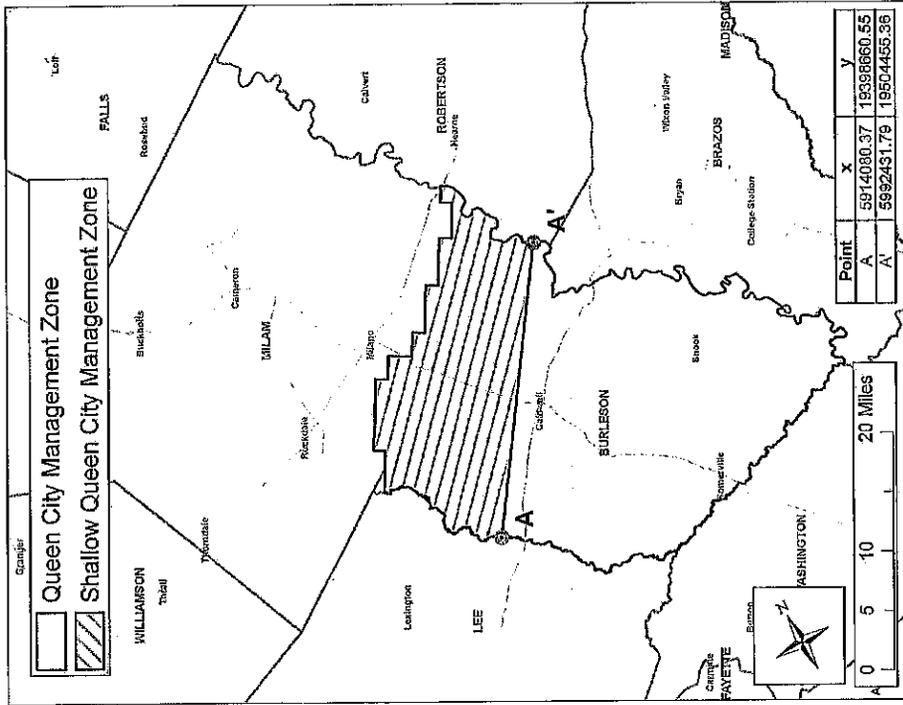
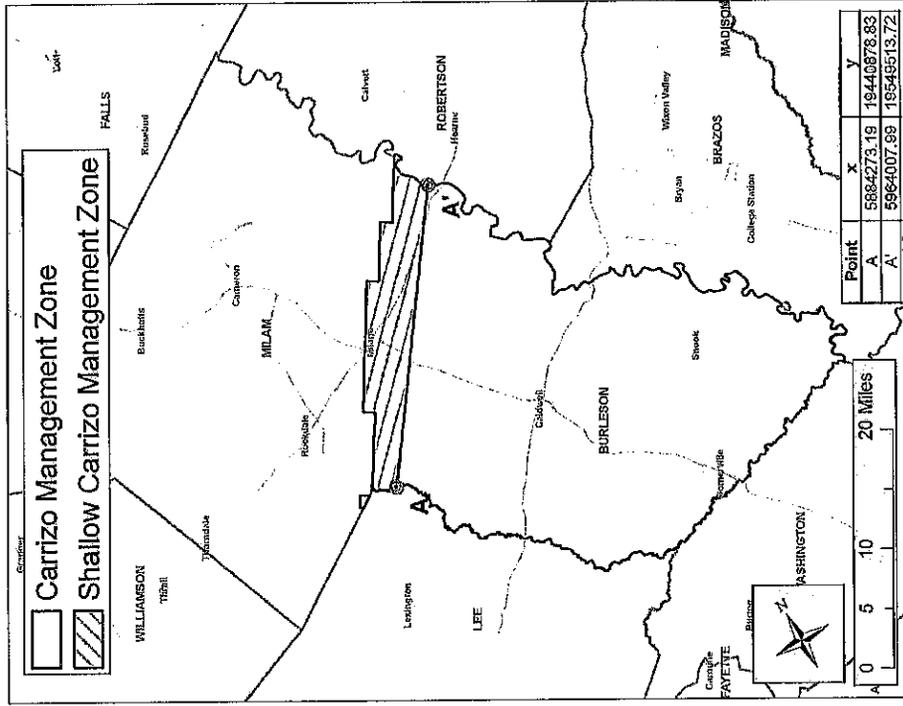
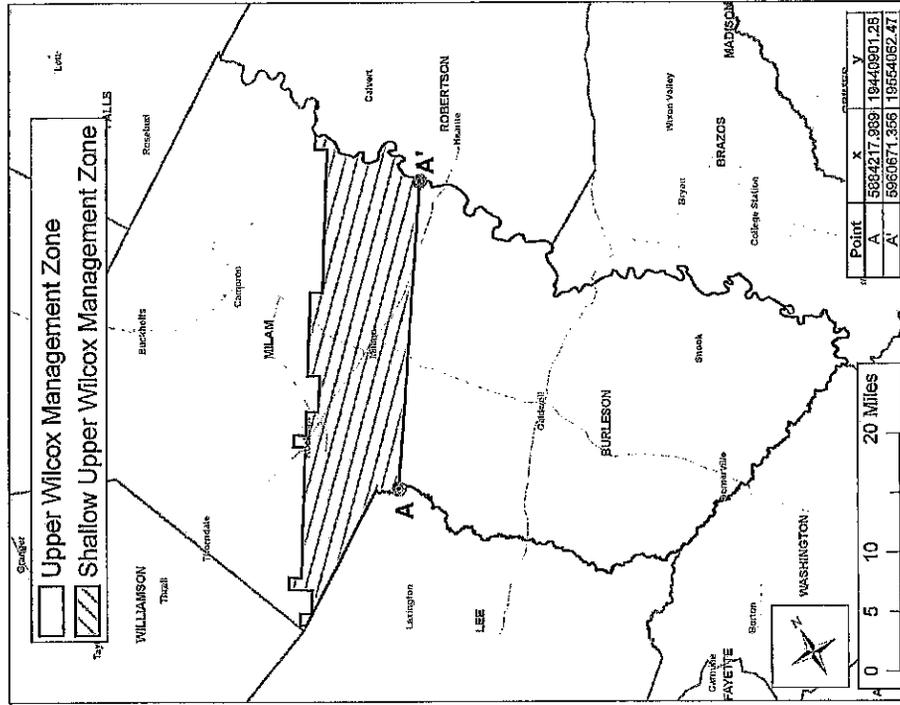
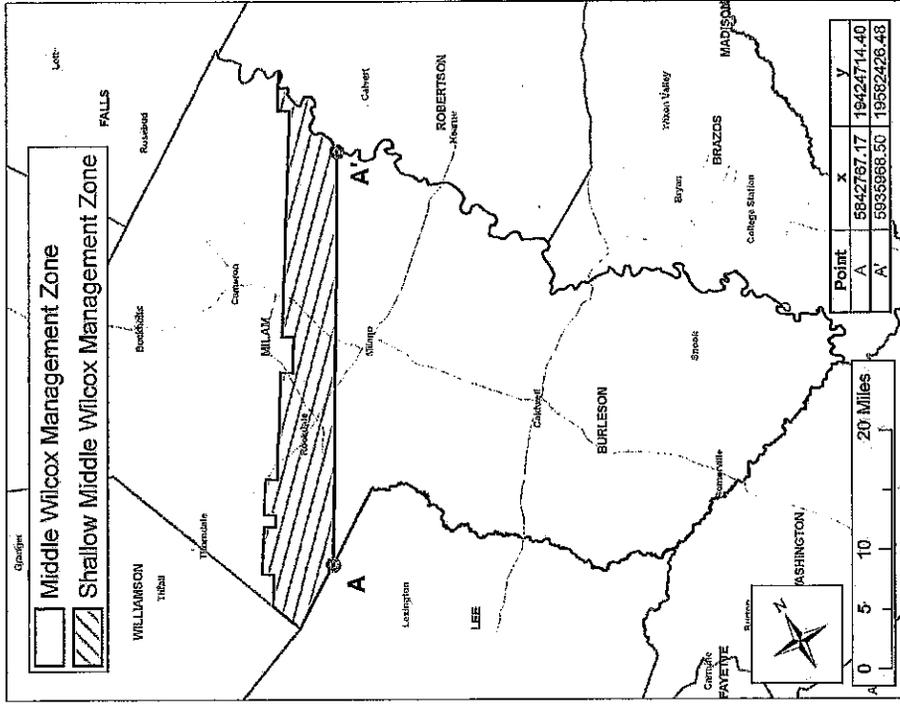
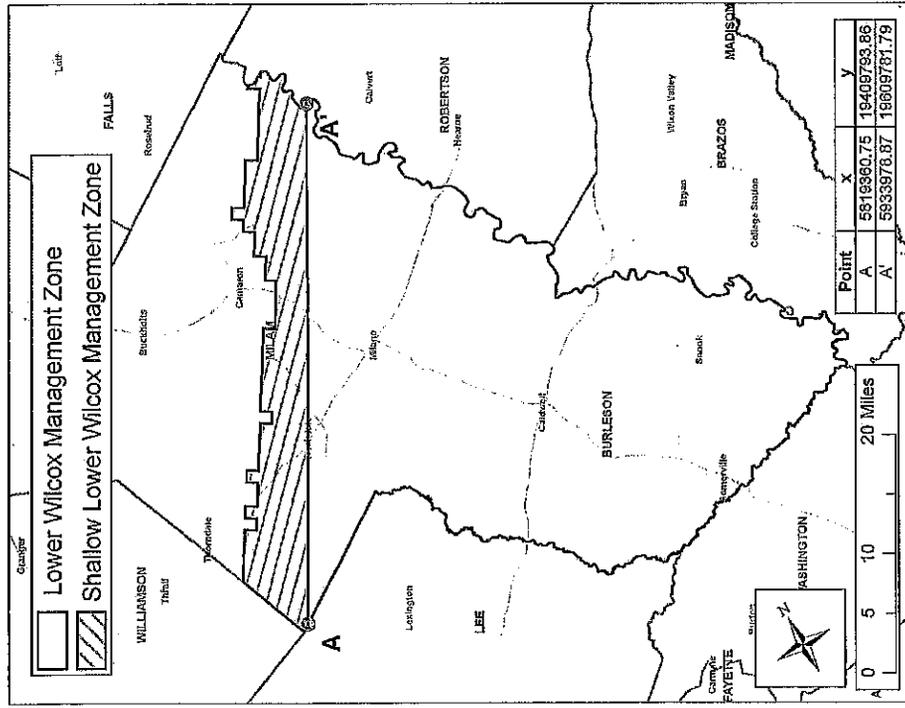
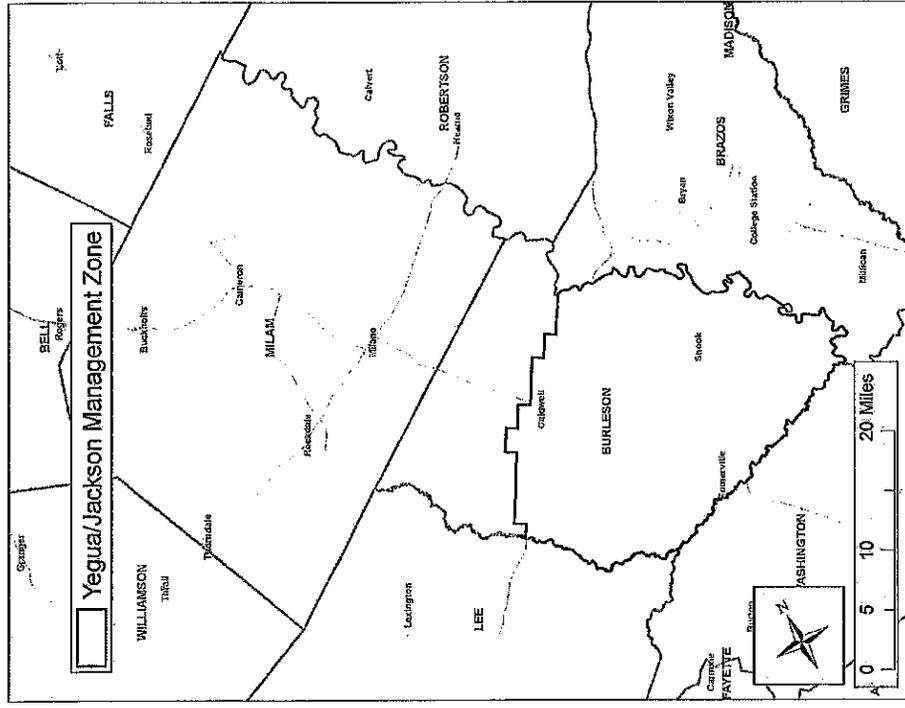


Figure 4. Areal Coverage for the Queen City Management Zone and the Carrizo Management Zone



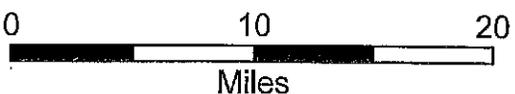
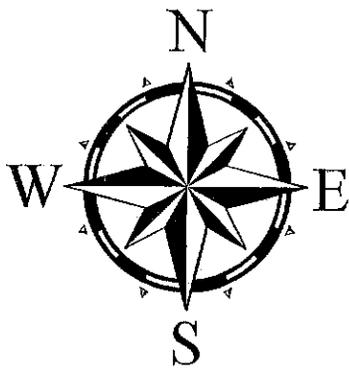
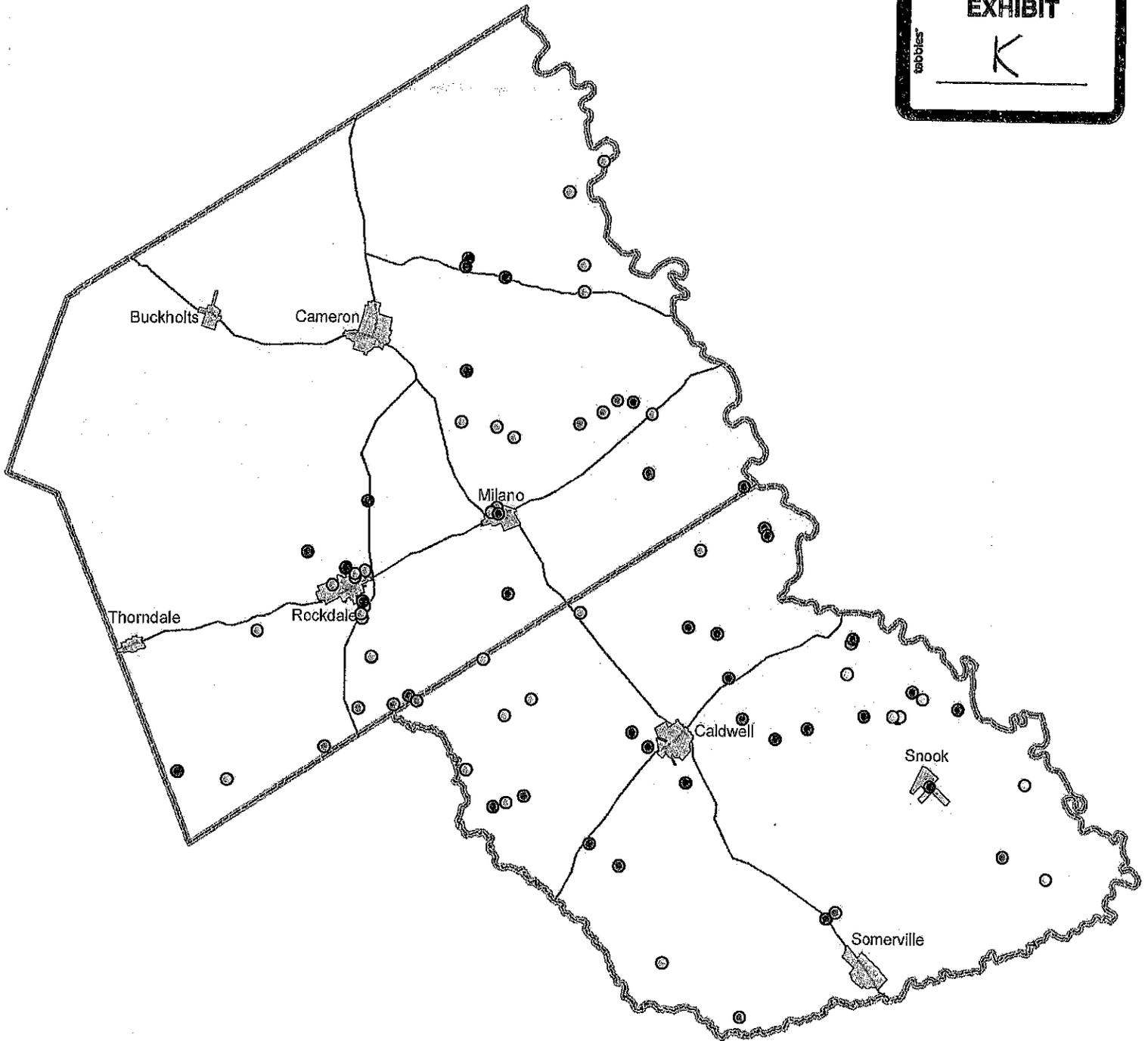
**Figure 5. Areal Coverage for the Upper Wilcox (Calvert Bluff Formation) Management Zone and the Middle Wilcox (Simsboro Formation) Management Zone**



**Figure 6. Areal Coverage for the Lower Wilcox (Hooper Formation) Management Zone and the Yegua-Jackson Management Zone**

# Current Monitor Wells For Post Oak Savannah GCD

EXHIBIT  
K



**Legend**

<b>Aquifer</b>	Cities
○ Brazos River Alluvium	Roads
⊙ Calvert Bluff	POSGCD Counties
⊙ Carrizo - Wilcox	
● Hooper	
⊙ Queen City	
⊙ Simsboro	
● Sparta	
⊙ Yegua - Jackson	



Exhibit Z

Estimated predicted drawdown over time for GMA 12 GCDs based on GMA 12 evaluations in joint planning for DFCs adopted in 2010.

Zone/Aquifer		Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Post Oak GCD	2020	19	28	89	96	196	108
	2040	24	37	109	128	254	147
	2060	27	42	122	154	306	184
Lost Pines GCD	2020	4	10	33	57	151	74
	2040	6	15	49	79	191	105
	2060	6	18	63	102	238	135
Brazos Valley GCD	2020	7	8	35	66	161	104
	2040	11	12	51	94	222	144
	2060	12	13	61	117	273	178
Mid-East Texas GCD	2020	-1	-2	34	40	68	56
	2040	-2	-3	46	57	93	78
	2060	-3	-5	55	70	115	97
Fayette County	2020	30	27	26	73	139	99
	2040	48	46	47	105	182	138
	2060	60	60	63	133	226	174

**Amended and Restated Drilling & Operating Permit  
Issued By Direction of the Board of Directors of the  
Post Oak Savannah Groundwater Conservation District**

EXHIBIT

tabular

M-1

This Amended and Restated Drilling and Operating Permit ("Amended Permit") is granted to Abengoa Vista Ridge, LLC, ("Permittee"), the assignee of and successor to Blue Water Vista Ridge LLC ("BWVR"), the successor to Blue Water Systems, L.P. ("Blue Water") the successor to Layne Water Development of Texas, LLC ("Layne"), to authorize Permittee to drill and operate thirty-three (33) water wells within the Post Oak Savannah Groundwater Conservation District ("District"), for the purpose of producing water for Municipal Use. The name, location, maximum annual production and maximum gallons of production permitted per minute for each of the thirty-three wells is listed in Exhibit "A". The individual wells listed in Exhibit "A" are referred to herein as the "Well" or "Wells" and the thirty-three Wells are collectively referred to as the "Well System". This Permit is conditioned upon and subject to Permittee complying with the Rules of the District ("Rules"), the orders of the Board, the Management Plan of the District, as amended, and the laws, rules and regulations of the State of Texas, as amended, applicable to drilling, operating and maintaining water wells within the District. This Permit confers only the right to drill and operate the Wells and Well System in compliance with and subject to the Rules and requirements of this Amended Permit. The terms, conditions and authorizations of this Amended Permit may be modified or amended under the Rules.

The Wells are registered with the District and the State of Texas. The Wells are approved for production in the aggregate as a Well System. The Permittee is authorized to drill and operate the Wells at the locations and maximum GPM production set forth in Exhibit "A", and the maximum annual production of the Well System shall not exceed 50,993 acre feet per year.

The Rules are incorporated herein in their entirety by reference, as if set forth herein verbatim, including but not limited to the Rules providing for reducing permitted production. The Permittee shall comply with the Rules and each requirement thereof in operating, maintaining, repairing and altering each of the Wells and the Well System. All application(s) pursuant to which the related original permits and prior amended permits, and this Amended Permit, have been issued, and all written agreements and acknowledgments executed by the Permittee, and/or by BWVR, Blue Water, or Layne, are incorporated into this Amended Permit. This Amended Permit is granted on the basis of, and contingent upon, the accuracy of the information supplied in the application(s), agreements and acknowledgments on file with the District. A finding that false information was supplied to the District in the permitting process for the Wells is grounds for revocation of this Permit.

The issuance of this Permit does not grant Permittee the right to use any public or private property, interfere with any personal or property rights, or violate any federal, state, or local law, rule or regulation. The District makes no representations and has no responsibility with respect to the availability or quality of the water authorized to be produced under this permit.

The term of the Permit, both the Drilling and the Operating Permit, is for a period of forty years from the original issuance date of September 11, 2004, subject to review every fifth year and modification during any such review to conform this Permit with intervening changes in the Management Plan or state law. Unless waived by the Board of the District for a specific review period, applications for review shall be submitted to the District 90 days prior to the fifth anniversary of the issuance date and each subsequent scheduled review date following the fifth anniversary date, until the date of expiration of this Permit. The Board may waive any review if no material change has been made to the Management Plan, or if the changes made do not require modification of this Permit.

This Amended Permit is executed and effective as of June 24, 2015.

**Post Oak Savannah Groundwater Conservation District**

By: \_\_\_\_\_

Name: Gary Westbrook

Title: General Manager

**Permit No. POS-D&O-0001**

**Exhibit A**  
**Blue Water Vista Ridge LLC Permitted Water Wells**

Well Designation	Location	Max. GPM
CW-1	30.44108N 96.81247W	1200gpm
CW-2	30.43564N 96.80366W	1200gpm
CW-3	30.42803N 96.80739W	1200gpm
CW-4	30.43169N 96.81623W	1200gpm
CW-5	30.43037N 96.82592W	1200gpm
CW-6	30.42724N 96.83412W	1200gpm
CW-7	30.41233N 96.81705W	1200gpm
CW-8	30.42325N 96.81969W	1200gpm
CW-9	30.42052N 96.81123W	975gpm
CW-10	30.41916N 96.80507W	750gpm
CW-11	30.41392N 96.7928W	750gpm
CW-12	30.41116N 96.79682W	750gpm
CW-13	30.44583N 96.76865W	1200gpm
CW-14	30.40421N 96.7786W	750gpm
CW-15	30.41001N 96.78026W	750gpm
CW-16	30.40794N 96.77606W	750gpm
CW-17	30.41709N 96.77139W	750gpm
CW-18	30.42121N 96.77545W	975gpm
CW-19	30.41838N 96.7668W	750gpm
CW-20	30.43605N 96.76393W	1200gpm
CW-21	30.43899N 96.77173W	1200gpm
PW-9	30.44138N 96.801233W	3000gpm
PW-10	30.43638N 96.80358W	3000gpm
PW-11	30.42851N 96.80668W	3000gpm
PW-12	30.42113N 96.811W	3000gpm
PW-13	30.42394N 96.82004W	3000gpm
PW-14	30.41266N 96.81705W	2500gpm
PW-15	30.42723N 96.83449W	3000gpm
PW-16	30.43059N 96.82576W	3000gpm
PW-17	30.43181n 96.981632w	3000gpm
PW-18	30.41998N 96.7752W	3000gpm
PW-19	30.41001N 96.77979W	3000gpm
PW-20	30.41145N 96.79644W	1800gpm

**Amended Permit to Transport Groundwater From within the  
Post Oak Savannah Groundwater Conservation District  
Of the State of Texas**

By Direction of the Board of Directors of the  
Post Oak Savannah Groundwater Conservation District



This amended permit is granted to Abengoa Vista Ridge, LLC ("Permittee"), the assignee of and successor to Blue Water Vista Ridge LLC ("BWVR"), successor to Blue Water Systems LP, ("Blue Water") and Layne Water Development of Texas, LLC ("Layne"), for the purpose of transporting groundwater from a system of water wells (wells) within the Post Oak Savannah Groundwater Conservation District (District), to locations outside the District for the non-wasteful purposes of Municipal Use in the counties of Bastrop, Bell, Burnet, Caldwell, Hays, Lee, Travis, Williamson, Comal, Guadalupe, and Bexar, in the State of Texas ("Amended Permit"). The groundwater permitted herein must be put to beneficial use at all times.

The location of each well from which water is authorized to be transported under this Amended Permit is listed in Exhibit "A". The Permittee has leased the water rights that will be produced. In addition, the names and mailing addresses of the owners of the land from which the wells are authorized to produce water are set forth in the application filed by Permittee for this Amended Permit, and otherwise in the records of the District.

Upon issuance of this Amended Permit, the Permittee agrees to abide by the Rules, orders of the Board and Management Plan of the District, as amended, and the laws and rules of the State of Texas, as amended, in transporting groundwater from the water wells to locations outside the District. This permit confers only the right to use the permit under the provisions of the District rules and according to its terms. The permit terms may be modified or amended as provided in the District rules.

These wells are registered with the District and the State of Texas. During any 24 hour period, the amount of groundwater to be transported from the District shall not exceed the aggregate maximum gallons per minute for the wells identified in Exhibit A. The total amount of groundwater to be transported from the District on an annual basis shall not exceed 50,993 acre feet.

This Amended Permit confers only the right to transport groundwater and its terms may be modified or amended. The operation of the wells for the authorized withdrawal must be conducted in a non-wasteful manner. All transport and storage facilities must be accessible to District representatives for inspection, and the Permittee agrees to cooperate fully in any reasonable inspection of these facilities by the District representatives. All application(s) pursuant to which the related original permits and the prior amended permits, and this Amended Permit, have been issued, and all written agreements and acknowledgments executed by the Permittee, and/or by BWVR, Blue Water or Layne, are incorporated into this Amended Permit, which is granted on the basis of, and contingent upon, the accuracy of the information supplied in the application(s). A finding that false information has been supplied is grounds for revocation of this Amended Permit, and a violation of the terms, conditions, requirements, or special provisions of this Amended Permit is punishable by civil penalties as provided by the District Rules and by law.

On or before February 15 of each year, the owner of this Amended Permit must submit an annual report to the District describing the amount of groundwater transported under this Amended Permit. This report shall be filed on a form provided by the District, stating the following: (1) the name of the Permittee; (2) the well numbers of each well for which the Permittee holds a transport permit; (3) the total amount of groundwater transported from each well and well system during the immediately preceding calendar year; (4) the total amount of groundwater transported from each well and well system during each month of the immediately preceding calendar year; (5) the purpose for which the water was transported; (6) any other information related to the operation and production of the wells or transport of water requested by the District.

The issuance of this Amended Permit does not grant to the Permittee the right to use private property, or public property, for the production or conveyance of water. Neither does this Amended Permit authorize the invasion of any personal rights nor the violation of federal, state, or local laws, or any regulations. The District makes no representations and shall have no responsibility with respect to the availability or quality of water authorized to be transported under this Amended Permit.

This Amended Permit expires on September 15, 2034, and is subject to review every fifth year, and during any such review may be modified to conform with intervening changes in the Management Plan of the District or state law. Permittee shall submit to the District 90 days prior to the fifth anniversary of the issuance and each subsequent review, and the date of expiration of the operating permit a full and complete report describing its groundwater transportation system, volumes of water delivered by customer, and the delivery points of groundwater transported, together with such other information that will assist the District's review. The Board may waive any five year review if no material change has been made to the Management Plan, or if the changes made do not require modification of such permits. Despite the term of duration listed in this Amended Permit, the Permittee is authorized to

transport groundwater under this Amended Permit only as long as the Permittee holds a valid operating permit issued by the District for the wells listed in this Amended Permit.

The permit issued September 14, 2004, and amended January 13, 2009, is hereby amended and in effect as of June 24, 2015.

Post Oak Savannah Groundwater  
Conservation District

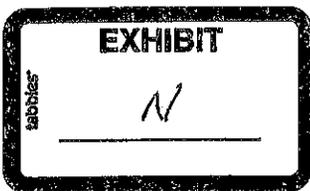
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Gary Westbrook - General Manager

No. POS-T-000\_\_

**Exhibit A**  
**Blue Water Vista Ridge LLC Permitted Water Wells**

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PW-20	30.41145N 96.79644W	1800gpm



**THE TERRILL FIRM**  
A PROFESSIONAL CORPORATION

810 West 10<sup>th</sup> Street  
Austin, Texas 78701  
Tel (512) 474-9100  
Fax (512) 474-9888

December 3, 2008

*Via Facsimile: (512) 323-5773*

Mr. Barney L. Knight  
General Counsel - Post Oak Savannah Groundwater Conservation District  
223 West Anderson Lane, Suite A-105  
Austin, Texas 78752

Re: Blue Water System's Application to Amend Operating and Transport Permits

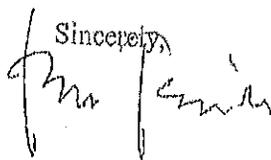
Dear Mr. Knight:

I represent Blue Water Systems LP ("Blue Water") in connection with Blue Water's Application to amend its Post Oak Savannah Groundwater Conservation District ("POSGCD") Operating and Transport Permits. This letter confirms Blue Water's understanding that all POSGCD permits are subject to POSGCD rules regarding potential future proportionate reduction of groundwater permits. Ross Cummings, the President of Blue Water Systems GP, LC, General Partner of Blue Water Systems, LP, joins in the execution of this letter, as provided below.

Blue Water understands and acknowledges that POSGCD permits are conditioned upon and subject to compliance with the District Rules, and that permit terms may be modified or amended pursuant to the Rules. Sections 5.1, 5.2, and 16.3 of the Rules state that the District may proportionately reduce the volume of water authorized to be produced under any issued permit as a result of the water availability, actual production, permitted production, or water level drawdown within a Management Zone. Blue Water also acknowledges that Section 16.5 states that the District may proportionately reduce the volume of water that may be produced under any permit if state law requires reductions to comply with water availability or requires production in a geographic area to be limited. Further, Blue Water Systems acknowledges the validity of the aforementioned District Rules as presently written, interpreted and applied by the District.

By making this acknowledgment, Blue Water does not waive any rights to review and challenge any changes to the District's rules or management plan, or any future change by the District in the interpretation and application of the District Rules that are inconsistent with the District rules as currently written.

If you have any questions regarding this matter, please do not hesitate to call.

Sincerely,  


Paul M. Terrill III  
THE TERRILL FIRM, P.C.

# Burleson County Tribune

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Thursday, December 25, 2014



**SOMERVILLE AND BIRCH Creek Volunteer Fire Departments** were on the scene of a house fire in the Somerville area on Friday.

## SISD buildings burglarized

**Culprits strike for second time, no major cash stolen**

Burglars have again broken into Somerville's school buildings. But they were in for a shock this time. There was no money to steal, except for a small amount in a coach's office. After a September burglary in which the culprits got away with about \$1,000 in cash, school officials no longer leave cash in the building, said Somerville Superintendent Charles Camarillo. So Friday morning's break-in, in which the high school office, gymnasium and front office were burglarized, was not as bad as it could have been. And nothing else inside the buildings was stolen, Camarillo said. A high school janitor discovered the break-in at about 6 a.m. on Friday and notified Camarillo, who responded moments later. What they found again steekened them. A glass window on the front door to the high school was shattered to gain entry, he said. Other entry points included the Yegua Center, where a front door window was broken, and the administration office, where a back door was pried open, said Somerville Police Chief Nic Malmstrom. Once inside, the culprits rummaged through the principal's office, the coach's office in the gym, where \$2 in cash was stolen, Camarillo said. In addition, the gym venting machines and food concession machines were burglarized, but there was nothing to steal, Camarillo said. And at the administration building, they pried open a vault and looked through money boxes and drawers, all to no avail. Somerville Police Officers Julio Dubs and Joe Brown responded on Friday and investigated at the scene. Malmstrom is also investigating. Malmstrom said police gathered fingerprints and other evidence at See SISD, page 7B

## House fire leaves family homeless

A house fire on Friday, Dec. 19, left a Somerville area family homeless during the Christmas holidays.

Somerville and Birch Creek firefighters were dispatched at 10:30 a.m. to the Tony Negrete family's double-wide mobile home fire on Spanish Oak Street in Somerville Place Subdivision off Park Road 4.

Negrete's wife and several grandchildren were home but all got out of the house unharmed. See FIRE, page 8A



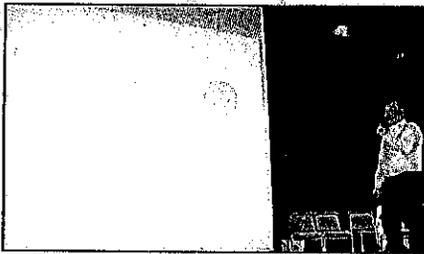
**SOMERVILLE** firefighters fight a house fire in the Somerville Place Subdivision.

## Experts: aquifers can handle export

**Doubters still skeptical of long-term impact for area**

The vast Elmboro and Garizo Wilcox aquifers can handle a major water export project from Burleson County to San Antonio without depleting or harming the long-term water supply.

That was a consensus shared by water experts addressing area residents at a Dec. 17 town hall meeting at the Caldwell Civic Center hosted by Burleson County Judge Mike Sutherland and Milam County Judge



**GARY WESTBROOK** of POSGCD displays this visual at a public meeting on the Vista Ridge export project. The meeting was held at the Caldwell Civic Center. — Tribune photo by Roy Sanders

## SPD makes arrest in gun case

A 32-year-old Somerville man was arrested on Thursday, Dec. 18, on an unlawful possession of a firearm by a felon charge and several drug charges after police executed a search warrant at his home.

Jonathan Clark Whitaker was charged with unlawful possession of a firearm by a felon, possession of a controlled substance less than 1 gram in a drug-free zone (methamphetamine) two additional counts of possession of a controlled substance in a drug-free zone (hydrocodone and Xanax) possession of marijuana, more than 2 ounces, less than 4 ounces, in a drug-free zone, and two Class A See ARREST, page 8A



**IN GOD'S HANDS** ministry team members look over these gifts on Saturday, Dec. 20, at the Caldwell Fire Station as part of Make Christmas Happen. In God's Hands Ministry, community churches and volunteer organizations participated. Pictured are, from left, John Palicka, David Palicka, Hilda Gutierrez and Colleen Palicka.



**ADAM SOWDERS** was honored on the one-year anniversary of his death by over 100 first responders. Pictured is a wreath his mother, Ann Sowders, made for the Brazos County Law Enforcement Memorial Service in May.

## Sowers honored 1 year after death

Law and firefighters Adam Sowders, killed in the line of duty one year ago. Sheriff's deputies on County Sheriff's Sgt. See SOWDERS, page 8A

## Old fire station has two prospects

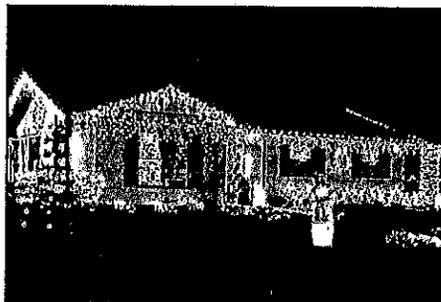
Caldwell City Council members were briefed on Tuesday, Dec. 16, on two prospects interested in purchasing the old Fire Station and renovating it to another use.

A Burleson County businessman, who wishes to remain anonymous at this time, is still interested, although his specific plans are unknown at this time, city administrator Johnny Price said after the meeting. Price briefed the council

on his interest in a 30-minute executive session, and the council took no action after the executive session.

And the Theatre Guild of Burleson County is also interested, for a possible community theater location or for other community events, guild member Sydnie Hibburn told the council.

The council set no specific timelines for either prospect to submit a bid, and they will wait See COUNCIL, page 2A



**THE DONNIE AND Betty Sachs** home on 801 Dillard Street was the first place winner in the City of Caldwell's annual Christmas Holiday Lighting Contest. — Tribune photo by Roy Sanders

## Special election Jan. 13

Just hours after Lois Kolchort was sworn in as the newest state senator on Monday, Dec. 22, Gov. Rick Perry called a Jan. 13 special election to fill the Brazos Republican's former seat in the Texas House.

Gov. Perry made the announcement on Tuesday, Dec. 23, to call for the special election to fill the vacant seat See ELECTION, page 4B



MERRY CHRISTMAS TO ALL!

# WATER

FROM PAGE ONE

David Beckmeyer, featuring presentations by the Fort Oak Savannah Groundwater Conservation District (POSGCD), the San Antonio Water System (SAWS) and Blue Water Systems Inc.

In addition, POSGCD has a management plan to ensure that aquifer water levels are protected and Burelson and Milam counties do not run out of water, and they will continue monitoring the aquifers with their monitoring wells. POSGCD General Manager Gary Westbrook said.

And there is no stopping the water export plan because it is legal and properly permitted, local officials said. However, not everyone is convinced.

The League of Independent Voters of Texas in Bastrop opposes the export and issued a written statement entitled "Floods Across the Aquifer" by those attending, saying POSGCD has over permitted the water for the project.

In addition, Dr. T. Barrett Lyne, a soil scientist and wildlife biologist, distributed his pamphlet explaining why he also opposes the "water grab" from Burelson County to San Antonio.

The San Antonio City Council has approved a 142-mile pipeline that would ship 60,000 acre feet of groundwater annually from Burelson County by 2020. The SAWS board negotiated a contract with Vista Ridge Consortium for the project.

The Vista Ridge pipeline will pump water from Burelson County to San Antonio, bringing 16.3 billion gallons of new water from the Carrizo and Simsboro Aquifers by 2020, SAWS officials said previously.

Vista Ridge is a partnership between Abengoa and Blue Water Systems, which has secured about 3,400 leases for water rights with Burelson County landowners.

The plan would help secure San Antonio's long-term water needs, ease use of the Edwards Aquifer and boost their water potential by 20 percent.

Westbrook told the gathering that the district uses an equitable system that protects private property rights while protecting aquifer levels. And there is a very large supply of stored groundwater in Central Texas, Bone and Dr. Young explained that groundwater production from deeper, down-dip aquifer zones, such as will be produced by Vista Ridge, reduces artesian pressure but does not deplete aquifer sediments in the well field area.

Bone showed diagrams showing how the Simsboro aquifer responded to past pumping in the region by wells in the Bryan-College Station area and by wells accessed with the Walnut Creek, Three Oaks and Sandow mines.

Individual landowners own the water under their land, and the landowners rights are protected by the groundwater district, Williams said after the meeting. "The pipeline project is based on leasing individuals selling their water and the local groundwater district controlling the amount of water that can be produced and transported to San Antonio."

In addition, the citizens of San Antonio will respect Burelson County's residents, he said. "We will not waste it, and we will treat it right," Williams said at the meet-

ing. "If your local aquifer says we can't give 50,000 acre feet in a year and we can only allow 30,000, we'll be in a bind. It is not in our best interest or your best interest."

Puentegave an overview of SAWS and its operation and its long-term water projects.

"We have great respect of the groundwater," Puentegave said. "We are the largest major city in Texas that is groundwater based."

Responding to questions, Westbrook said POSGCD has shallow monitoring wells in the Queen City, Sparta and Yegua-Jackson Aquifers, but he would like more for the Yegua-Jackson Aquifer.

Why were no citizens of Burelson and Milam counties invited to speak? Burelson County Judge Mike Botherland said the meeting was meant to be educational, not a debate. And written questions were taken from the audience, he said.

Burelson County resident Bruce Brinkman said after the meeting that local citizens attending should have been allowed to speak.

And the water district should have held a meeting before the SAWS deal with Vista Ridge was finalized, he said. In addition, notices placed in the newspaper said nothing about only accepting written questions, he said.

Westbrook said the meeting was for people at the meeting? Sutherland responded that it was publicized in the area news media. Also, there was a misconception that this was an official meeting of the local governing bodies, he said.

In fact, it was not, although POSGCD posted it for their board in case a quorum attended, Sutherland said.

Why did San Antonio agree to purchase 50,000 acre feet when the amount they need is less? Williams said, us with any major infrastructure project, you must build to an economy of scale.

You don't build a 142-mile pipeline unless you move a volume that is economical, he said. It is similar to a power plant where the owner sells additional electricity into the grid until it is used locally, he said.

Blue Water was also asked if they were still contacting landowners to lease property. Ross Cummings of Blue Water responded that they were not. They have all the leases they need for the project, he said.

Bone was also asked: If our aquifer is drought free, what about the Edwards Aquifer? Bone responded that the Edwards is a differ-

ent kind of aquifer than the Simsboro and Carrizo, where water moves through the pore spaces between the sand grains that make up these aquifers.

In the Edwards, water flows through fractures and conduits dissolved in limestone, he said. As a result, the Edwards tends to recharge and discharge relatively quickly, and stores significantly less water per unit volume of aquifer, which makes it more susceptible to drought, he said.

Lyno's fier states that unsustainable growth in San Antonio and the I-35 corridor has overwhelmed the Edwards Aquifer.

"Historic drought in Texas has limited recharge of aquifers, but the Edwards is a fast-recharge aquifer, and the Simsboro is so slow, it's called 'thousand-walks,'" the fier states.

Lyno's fier warns that existing water wells may go dry, and aquifers may reach their down limits, especially in time of natural droughts.

"Aquifers may not supply enough water and, especially the Simsboro, an artesian aquifer that relies on pressure, could be permanently damaged," the fier states.

Westbrook also asked why there were no public meetings in Burelson and Milam counties before the SAWS deal was approved.

Westbrook responded that POSGCD's board held numerous public hearings and open meetings for the last decade for a series of Blue Water permits - always anticipating a large water export project.

"For some of you this is new news, but for us this has been a day at the office," Westbrook said. "We have been prepared for 10 years."

Regarding the League of Independent Voters, their information sheet stated they were from Leo and Bastrop counties, and their area is covered by the Lost Pines Groundwater Conservation District.

"We believe that your groundwater district (POSGCD) has overpermitted our mutual aquifer," the statement said. "We are not here to blame you, but we are asking for your help to rein them in."

Lost Pines "is being dug by water profiteers who also want mega-contracts just across the county line on the same aquifer," the statement said.

Though POSGCD says they have a plan to protect the aquifer, the rules indicate otherwise, the statement said.

"City and county officials along the IH-35 corridor also have their eyes on the aquifer," the statement said.

ing. "If your local aquifer says we can't give 50,000 acre feet in a year and we can only allow 30,000, we'll be in a bind. It is not in our best interest or your best interest."

Puentegave an overview of SAWS and its operation and its long-term water projects.

"We have great respect of the groundwater," Puentegave said. "We are the largest major city in Texas that is groundwater based."

Responding to questions, Westbrook said POSGCD has shallow monitoring wells in the Queen City, Sparta and Yegua-Jackson Aquifers, but he would like more for the Yegua-Jackson Aquifer.

Why were no citizens of Burelson and Milam counties invited to speak? Burelson County Judge Mike Botherland said the meeting was meant to be educational, not a debate. And written questions were taken from the audience, he said.

Burelson County resident Bruce Brinkman said after the meeting that local citizens attending should have been allowed to speak.

And the water district should have held a meeting before the SAWS deal with Vista Ridge was finalized, he said. In addition, notices placed in the newspaper said nothing about only accepting written questions, he said.

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## Snook lighting contest

The Snook Extension Education Association (EEA) announced the winners of the 2014 Snook Christmas Lights event on Monday, Dec. 22. Daniel and Teresa Leseher at 108 Skrabonek Street won the contest. Willis and Shirley Everline at 10132 F.M. 60 placed second, and Daniel, Alma and Anna Yburri at 1470 County Road 269 placed third. For more information about EEA call (210) 244-3362 or (817) 366-7788.

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Snook ISD  
Brenda Krueck, Superintendent of Schools

SUBJECT TO ORDINANCES

Snook ISD is accepting bids for a no-drill/no surface use Oil Gas and Mineral Leases. Bids will be received until January 15, 2015 at 3:00 p.m. All bids will be received and opened in the office of the Superintendent of Schools, 10310 FM 2155, Snook, TX 77878. The Superintendent of Schools will provide a report to the Board for their receipt and use in consideration and possible action. The Snook ISD Board of Trustees shall hold a Public Hearing and possibly take action on the bids on January 29, 2014.

You may obtain the Bidding Documents, including the preferred form of lease, from the Superintendent of Schools at the address shown above or by phone request to 979-272-8397 extension 102.

Snook ISD is currently seeking bids to lease (no drilling or surface use) the following real property for the purposes of investigating, exploring, prospecting, mining and producing oil and gas:

5 acres of land, more or less, in Burelson County, out of the James Hollingsworth Survey, A-39, and being the same land described in that certain Deed dated February 24, 1950 from Blazy Johnson, a widow, as Grantor to Trustees of Snook Rural High School, Blandier 235, at Brenham, recorded in Volume 105, Page 457, of the Deed Records of Burelson County, Texas.

Any lease shall be NO DRILL/NO SURFACE USE LEASE.

The information stated herein has been gathered a good faith by the District. However, it shall be the responsibility of the Bidder to determine the exact property, including the exact net mineral acres, to be leased. Snook ISD does not make any representations regarding the Snook ISD's ownership and right to lease the interest in the land. Bidders must research the county and any other records Bidders deem necessary to determine the extent of such interest. No other leases are subject to the proposed lease.