

**Comments to
Lost Pines GCD Board of Directors
Regarding End Op, LP's application for Operating and Transport Permits
to pump and transport 46,000 ac-ft/yr of groundwater from the District.**

By Steve Box, Executive Director, Environmental Stewardship

- A. Environmental Stewardship, as a nonprofit corporation and landowner, owns groundwater in place and has a right to conserve and protect its fair share of the water resources associated with the commonly shared aquifers from which End Op seeks to pump 46,000 ac-ft/yr from.**

Environmental Stewardship (ES) is a 501(c)(3) Texas nonprofit organization whose purposes are 1) to meet current and future needs of the environment and its inhabitants by protecting and enhancing the earth's natural resources, 2) to restore and sustain ecological services using scientific information, and 3) to encourage public stewardship through environmental education and outreach. ES is a landowner in Bastrop County within the territorial jurisdiction of the Lost Pines Groundwater Conservation District (LPGCD or District). ES, along with three other landowners, is seeking to participate as an affected persons¹ in the contested case hearing requested by Aqua Water Supply Corporation in relation to the End Op, LP application for operating and transport permits to pump and transport 56,000 ac-ft of groundwater per year from the Simsboro Aquifer in Bastrop and Lee counties.

As the owner of property² located adjacent to the Colorado River in the Calvert Bluff recharge zone³, ES has ownership of groundwater in the Colorado River Alluvium, Carrizo, Calvert Bluff, Simsboro, and Hooper aquifers beneath its property. ES, under Lost Pines standards, has an ownership interest in groundwater in the above mentioned aquifers.

The Texas Supreme Court and Legislature have confirmed by decision and statute that 1) landowners own, as real property, the groundwater in place beneath their land⁴, 2) the landowner is entitled to produce groundwater without causing waste or malicious drainage of other property or negligently causing subsidence⁵, 3) that nothing in the statutes shall deprive or divest that ownership⁶, and 4) that groundwater conservation districts are the State's preferred method of regulating groundwater⁷.

The Texas Supreme Court opined in the EAA v. Day decision⁸ that, though groundwater is different in many respects from oil and gas, it is appropriate in certain circumstances

¹ Cause No. 29,696 pending in Bastrop District Court.

² Tahitian Village UNIT 4, Block 14, Lot 4-0950

³ Geologic Atlas of Texas, Austin Sheet.

⁴ Section 36.002 (a) of the State Water Code.

⁵ Section 36.002 (b) of the State Water Code.

⁶ Section 36.002 (c) of the State Water Code.

⁷ Section 36.0015 of the Texas Water Code.

⁸ Day Decision: The Edwards Aquifer Authority and the State of Texas, Petitioners, v. Burrell Day and Joel McDaniel, Respondents (Case No. 08-0964) Argued February 17, 2010; Opinion delivered February 24, 2012.

to apply oil and gas law to the regulation of groundwater, with the caveat that “[u]nlike oil and gas, groundwater in an aquifer is often being replenished from the surface, and while it may be sold as a commodity, its uses vary widely, from irrigation, to industry, to drinking, to recreation. 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.”⁹ Even given such differences, however, the court felt that these differences were outweighed by the common principle that both represent “a shared resource that *must* be conserved under the Constitution”¹⁰.

Under the guiding principles provided by the Texas Supreme Court, applying oil and gas law¹¹, the Court found it critically important that the conflict between absolute ownership in place, as opposed to the rule of capture’s absolutism for draining oil and gas from the property of another, were resolved through the existence of correlative rights in the common pool¹². Such correlative rights afford each landowner a reasonable opportunity to produce his fair share of oil and gas under his property in consideration of his absolute ownership of the oil and gas in place¹³. Pursuant to such rights, each landowner has privileges against other landowners in the common pool to take oil and gas therefrom by lawful operations; each owner has duties not to exercise his rights in a way that injures the common source of supply; each owner “has rights that other landowners not exercise their privileges of taking in such a way as to injure the common source of supply.”¹⁴

In the oil and gas context, it is the Railroad Commission that serves as the expert to equitably balance the interests of different landowners. In the groundwater context, it is the role of groundwater districts to serve as experts, resolving this conflict of interests between not only landowners who want to produce the groundwater they own “to the limit” versus other landowners who wish to keep their groundwater in the ground, but also non-commercial uses, sustainability, and environmental considerations.

Accordingly, it is the duty of the Lost Pines District to protect the property rights of landowners like ES and others who want to conserve and reserve their groundwater in place for future use, non-commercial uses, sustainability, and environmental considerations.

B. Environmental Stewardship has attempted to participate in the proceedings regarding the End Op application and, along with other landowners, petitioned to be admitted as a party to the contested case hearing.

Environmental Stewardship, as a landowner with groundwater ownership in place in the Colorado River Alluvium, Carrizo, Calvert Bluff, Simsboro and Hooper aquifers, and in seeking to fulfill its purpose to conserve and protect the water resources underlying its

⁹ Day at 831

¹⁰ Day at 832 (emphasis in original)

¹¹ Landowners Initial Brief: Case #29,696 in Bastrop District Court.

¹² The court cites Elliff at 562.

¹³ The court cites Elliff at 562.

¹⁴ The court cites Elliff at 562-563.

property, has for many years advocated before the District to fulfill the District's duty to consider the impacts of groundwater pumping on surface waters, groundwater and other permits prior to permitting groundwater pumping and prior to establishing desired future conditions. In this interest, ES has attempted to participate in the permitting processes before the District and in the proceedings of Groundwater Management Area 12 (GMA-12), in which the District is a member.

In addition to the activities described above, ES, along with three other landowners, further petitioned to participate in the contested case hearing to which this permit action is related, but was denied such opportunity¹⁵. Had ES and the other landowners been admitted as parties to the End Op, LP and Aqua Water Supply Corporation contested case hearing, we would have demonstrated, through expert witnesses and cross-examination, that the applicant's requested pumping will damage the Simsboro and the associated Colorado River Alluvium, Carrizo, Calvert Bluff and Hooper groundwater aquifers with which the Colorado River has hydrologic communications as indicated by the GMA-12 review discussed later herein. By damaging these resources, the applicant's requested pumping will damage the ability of landowners who rely on domestic wells in these other aquifers to access groundwater, and the ability of non-well owning landowners to exercise their right to conserve their fair share of groundwater for future generations, and future purposes such as non-commercial uses, sustainability and environmental considerations.

Environmental Stewardship maintains its position that it should have been admitted as a party to the contested case hearing in this matter, and by these comments Environmental Stewardship again asks that the District reverse the ALJ's decision and remand this matter to SOAH with instructions that ES be granted party status.

C. The proposed permit is *premature* because the District has not complied with its duty to conserve groundwater resources, to balance conservation and development in its actions, and to consider the impact of pumping on surface water, groundwater, and other permits as required by the Conservation Amendment to the Texas Constitution and the Texas Water Code.

The Conservation Amendment to the Texas Constitution provides that the natural resources of the state, including water (both groundwater and surface water) are public rights and duties¹⁶ to be preserved and conserved and that development of those resources be balanced against their conservation. The requirement to achieve balance between development and conservation is likewise affirmed by the Texas Legislature in the Texas Water Code¹⁷.

¹⁵ Pending before Bastrop District Court Case No. 29,696.

¹⁶ Conservation Amendment of the Texas Constitution: Section 59, CONSERVATION AND DEVELOPMENT OF NATURAL RESOURCES AND PARKS AND RECREATIONAL FACILITIES; CONSERVATION AND RECLAMATION DISTRICTS: (a) The conservation and development of all of the natural resources of this State, ... And the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto."

¹⁷ Section 36.1132 of the Texas Water Code.

The Texas Water Code also requires that groundwater conservation districts, prior to granting groundwater well pumping permits and prior to establishing desired future conditions, consider the impacts of such pumping on surface waters, groundwater and other permits¹⁸. Unfortunately, for whatever reasons, groundwater districts have arbitrarily disregarded this duty in permitting for more than eighteen years and have arbitrarily disregarded this duty in establishing desired future conditions for more than four years¹⁹.

Despite being reminded of the stipulations in the Conservation Amendment and the Water Code by Environmental Stewardship and others on several occasions over a period of more than three years, and of being urged to account for these stipulations when considering permits applications such as End Op's, the District has failed to do so. Therefore this permit is *premature* because the District has not yet complied with the Texas Water Code that is designed to protect surface features and shallow wells, and to guide permit decisions. Section 36.113(d)(2) requires that *"before granting or denying a permit ...the district shall consider whether the proposed use of water ... unreasonably affects existing groundwater and surface water resources or existing permit holders"*. This law has been on the books for over 18 years, yet this district continues to ignore this law in making final permit decisions without complying with the law.

- Existing groundwater resources include other aquifers such as the Carrizo, Calvert Bluff, and Hooper aquifers.
- Existing surface water resources include rivers, streams and springs -- which would include springs and seeps that hydrate near surface soils that support terrestrial vegetation.
- Existing permit holders include exempt domestic wells that are registered with the District.

Lost Pines District's reported considerations

There are only two Lost Pines District documents that reference any evaluation of the impact of End Op's requested pumping on groundwater or surface water. The first is a memorandum from Mr. Donnelly to Joe Cooper²⁰, and the second General Manager Joe Cooper's recommendations to the Board²¹.

Donnelly's report on item 2 - whether the proposed use of water unreasonably affects existing groundwater and surface water resources or existing permit holders - reports on the impact of End Op's pumping on two Aqua wells, two City of Elgin wells, and two

¹⁸ Section 36.113 (d)(2) regarding permitting; Section 36.108 (d)(4) regarding DFCs.

¹⁹ Section 36.113 (d)(2) has been in the Texas Water Code since 1997 (eighteen + years): To quote the Act "(d) Before granting or denying a permit, the district shall consider whether (2) the proposed use of water unreasonably affects existing groundwater and surface water resources". Section 36.108 (d)(4) has been in the Texas Water Code since 2011 (four + years): To quote the Act "Before voting on the proposed desired future conditions of the aquifers under Subsection (d-2), the districts shall consider: (4) other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water;"

²⁰ Donnelly, Andy. February 6, 2013. Subject: End Op permit review items (2 & 8).

²¹ Cooper, Joe. March 20, 2013. End Op LP's Applications for Well Registration, Operating Permits and Transfer Permits for Well Nos. 1-4.

Manville wells. With a caveat regarding the use of the GAM to estimate drawdown, the report concludes that

"it is not unreasonable to expect that pumpage from the End Op project would result in additional drawdown of hundreds of feet over 50 years in the two existing Aqua permitted wells"; "it is not unreasonable to expect that pumpage from the End Op project would result in additional drawdown of between 100 and 200 feet in the existing Elgin wells"; and of the Manville wells, "We might expect that these wells may see additional drawdown over 50 years of 100 to 200 feet".

No consideration is given to other known registered Simsboro wells, and no consideration is given to known registered wells in the Carrizo, Calvert Bluff, or Hooper aquifers. No justification is given for the implied conclusion that the impacts are *not unreasonable*.

Donnelly's total evaluation of the impact of the proposed End Op pumping on surface waters is contained in a single paragraph:

"A quantitative evaluation of the impact of the proposed pumpage on surface water resources within the District is difficult to make. The only quantitative tool available is the GAM, and this model is a poor tool to effectively evaluate impacts to surface water within the District based on this application. However, because the majority of the flow of the Colorado River is controlled by the release of water from the Highland Lakes, the impacts from this project on flow in the Colorado River will not be unreasonable."

Unlike in the evaluation of Aqua, City of Elgin and Manville wells, no attempt is made to inform the General Manager or the District of the predictions the GAM makes on the impact on surface waters nor the implications of those predictive trends. Certainly no justification is given for the conclusion that the impacts *"will not be unreasonable"*.

The Cooper memorandum to the Board merely reflected the Donnelly report and dismissed any need to further investigate the impact of End Op's proposed pumping on other aquifers, other permits, other registered wells, or rivers, streams and surface water features without justification.

Donnelly did not use the methodology that he authored²² titled *"Instructions for Running the Carrizo-Wilcox Ground-Water Model and Surface Water Models to Determine the Impacts of Carrizo-Wilcox Aquifer Pumping on Surface Water Flows"* to provide the General Manager or the District with estimates of the impacts of End Op pumping on the Colorado River and its tributaries. The following quotes from the report demonstrate the value of such an evaluation:

- *"All of these studies, at least to some degree, recognized that the Carrizo-Wilcox aquifer and the major streams and rivers ... are interrelated in-stream*

²² Donnelly, Andrew, LBG-Guyton Associates. Date stamped October 1, 1998. "Instructions for Running the Carrizo-Wilcox Ground-Water Model and Surface Water Models to Determine the Impacts of Carrizo-Wilcox Aquifer Pumping on Surface Water Flows in the Nueces and Guadalupe-San Antonio River Basins", preface to "Interaction Between Ground Water and Surface Water in the Carrizo-Wilcox Aquifer" prepared for the Texas Water Development Board, August 1998.

aquifer systems where ground water is in hydraulic connection with the surface-water bodies."

- *"The outputs from the ground-water model were used with surface-water models to demonstrate how streamflows respond to changes in ground-water levels, and also to demonstrate how water rights, streamflows and fresh-water inflows to the ... estuaries may be affected."*
- *"Additionally, the results of the study indicate that average annual streamflows will be reduced in each of the two major river systems that drain the area."*
- *"The models indicate an interaction between ground water and surface water. As ground-water levels change, surface-water discharge also changes, but we currently lack the data to accurately define the magnitude of these changes."*
- *"The collection of basic hydrogeological data pertaining to the Carrizo-Wilcox aquifer should be continued and expanded in order to better understand the following: (f) degree of hydraulic connection between the Carrizo aquifer and streams, rivers, and other surface-water bodies on the outcrop."*

As early as 2009²³, Environmental Stewardship attempted to inform the board of our concerns regarding the impact of groundwater pumping on the Colorado River and its tributaries, but has been denied the opportunity to address the Board other than in public comments (severe time limitations and no discussion). Lacking the opportunity to have a meaningful discussion with the Board, ES has provided professional reports by Mr. George Rice to the Board and the District on several other permit applications (Forestar and LCRA). Additionally, ES has made presentations to GMA-12 where our concerns have been more fully laid out²⁴.

To demonstrate the type of information that ES would have presented were we allowed to participate in the hearing, ES is now providing the Board and District with two reports by George Rice, 1) on the impact of End Op's²⁵ proposed pumping of 30,000 ac-ft./yr. and 46,000 ac-ft/yr on the Simsboro, Carrizo, Calvert Bluff and Hooper aquifers (Attachment 1), and 2) the impact of combined²⁶ pumping (baseline + End Op +

²³ Box, Steve. March 10, 2009. Letter to the Board re: Request to address Board on "Desired Future Conditions". The letter and an email request on January 7, 2009 to Joe Cooper cc: Katie Kaighin, re: GW-SW interaction in Carrizo-Wilcox GAM, were never answered. ES has not been allowed to address the board on the issue of concern in this and other permits.

²⁴ Box, Steve. December 19, 2013. Letter to GMA and District Representatives re: Impacts of Groundwater Pumping on the Colorado River -- Included Rice's Report. December 12, 2013. Forestar's Proposal to Pump Groundwater from the Simsboro Aquifer; ES June 17, 2014 PowerPoint presentation to GMA-12 titled: GMA-12 DFCs, GW-SW Considerations; Steve Box March 27, 2015, letter to GMA-12 and District Representatives re: Review of predictive scenarios for comparison to adopted desired future conditions -- included copy of Rice's Report. February 24, 2015. Evaluation of Drawdowns Resulting from Baseline Pumping and Potential Pumping from the Simsboro Aquifer in Bastrop and Lee Counties, Texas; Steve Box February 4, 2016, letter to GMA-12 and District Representatives re: Summary of ES comments and recommendations concerning GMA-12's DFC review and Power Point presentation titled "GMA-12 DFCs, Summary of ES Comments and Recommendations".

²⁵ Rice, George. August 11, 2014. Evaluation of End Op's Proposal to Pump Groundwater from the Simsboro Aquifer.

²⁶ Rice, George. March 22, 2016. GAM Predictions of the Effects of Baseline Pumping Plus Proposed Pumping by Vista Ridge, End OP, Forestar, and LCRA.

Forestar + LCRA + Vista Ridge) on the Simsboro, Carrizo, Calvert Bluff and Hooper aquifer (Attachment 2). These reports also provide qualitative and quantitative data on the impact of End Op's proposed pumping on the Colorado River and its tributaries. The reports also contain a detailed analysis of the GAM's ability to predict trends related to pumping rate, pumping duration, and distance of pumping from the river that support the use of the trend information in public policy decision-making.

Rice's End OP report concludes that the proposed pumping would:

- Reduce hydraulic heads in the Carrizo, Calvert Bluff, Simsboro, and Hooper aquifers.
 - Where these aquifers are confined, the reduced heads would cause water levels in wells to decline.
 - Where these aquifers are unconfined (i.e., recharge areas), the reduced heads would cause dewatering of portions of the aquifers.
- Reduce groundwater discharge to the Colorado River, thereby reducing the amount of water flowing in the river.

Rice's Combined pumping report concludes that baseline pumping would:

- Reduce hydraulic heads (i.e., water levels or hydraulic pressure) in the Hooper, Simsboro, Calvert Bluff and Carrizo aquifers.
- Where these aquifers are confined, the reduced heads would cause water levels in wells to decline.
- Where these aquifers are unconfined (recharge areas), the reduced heads would cause dewatering of portions of the aquifers.
- Reduce groundwater discharge to the Colorado River, thereby reducing its flow.
- Additional pumping by Vista Ridge, End Op, Forestar, and LCRA would result in greater head reductions than would baseline pumping alone, and a greater decrease in groundwater discharge to the Colorado River (Figure 1).

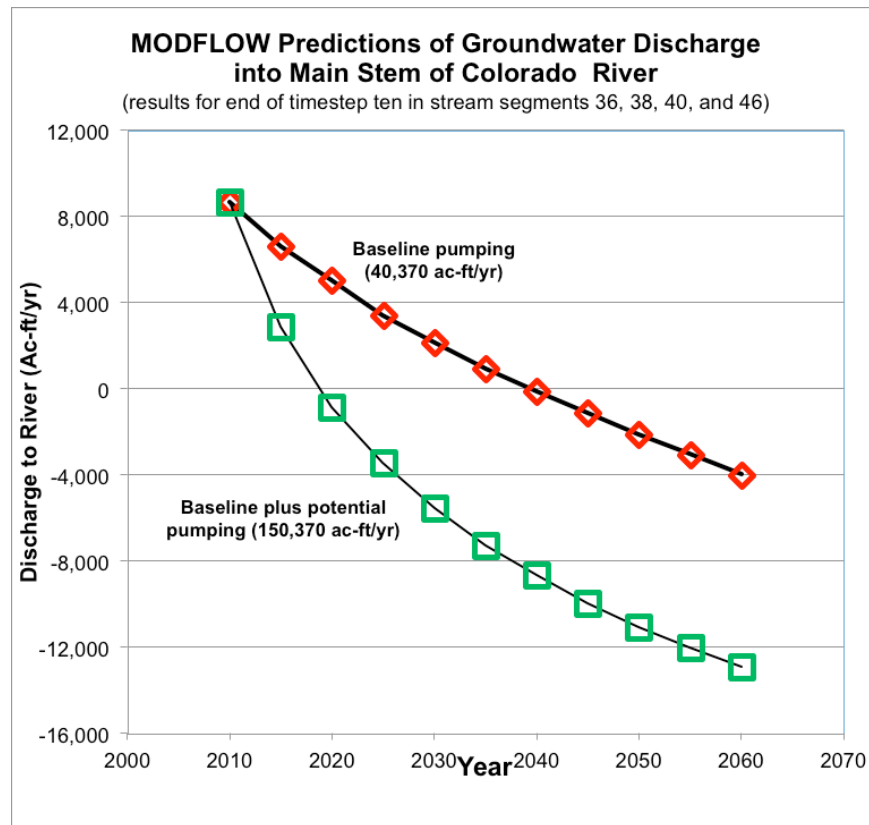


Figure 1: Predicted reduction of discharge of groundwater into the mainstream Colorado River due to combined pumping.

The GAM predicts that there will be a trend toward reduced outflows of groundwater from the aquifers into the Colorado River over the 50-year pumping period (Figure 1). Though we agree that the GAM is not suitable for making reliable quantitative predictions²⁷ regarding the amount of reduction or the rate of reduction, the Rice report confirms that the GAM is reliable in predicting the trend. The trend indicates that, over time, the relationship between the Colorado River -- which is currently a "gaining stream" -- and the Carrizo-Wilcox aquifer group will likely be reversed within the planning period. The GAM estimates that this change from a "gaining stream" to a "losing stream" will occur earlier with the combined pumping (perhaps as early as 2020) than with baseline pumping alone (perhaps as early as 2040). This is a significant, and unreasonable impact of groundwater pumping on the Colorado River, especially during drought conditions. This is an impact that deserves due diligence to study, monitor and mitigate potential impacts.

Contrary to Donnelly's conclusion that the flow of the Colorado River is primarily controlled by releases of water from the Highland Lakes, and therefore the impact of the

²⁷ The limitations of the GAM in making reliable quantitative predictions is discussed in the Rice report and has been reviewed by the GMA-12 District representatives. GMA-12 districts, along with the Lower Colorado River Authority, Brazos River Authority, the Colorado-Lavaca Bay and Basin Stakeholder Committee, and Environmental Stewardship have also recognized this limitation and have raised nearly \$300,000 to enable a robust groundwater-surface water interaction package to be included in the GAM improvements being implemented by INTERA under contract with the Texas Water Development Board (contract currently pending).

project on the Colorado River will not be *unreasonable*, the Rice Report, and Environmental Stewardship presentations to GMA-12²⁸ demonstrate that, during drought conditions, as much as 50% of the flow of the Colorado River is from groundwater in the Austin-Bastrop reach. Furthermore, Highland Lake releases during drought cannot be relied upon to provide critical environmental flows for the river. As demonstrated during the last drought, the LCRA sought, and was granted by TCEQ, relief from the requirement to provide environmental flows to the Colorado River on multiple occasions.

The drawdown maps (Figures 2-5) associated with the combined pumping study demonstrate that the effects of groundwater pumping within Lost Pines and Post Oak Savannah Groundwater Conservation Districts (GCD) are predicted to impact not only the Simsboro aquifer, but also the Carrizo, Calvert Bluff and Hooper aquifers extending to points as far away as Gonzales, Lavaca, Colorado, Austin, Grimes and Walker counties. These aquifers are hydraulically connected throughout the Carrizo-Wilcox Aquifer Group.

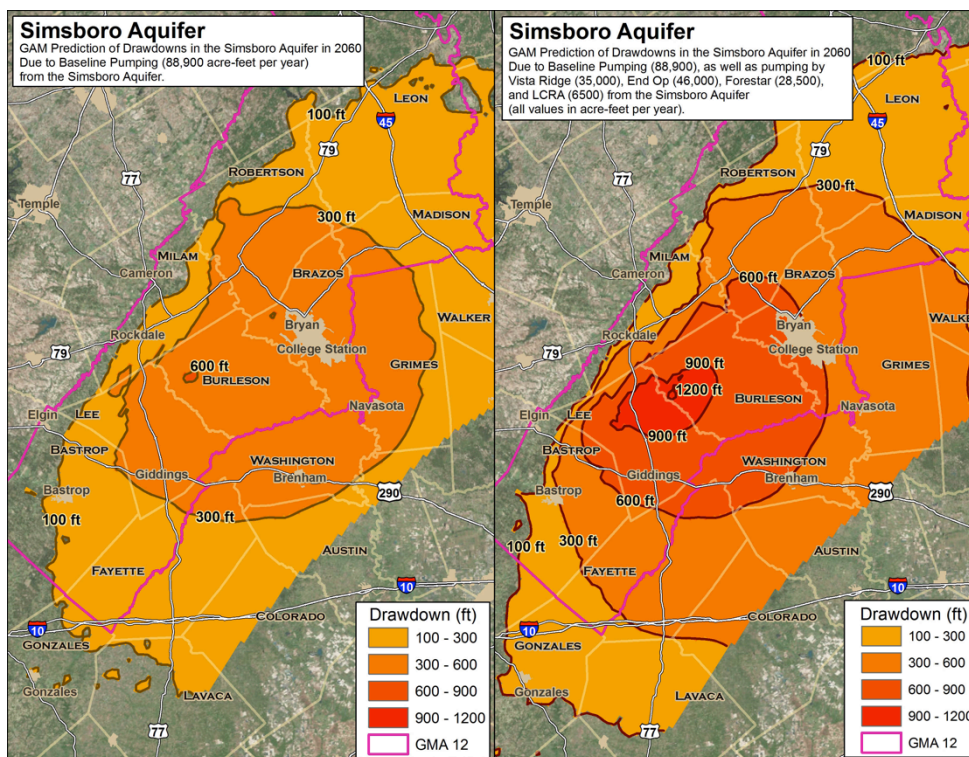


Figure 2. GAM predicted drawdowns in the Simsboro Aquifer due to baseline pumping (left) and baseline pumping plus additional pumping by Vista Ridge, End Op, Forestar, and LCRA 2000-2060 (right).

²⁸ Box, Steve. December 19, 2013. Letter to GMA and District Representatives re: Impacts of Groundwater Pumping on the Colorado River -- Included Rice's Report. December 12, 2013. Forestar's Proposal to Pump Groundwater from the Simsboro Aquifer; ES June 17, 2014 PowerPoint presentation to GMA-12 titled: GMA-12 DFCs, GW-SW Considerations; Steve Box March 27, 2015, letter to GMA-12 and District Representatives re: Review of predictive scenarios for comparison to adopted desired future conditions -- included copy of Rice's Report. February 24, 2015. Evaluation of Drawdowns Resulting from Baseline Pumping and Potential Pumping from the Simsboro Aquifer in Bastrop and Lee Counties, Texas; Steve Box February 4, 2016, letter to GMA-12 and District Representatives re: Summary of ES comments and recommendations concerning GMA-12's DFC review and Power Point presentation titled "GMA-12 DFCs, Summary of ES Comments and Recommendations".

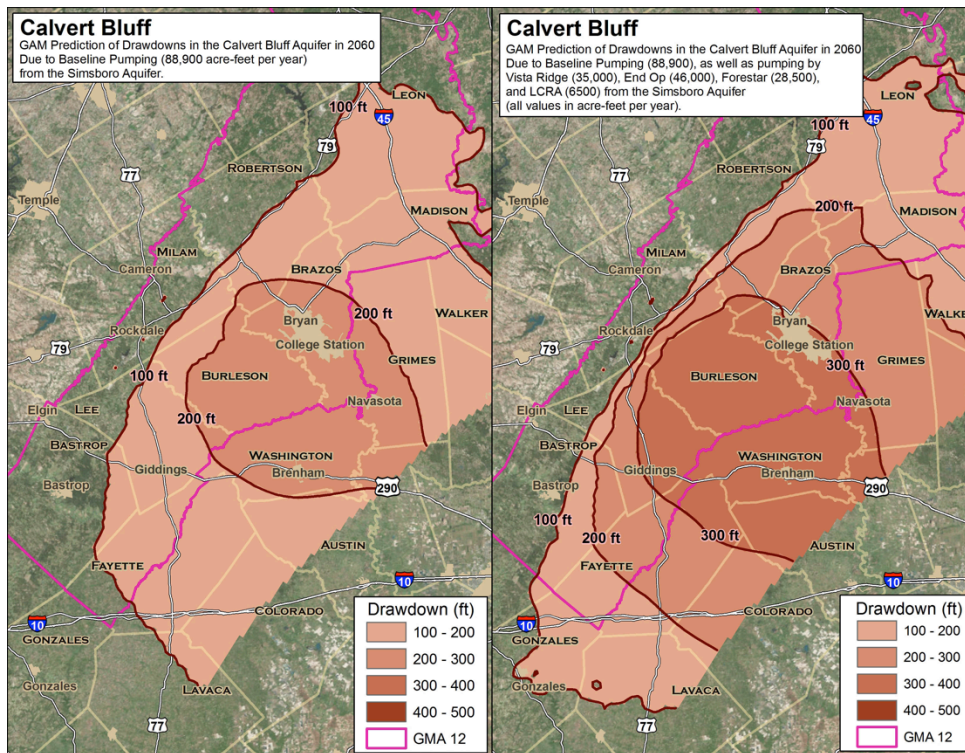


Figure 3. GAM predicted drawdowns in the Calvert Bluff Aquifer due to baseline pumping (left) and baseline pumping plus additional pumping by Vista Ridge, End Op, Forestar, and LCRA 2000-2060 (right).

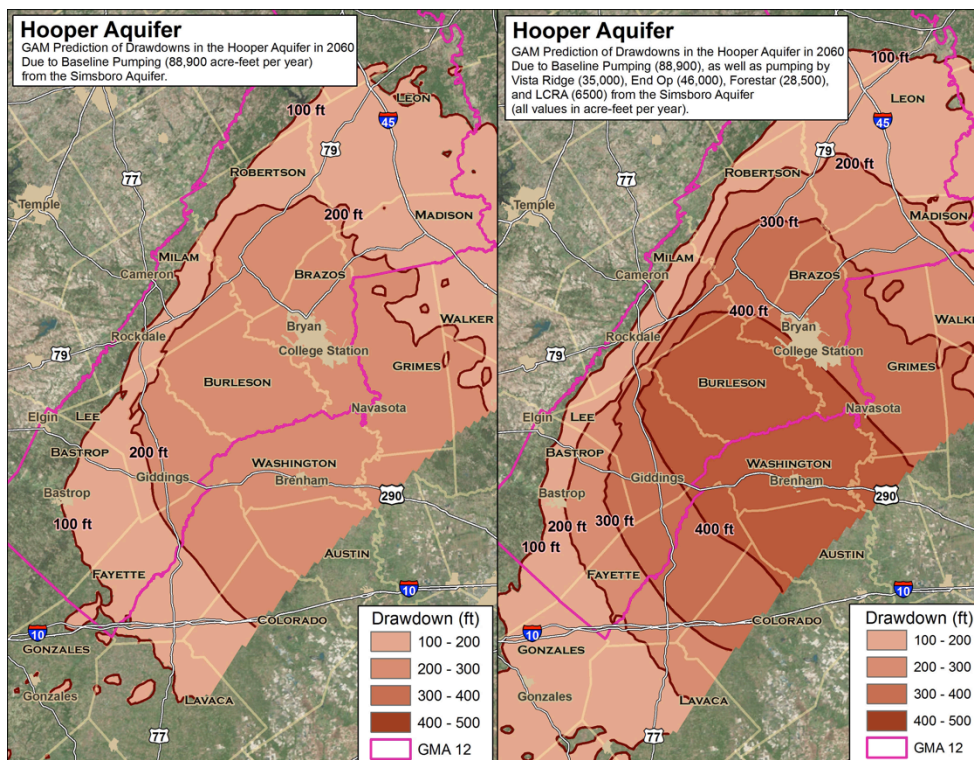


Figure 4. GAM predicted drawdowns in the Hooper Aquifer due to baseline pumping (left) and baseline pumping plus additional pumping by Vista Ridge, End Op, Forestar, and LCRA 2000-2060 (right).

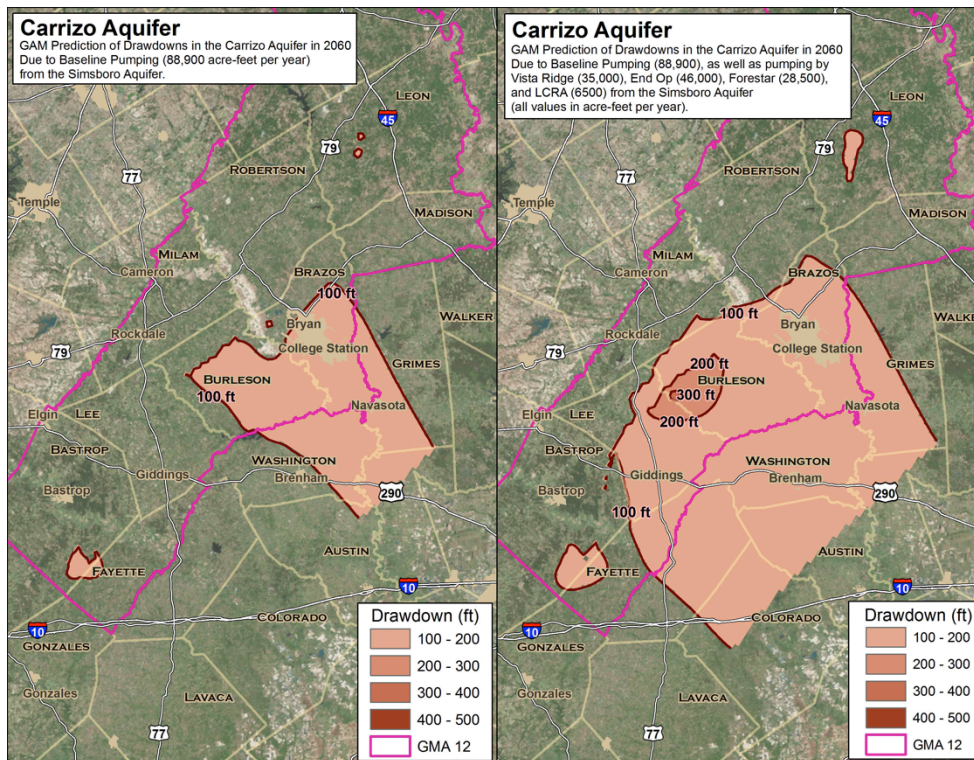


Figure 5. GAM predicted drawdowns in the Carrizo Aquifer due to baseline pumping (left) and baseline pumping plus additional pumping by Vista Ridge, End Op, Forestar, and LCRA 2000-2060 (right).

GAM predicts drawdown will exceed DFCs

Permitted (baseline) pumping plus additional planned pumping is predicted to exceed the current and proposed desired future conditions (DFCs) by 200-300 feet of drawdown for the Simsboro Aquifer by 2060 (see Table 3 from Rice Report). Though not tabulated, it is reasonable to expect that the Simsboro pumping will also have a significant effect on the DFCs of the Calvert Bluff, Hooper and Carrizo aquifers. Those impacts should be calculated by the District and included in its evaluation of the effects of the proposed End Op pumping. The maps that follow (Figures 2-5) represent the drawdown of these other aquifers that results from Simsboro pumping.

Table 3
GAM Predictions of Average Drawdowns in the
Simsboro Aquifer from 2000 to 2060 Due to Baseline Pumping and
Pumping by Vista Ridge, End Op, Forestar, and LCRA

GCD	DFC (ft)	Baseline drawdown (ft)	Drawdown due to additional pumping (ft)	Baseline plus additional drawdown (ft)
LPGCD	256	209	296	505
POSGCD	318	279	238	517

The District has failed to consider the information provided to it as a member of Groundwater Management Area 12 (GMA-12). GMA-12 has been reviewing the adopted DFCs and will be considering revisions as mandated by the Texas Water

Code²⁹. Consultants provided information to the GMA-12 representatives on May 28, 2015, for the PS-4 scenario that included a full water budget for the current planning period through 2070 and the 1975-1999 calibration period. Environmental Stewardship analyzed the water budgets as reported on June 18, 2015³⁰. The following observations, which were provided to the District representative, demonstrate that significant impacts to surface waters, other aquifers, and shallow domestic wells are likely as a result of the anticipated pumping. The analysis indicates that:

1. Outflows to surface waters are the most significant contributor of groundwater for pumping: Outflows to surface waters are modeled to have decreased by a total of 100,000 ac-ft/yr since 1975 with the greatest declines occurring in Post Oak Savannah, Lost Pines, and Mid-East Texas respectively.
2. Vertical leakage from other aquifers into the Simsboro is the second most significant contributor of groundwater for pumping. Other aquifers have been the second most significant contributors of groundwater for pumping since 1975 and is the most significant contributor during the DFC period. Vertical inflow to the Simsboro is most significant in Post Oak Savannah, Brazos Valley, and Lost Pines respectively during the DFC period.
3. Lateral flow (leakage) from neighboring counties is the third most significant contributor of groundwater for pumping. Lateral flow from other districts into the Simsboro in Brazos Valley is significant during the DFC period. Lateral flows out of Lost Pines and Mid-East Texas are the most significant with moderate outflows from Post Oak Savannah.
4. Storage change is the least significant contributor of water for pumping since 1975. Storage increased during the calibration period and decreases during the DFC period but is net neutral for the period. Thus it is false to state that most of the groundwater pumped is contributed from storage.

D. The proposed permit is *inadequate* because 1) it does not contain Special Conditions that allow future adjustments to the permit based on the impacts mentioned above as better information become available, 2) it does not provide for the mitigation fund to include wells in aquifers other than the Simsboro aquifer, and 3) the draft Operating Permit ignores groundwater availability modeling (GAM) predictions.

The permit³¹ is *inadequate* because:

1. The permit does not contain Special Conditions that allow future adjustments to the permit based on the impacts mentioned above as better information becomes available.
 - Section 36.113 (d) was amended in the 84th legislative session to add the limitation that "This subsection does not apply to the *renewal* of an

²⁹ Section 36.108(d)

³⁰ ES comments to GMA-12 on June 18, 2015, regarding Hydrological Conditions on GMA-12's DFC Form. See comments document for details.

³¹ DRAFT-End-Op-Well-1-Operating-Permit-for-publication.pdf and Monitoring-Well-System-Agreement-DRAFT-6-8-16.pdf posted on Lost Pines GCD website.

operating permit issued under Section 36.1145." As such, the District gets only one chance -- during initial permitting -- to applying this section of the law.

- Having failed to make the required considerations under Section 36.113(d), and with the above limitation, it is necessary and essential to include a Special Condition to reserve this right when better information regarding the impact on groundwater, surface water and other permits becomes available or unreasonable impacts become evident.

2. It does not provide for the mitigation fund to include wells in aquifers other than the Simsboro aquifer.

- Drawdown of other aquifers is predicted (as discussed in 3 below), and these drawdowns will likely have adverse impacts on shallow domestic wells.
- Mitigation should be extended to include the Carrizo, Calvert Bluff, and Hooper aquifers in addition to the Simsboro.

3. The draft Operating Permit ignores groundwater availability modeling (GAM) that predicts that:

- End Op pumping in the quantities requested in the Simsboro Aquifer will draw water from other aquifers thereby causing significant drawdown in the Carrizo, Calvert Bluff and Hooper aquifers.
- End Op pumping in the quantities requested will decrease the amount of groundwater that currently flows from the aquifers and into the Colorado River, streams and springs, thereby reducing their flow – especially during drought conditions – in Bastrop, Lee and Fayette counties.
- Contrary to what some groundwater hydrologists erroneously claim, the model predicts that the groundwater pumped will not come from “storage” but rather from the sources listed below. The impact is to cause irreversible damage to surface waters and shallow wells with little or no recourse provided in the Special Conditions. The sources of pumped water are, in order listed:
 - o First, the reduction in outflows to surface waters and features
 - o Second, from leakage into the Simsboro from the other aquifers and from other counties,
 - o Third, and last, from storage.
- Special Condition (4) calculations do not include a factor that considers future changes in the “rate of change” that are predicted by the groundwater model.
 - o ES modeling, that has been provided to the District³², predicts that this factor could be off by 15% or more.
 - o Differences in this calculation would likely result in granting an increase in pumping to the next phase level that would lead to a

³² Box, Steve and Michele Gangnes. December 16, 2015. RE: Proposed Forestar Settlement Agreement and Permit - Supplement. See: EXECUTIVE SUMMARY, SUBSTANTIVE COMMENTS ON SETTLEMENT AGREEMENT AND DRAFT OPERATING PERMIT and DISCUSSION OF COMMENTS with Attachments. Since the End Op Operating Permit uses the same calculations, this comment regarding the Forestar permit is applicable to the End Op permit.

greater exceedance of the desired future conditions.

E. The proposed permit jeopardizes the Desired Future Conditions (DFCs) for the aquifers, the District, adjacent Districts, and the region.

The GAM predicts that End Op pumping, especially when combined with other permitted pumping in the region (baseline pumping + End Op pumping + Forestar pumping + LCRA pumping + Vista Ridge Pumping), will cause the desired future conditions of the Simsboro Aquifer to be exceeded by 200-300 ft. of drawdown.

- This level of exceedance will trigger “pro-rata” curtailment of all permitted pumping. However, once investments in contracts and pipelines have been made, and communities have been made dependent on the water, we believe it is very unlikely that such curtailment will be possible.
- Though not tabulated in the Rice Report, it is reasonable to conclude, and would be prudent to evaluate, the effect of the proposed pumping in the Simsboro aquifer on the desired future conditions (DFCs) for the Carrizo, Calvert Bluff and Hooper aquifers.

F. The proposed permit is based on the ALJ's Proposal for Decision that resulted from self-serving and unexamined testimony allowed into the record in a sham (uncontested) Contested Case Hearing that was allowed over the General Manager's protests, and despite settlement between the parties (End Op and Aqua).

The February 11, 2014, hearing record³³ is evidence that the hearing was conducted despite the objections of the General Manager, and despite a settlement agreement that provided remedies³⁴ between the parties and that precluded cross-examination of the witnesses³⁵ by opposing parties. As a result, as argued by the General Manager, "End Op, with Aqua's cooperation, [was able to get] a proposal for decision from [the ALJ] that will purport to bind -- that they [End Op] will then purport binds the District in its decision later on³⁶." "[In] this case, the statute applies, and it applies to SOAH hearings where [the Board] cannot overturn your findings of fact without an explanation or anything that you decide as the law or policy without explaining why they were different than yours, which, of course, allows End Op and others to have another point of appeal if the Board should make a different policy decision than you make on these issues³⁷".

To Environmental Stewardship's point regarding Section 36.113(d)(2), Mr. Johnson, in his opening statement, provided a self-serving discussion on the application of sections of the water code³⁸ in order "to set the context and the framework and the history ... and

³³ Kennedy Reporting Services, Inc. Transcript on SOAH Docket No. 952-13-5210. Hearing on the Merits Tuesday, February 11, 2014

³⁴ Kennedy Report. Page 21, lines 14-18. Mr. Lein: "It's immaterial whether they dispute the evidence on impacts because they've resolved the remedy for those impacts. And in any other Court, this would have become already a nonjusticiable question or would lack jurisdiction."

³⁵ Kennedy Report. Page 78, lines 8-10. Judge O'Malley: "My understanding was -- from the prehearing the parties have waived cross. Is there -- I'm not sure about the General Manager."

³⁶ Kennedy Report. Page 15, lines 23-25. Mr. Lein.

³⁷ Kennedy Report. Page 17, lines 3-11. Ms. Melvin.

³⁸ Kennedy Report. Page 28, line 7 thru Page 47, line 9. Mr. Johnson.

outline some of the important issues and facts that [the ALJ is] going to hear about today.³⁹ In doing so Mr. Johnson limited the legal framework of the decision before the ALJ by calling attention to "the criteria in Chapter 36 that the District must consider before granting or denying or taking action on a permit application to produce groundwater. Specifically ... the one at issue today really is whether the proposed use of water unreasonably affects either the aquifer or existing permit holders⁴⁰". Had Environmental Stewardship and the other landowners been parties to the hearing, we would have cross-examined Mr. Johnson's witnesses to establish that the criteria also includes whether the proposed use of water unreasonably affects the *other aquifers, permit holders in those other aquifers, and surface waters*, as a full statement of the statute requires.

The impact of the proposed End Op pumping on other aquifers and other permit holders (including registered domestic wells) was only discussed within the contexts of the landowner mitigation fund, landowners with "potential wells within a one-mile radius of the proposed End Op wells⁴¹." After objections by the General Manager⁴² were overruled, End Op continued to place new information into the record through examination of their expert witness Mr. Michael Keester⁴³, hydrologist for the Thornhill Group, whom the District seemed unprepared to cross examine. There was no argument before the ALJ regarding the impact of End Op's proposed pumping on other aquifers or on surface waters, nor that there was a need, or requirement, to consider such matters.

End Op further argued only that the Water Code requires 1) that "total estimated recoverable storage" of the aquifer, 2) "impact on property rights of landowners", and 3) socioeconomic impacts be considered in establishing desired future conditions, disregarding the other six factors; aquifer uses or conditions, water supply needs and management strategies, hydrological conditions, other environmental impacts -- including impacts on spring flow and other interactions between groundwater and surface water, impact on subsidence, feasibility of achieving the desired future conditions, any other information relevant to the specific desired future conditions.

Clearly the ALJ, who was new to groundwater law, regulations and planning practices, was well informed on the issues in support of the End Op permit, and kept uninformed about the other issues required by law in making groundwater management and permitting decisions.

G. CONCLUSIONS/RECOMENDATIONS:

Though we would urge the Board to table or deny this permit based on the shortcomings discussed herein, should the permit be approved, we urge that the following be included:

³⁹ Kennedy Report. Page 26, lines 3-6. Mr. Johnson.

⁴⁰ Kennedy Report. Page 38, lines 5-13. Mr. Johnson.

⁴¹ Kennedy Report. Page 75, lines 4-5. Mr. Timothy Haynie, End Op investor and administrative manager.

⁴² Kennedy Report. Page 100, line 13 thru Page 103, line 1. Ms. Melvin, Judge O'Malley and Ms. Reese.

⁴³ Kennedy Report. Page 103, line 6 thru Page 114, line 15.

WHEREAS:

1. The District has not fulfilled its duty to, prior to permitting, consider the impacts of the requested pumping on the Colorado River and its tributaries.
2. The District has not fulfilled its duty to, prior to permitting, consider the impacts of the requested pumping on the other groundwater aquifers that hydrologically communicate with the Simsboro Aquifer from which the pumping is requested. Specifically, the impact on the Colorado River Alluvium, Carrizo, Calvert Bluff, and Hooper aquifers.
3. The District has not fulfilled its duty to, prior to permitting, consider the impacts of the requested pumping on other permits (except Aqua Water Supply Corporation, City of Elgin and Manville Water Supply Corporation) including registered domestic wells in hydrologically communicating aquifers referenced above.
4. The Contested Case Hearing⁴⁴ was not, in fact, a contested hearing. Based on the settlement agreement reached between the parties to the hearing, Aqua WSC did not challenge or cross-examine evidence or expert witnesses at the initial hearing or the remand hearing. The General Manager called this matter to the attention of the ALJ and requested that the hearing be cancelled, but the request was denied.
5. The ALJ's order containing the recommendation that End Op, LP be granted a 46,000 ac-ft. per year operating and transport permit was based on erroneous evidence allowed through a sham hearing that was not cross examined.

THEREFORE, ES Requests/Recommends the following to remedy the inadequacies in the permit:

1. It is necessary and essential to include a Special Condition to reserve the right to consider Section 36.113(d) when better information regarding the impact on groundwater, surface water and other permits becomes available or unreasonable impacts become evident.
2. The Operating Permit should contain a condition that, once the GMA-12 GAM improvements are completed, the District, working with GMA-12, will conduct studies to predict and consider:
 - a. The impact of the permitted pumping on surface waters;
 - b. The impact of the permitted pumping on hydrologically connected aquifers;
 - c. The impact of the permitted pumping on domestic wells in hydrologically connected aquifers; and
 - d. The impact of the permitted pumping on currently adopted DFCs.
 - e. Changes that may be made to the terms and conditions of the Operating Permit.
3. Special Condition (13) on mitigation should be amended to include the "Simsboro, Calvert Bluff, Carrizo, and Hooper aquifers" in order to protect registered domestic wells in the communicating aquifers greater than one mile from the End Op well field.

⁴⁴ End OP, LP and Aqua Water Supply Corporation contested case hearing, February 11, 2014.

4. Special Condition (4) calculations should be revised to include a factor that considers future changes in the “rate of change” that are predicted by the groundwater model.
5. The monitoring well agreement should contain a requirement that groundwater-surface water monitoring wells be included in order to provide real-time data on the impact of pumping on the Colorado River and its tributaries.

ATTACHMENTS

Attachment 1. Rice, George. August 11, 2014. Evaluation of End Op’s Proposal to Pump Groundwater from the Simsboro Aquifer.

Attachment 2. Rice, George. March 22, 2016. GAM Predictions of the Effects of Baseline Pumping Plus Proposed Pumping by Vista Ridge, End OP, Forestar, and LCRA.